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INDEX OF CONTENTS.

JANUARY TO JUNE, 1887.

A

Aberdeen, the old Oak tree at, 451
Abies Davidiana, 481
Abobra viridiflora, 803
Acacia, iconography of Australian species of, 252; A. lophantha, 176
Ada aurantiaca, 422, 458
Adiantum Farleyense, 73
Adiantums, a decade of new, 41, 110, 447, 547
Aërides mitratum, 801, 834; A. vandarum, 358
Afghan boundary flora, 221
Agaricus gambosus (St. George's Mushroom), 545
Agave marmorata, 252
Agricultural Returns of Great Britain for 1886, 215; stations, American, 50
Alexandra Palace, 740
Algæ genetic affinities of, 421
Allamandas, 482
Allium album, 47
Aloes in Natal, 612
Alpine garden, the, 47, 72, 109
Alpine plants in winter, 318
Alton Towers, 243, 289, 325
Amaraboya princeps, 453
Amaryllis, a fine lot of, 768
Amaryllis, the, 744
Amaryllis Colonel Burnaby, 708; cross-breeding of, 457; at Messrs. Veitch & Son's, 448
Amateurs' notes, 11, 43, 75, 114, 152, 216, 249, 511
America, cut Roses from, 516
American agricultural stations, 50, exhibition, 50, 321
American exhibitions, gardens of the, 477
Amherstia nobilis, 286
Amsterdam food exhibition, 647; horticultural exhibition, 147
Anæctochilus, the, 515; A. Landsbergiæ, 421
Andromeda floribunda, 177
Anemone bed fungus, 712; A. Fanninni, 644; A. hortensis (A. Stella), in variety, 327; meaning of, 619, 682; A. nemorosa, 543
Angræcum imbricatum, 15; A. sesquipedale, 178, 220
Annals of Botany, 809
Ant-catching Orchid, an (Eria stricta), 347
Ants in a tennis lawn, to destroy, 749
Antwerp, exhibition at, 774
Aphelandra chrysops, 736
Apiary, the, 10, 75, 144, 116, 249, 321, 389, 520, 583, 777
Aponogeton distachyon, 682
Apple bloom, the, 812; Golden Noble, 385; Josef von Brichy, 707; Mela Carla, 385; and Pear growing, 185
Apples, American, in England, 711; cheap storage for, 515; for market, 320; list of late keeping, 581
Aralia Chabrieri (Eleaodendron), 82
Arnold Arboretum, 251
Arran, tender plants in the island of, 325
Ashgrove, Orchids at, 742
Asia, Figs of, 710
Asparagus beds, 385; forcing, 54; giant, 644; plumosus var. nana, 617
Asplenium septentrionale (rare British plant), 22
Aster pyrenæus, 47
Asters, bouquet, and dwarf German, 185
Athyrium, new, 185
Aubrietia deltoides violacea, 650
Auricula, discussion on the, 736; origin of the, 612; origin of the edged, 678
Auriculas and Carnations, 290; double, 683; new alpine, 674; new, of the last decade, 703; outdoor, 141
Australian Acacias, 646
Azalea obtusa, 114
Azara microphylla, 55, 177

B

Baker, Mr. E. G.'s appointment to the British Museum, 581
Balsams, 323
Bambusa Okame Sasa, 710
Bassia longifolia, butter from, 358
Battersea Park, 742
Baxter, Mr., of Oxford Botanic Garden, 774
Bedding Violas, 777
Bee flowers, 11, 116, 153
Bees, flowers for, 389
Beetle-traps, Birkenhead's, 714
Begonia, tuberous, to increase, 428
Begonias, winter flowering, 384
Benefit scheme for gardeners, 356; a new, 393
Berberids, 609
Beverley, New Zealand, 384
Beyaz Dagh, 356
Bigeneric hybrid Orchids, 646
Billbergia vittata, 12
Birds of Herefordshire, 113
Birmingham and the Queen's visit, 453; Gardeners' Mutual Improvement Society, 215, 517
Boilers, hot-water improvements in, 454

Books Noticed:—
Agricultural Science, 252
Album Benary (Benary), 215
Album of Indian Ferns (Baynes), 354
American Florists' Company's Directory, 680
Ancient Cities of the New World (Désiré Charnay), 809
Annals of Botany (Balfour, Vines and Farlow, 809
Bee-keepers' Experience in the East (Blow), 550
Bees and Bee-keeping (Cheshire), 320
Birds of Herefordshire (Mrs. Bull), 113
Boletim da Sociedade Broteriana, 580
Botanical Magazine, 81, 252, 353, 479, 550, 774
Botanical Manipulation (Paul Girod), 486
British Orchids (A. D. Webster), 74
Bulletin, Kew, 548
Culture of Vegetables and Flowers (A. Sutton), 580
Designs for Flower-beds (Gale), 320
Dictionary of English Plant Names (Britten and Holland), 216
Egyptian Flora (Ascherson and Scheinfurth), 352
Elementary Text-book of British Fungi (W. D. Hay), 149
English Tobacco Culture (Beale), 318, 452
Familiar Trees (Boulger), 388
Fire Protection of Mansions (J. C. Merryweather), 680
Forestry in France (Major Bailey), 325
Flora of Leicestershire (Rev. W. H. Coleman), 148
Frost Report, Royal Horticultural Society (Henslow), 421, 517
Garden Calendar, the (T. W. Sanders), 389
Garden Oracle, 50
Gardens of Light and Shade, 680
Genera Plantarum, Index to (T. Durand), 551; Supplement to, 712
Geology of England and Wales (H. Woodward), 680
Handbuch der Pflanzen-Krankheiten, 51
Handbook of Practical Botany for the Botanical Laboratory and Private Student (Hillhouse), 324
Handbook of Vascular Cryptogamia (Baker), 581
Handy-book of the Flower Garden (Thomson), 580
Hour-Glass, the, 15
Icones Plantarum (Hooker), 147, 421
Iconography of Australian species of Acacia (Baron von Mueller), 252
Illustrations of the British Flora (Reeve & Co.), 774
Indian Fern Album (C. E. Baynes), 216
Industrial Ireland (R. Dennis), 279
Italia Œnologica, 252
Jardin, Le, 250, 354
Journal de Botanique, 251, 285
Kew Bulletin, 548
Labour on the Farm (J. C. Morton), 279
Life Histories of Plants (Professor D. McAlpine), 216
Lindenia, 355, 486, 646
Manual of Orchidaceous Plants cultivated under Glass in Great Britain (J. Veitch & Sons), 216, 258
Monograph of the Genus Crocus (G. Maw), 8
Murray's Magazine, 18
Kitchen Garden Calendar (Messer), 551
Natürlichen Pflanzenfamilien, die (Engler and Prantl), 354, 680
Notes of a Naturalist in South America (John Ball, F.R.S. M R.I.A., &c.), 775
Outlines of Classification and Special Morphology (Gœbel), 325
Orchid Album, 321, 352, 550
Playing at Botany (Phœbe Allen), 647
Proprietaire Planteur, &c. (D. Cannon), 279
Purdon's Irish Farmers and Gardeners' Almanac, 1887, 49
Reichenbachia, 320, 485
Reports on the Colonial Sections of the Colonial and Indian Exhibition (H. T. Wood), 614
Rosarian's Year Book, 48
Schedæ ad Floram Exciccatam Austro-Hungaricam (A. Kerner), 148
Studies in Microscopical Science, (Cole), 551
Tea Planters' Manual, the (T. C. Owen), 11
Through the Fields with Linnæus (F. Caddy), 711
Tithes, their History, Use, and Future (R. L. Everett), 149
Tobacco Growing, Curing, and Manufacturing (C. G. W. Lock), 216
Villa Gardening (E. Hobday), 647
Whitaker's Almanac, 1887, 18

Books, botanical, for beginner, 749
Border Carnations, 449
Botanic Garden, Cambridge, 318, 766; Edinburgh, 324; Geelong, 482; Glasgow, 324; King Williamstown, 388; Saharunpore, 11. (See Kew.)
Botanical Magazine and cotemporary publications, the history of, 345, 381, 451, 479, 514, 520, 641, 671, 767, 774; and Miller's *Gardeners' Dictionary*, 520, 554
Botany, economic, 358
Bougainvillea glabra, 552
Bouquets, floral, vagaries in, 582
Bournemouth, the past winter near, 71
Boussingault, the late Mr., 676
Bouvardia, the, 282
Bouvardias, 257
Box, diseased, 653
Bracken for game covert, 19
Brassavola Digbyana, 50
British Flora, illustrations of the, 774
British Guiana, primeval forest of, 573, 541, 637; plant, a rare, 22
Broccoli, 616: hardy, 650; a useful, Denning's, 777
Bromeliaceæ, Morren's, coloured drawings of, 710
Brugmansia suaveolens, 393
Buds on roots, 583
Bulb, disease, and artificial manure, 185, 257; garden, 247, 283, 482, 518, 615, 706; mite, 252, 639; cause and cure, 290, 392
Bulbs, 107
Bullfinches and fruit trees, 118, 220
Bull's nursery, 487
Burford, Orchids at, 742
Burridge fund, 251, 421, 486
Butter from Bassia longifolia, 358

C

Cabbage show and competition, 677
Calanthe discolor and C. Sieboldi, 554; C. Sieboldi, 455; C. Veitchii ×, 45, 83; and C. vestita, growing, 257; C. vestita, 15
Calanthes and their culture, 704
Calceolaria, the, 213, 802
Caltha palustris, 245
Calypso borealis, 455
Cambridge Botanic Garden, 318, 766
Camellia Dante, 581
Camellias, 176; at Chiswick House, 546; at Slough nurseries, 415; hardiness, 257
Campanula carpatica, 154; C. Van Houttei ×, 780
Camphor in Formosa, 741
Canadian plants, catalogue of, 148
Cannas, a bed of, 352
Cannell's nursery, 278
Cantor Lectures (Society of Arts), 147
Cape and Natal plants, 805; and New Holland plants, 745

* A. Henriquesii 7.4.732.

Caraguata Morreniana, 251
Carnation and Picotee, 616; wintering old plants of, 394
Carnation border, 449
Carnation-maggot, 22, 53
Carnation pink Malmaison, 838
Carnations, 176
Carnations and Auriculas, 290
Carolina, tar in, 741
Carpet bedding, designs for, 428
Carriage of fruit to London, 710
Carrots, 643
Carter & Co.'s Primulas, 286; special prizes, 50; warehouses, 316
Catasetum Bungerothii, 139
Caterpillar with fungus on it, 288
Cattleya Bluntii, 770
Cattleyas at Howick House, Preston, 383; white species and varieties, 428
Celosia pyramidalis coccinea, 323
Cemetery trees, 456
Certificates at South Kensington, 118
"Chambre Syndicale" of Ghent, 421, 551
Cheal's, Messrs., Pear trees at, 104; rockery at, 112
Cherries, classification of, 774
Chester, Fruit Conference at, 387
Chesterfield, the late Earl of, 147
Chinese water temple, 318
Chiswick, hardy trees and shrubs at, 770; the work done at, 806, 839; Horticultural Society's schedule, 355; House, Camellias at, 546
Chlorophytum elatum, 81
Christmas Roses, 54
Chrysanthemum Belle Pauline, 83; C. frutescens, 52; varieties of, 52; C. Gloire Rayonnante, 10; specimen plants, 394
Chrysanthemums, February flowering, 219; late Golden Gem and Géant de Valence, 519; single, 10, 153; the rival Ethels, 153
Cinder ash, 251
Cinerarias, 422, 578; huge, 423, 490; at Farnham Royal, 549
Cirrhopetalum Macraei, 18
City of London College, forestry lectures at the, 81
Clapton, Orchids at, 735
Clematis, the, 480
Clematis Jackmanni alba, sport from, 769
Clerodendron Balfourianum, 706: C. fallax, 108
Clivea, 580; and Imantophyllum, 50
Clibran & Son's nurseries, Messrs., 455
Climate and vegetation, 103
Clover and grass crops, 179
Cobœa seed, 617
Coca leaves and cocaine, 710
Cockscombs, 14
Cocoa-nuts, 50
Cœlogyne cristata, curious growth in a, 455
Coffee culture in Rio Janeiro, 710
Coleonema album, 517
Colocasia esculenta (Taro), plantation in China, 285; fungoid disease of, 388
Colonial fruit, 251; notes, 253, 482
Column for young gardeners, 325
Competition in Germany, 454
Conifers in boggy soils, 711; in growth, 772
Continental novelties, 584
Contrast and harmony, 77; a pleasing, 81
Coombe Warren, Kingston, 39
Corbularia, geographical distribution of, 208
Cordyceps Taylori, 288
Corea, Ginseng in the, 325
Cornish early Potato crop, 421
Corry, Soper, Fowler & Co.'s horticultural sundries, 281
Corypha (Livistona) australis, 676
Covent Garden Market, 116; prices, 713, 745, 777, 810; sales, and Messrs. J. W. Draper & Sons, 484; salesmen, 520
Cremona violins, 550
Crete, vegetable products in, 47
Crickets, beetles, and powder to destroy, 746
Crinum capense, 554, 649; C. vanillodorum, 148
Crocus iridiflorus, 520; C. parviflorus, home of, 356; the species of, 183
Crocuses, 482
Cross-bred Roses, 387
Crystal Palace, 710; shows, 388
Cucumis myriocampe, 18
Cultivated plants, origin and extinction of, 319
Cultural Memoranda, 13, 47, 73, 106, 154, 176, 213, 245, 278, 323, 422, 482, 552, 617, 706, 803
Cupressus Lawsoniana, Young's variety of, 176
Cure for Phylloxéra, a, 387
Currants, 543
Curtis, Sandford & Co.'s Rosery, Torquay, 43
Cyathea dealbata encircled by Panax arboreum, 713
Cycads, group of, at Chiswick, 16; Weevils destructive to, 13
Cyclamen, a crested, 619
Cyclamens, 73
Cypher's nursery, Orchids at, 448
Cypripedium auroreum, 178; C. Boxalli var. atrata, 210; C. callosum, 314, 383; C. elegans, 145; C. Gardneri, 383; hybrid, 419; Marshallianum, 512; C. politum ×, 764; C. venustum var. pardina, 382; C. vexillarium, 456

D

Daffodil Ard-righ, 247, 416; double, 324
Daffodils, Irish, 219; rotten and decayed, cause of, 650; small Moschatus varieties, 390; white trumpet, 490
Dahlia roots during winter, 115; show, Grand National, 18, 453
Daphne indica rubra, 185; D. neapolitana, 177
Daturas, 349
Davallia fumarioides, 79
Death of trees, 642
Dell, Egham, Orchids at the, 382
Dendrobium densiflorum, 422; D. Lowii, 801
Dendrobiums, seedling, 519
Dendrobium undulatum, 671
Deutzia gracilis, 290
Devonhurst, 423
Devon, weather in, 714
Dew, formation of, 215
Dianthus alpinus, 804
Diaxenes Taylori, 776
Dickson, Mr., presentation to, 774
Disa grandiflora, fertilisation of, 802
Dipladenias, 348
Dimorphotheca graminifolia, 679
Disease of Gardenia root, 488
Double Petunias, 384
Dracænas, 176, 245
Draught excluder, 516
Drawings, natural history, sale of at Amsterdam, 113
Dresden International Exhibition, 206, 581, 646; and the Phylloxera laws, 215
Dryas octopetala, 804
Deutzia gracilis, 278

E

Earth star, the, 810
Earthworms with bifid end, 256
Echeveria retusa, 176
Economical vegetable products, 647
Edinburgh Botanic Garden, 324
Egg-plant, 258
Egyptian flora, 252
Eichler, the late Professor, 454
Elæodendron Chabrieri (Aralia, hort.), 82
Eleutherine plicata, 745
Embankment Gardens, the, 215
Emigration, 114, 486
Engler, Professor, 741
Epipactis ovalis, 83
Eria stricta, an ant-catcher, 347
Espalier, an oblique, 356
Eucharis amazonica, 106, 117
Eucharis growing, 326; mite (see Bulb mite); potting, 391
Eulalias, 616
Euonymus fimbriatus, 392; E. japonicus and its variegation, 613; with golden shoots, 734
Euphorbia Jacquiniflora, 47
European Mail and the *Colonies and India*, 809
Evergreen planting, 423
Exeter Hyacinth show, 392

F

"Familiar Trees," 388
Fernando Noronha, botanical expedition to, 114
Fern reproduction, a curious fact in, 423
Fern-wall tile, Booty's, 288
Ferrous oxide and vegetation, 613
Ficus Benjamina. 732
Figs, 713; Indian, 421
Fir, Douglas, at Penrhyn Castle, 672; golden Scotch, 79
Firs, Lee, winter-garden at the, 579
Firewood, 219, 257
Flora of Egypt, 252; of Iceland, 289
Floral emblems, 746; novelties, 619; vagaries in bouquets, 582
Florists' flowers, 22, 43, 78, 115, 217, 287, 347, 546. 578, 616, 674, 744, 802
Flower garden, the, 19, 42, 82, 110, 142, 218, 248, 287, 316, 381, 450, 478, 513, 547, 578, 607, 642, 675, 739, 771, 841; pyramidal ornaments in the, 76
Flower-holders, new, 44
Flowers for the poor in East London, 581; in Paris, 764
Flowering shrubs, pruning of, 743; trees and shrubs, hardy, at Chiswick, 770
Footprints on a lawn after snow, why do they remain? 152, 185
Fordell Castle, 834
Foreign correspondence, 47
Forestry, 19, 51, 115, 211, 248, 355, 456, 489, 518, 614, 642, 743, 770; class at the City of London College, 81; school, advocated, 774; in the United States of America, 217
Forests, influence of, 314
Formosa, camphor in, 741
Freesia refracta alba and F. Leichtlini, 278
Fritillaria contorta, origin of, 706; Sewerzowii var. bicolor, 456
Frogs, green, 22
Frost and insects, 117. 148; and vegetation, 484; a wet, 458; report, the, 420; report, a, 649
Fruit-bloom at Gordon Castle, 422; buds and birds, 392; Colonial, 251; Conference, Chester, 387; crop, in Yorkshire, 682; crops, 713; English, and the auxiliary uses of sugar, 348; growing, profits and losses of, 146; in South Wilts, 812; prospects, 650; register, 15, 210, 478, 611, 707; tree buds and bullfinches, squirrels, &c., 327; trees against walls, watering, 553; and bullfinches, 118, 220; manuring, 247; show at Chester, 215
Fruits, tropical, in the Museum, Kew, 445
Fruits under glass, 22, 44, 78, 111, 152, 175, 212, 254, 287, 322, 350, 392, 454, 489, 518, 578, 610, 648, 675, 707, 739, 771, 841
Fuchsias, some good, 155
Fumigator, a cheap, 83
Fungoid disease of Colocasia esculenta, 388
Fungus on caterpillars, 288

G

Galeandra Baueri, 178
Game preserves, renovating, 211
Garaway's nursery, Hyacinths at, 453
Gardenia, diseased root of, 488
Gardenias. 47; on a wall, 584
Gardener, a grand old (Jas. Kelway), 379, 416
Gardeners, benefit scheme for, 356; benefit society, 490, 618; a proposed, for Aberdeenshire, 182; societies, 618
Gardeners' education, 148, 252
Gardeners, more, than gardens, 490, 553, 585, 618; mortality of, 580
Gardeners' Orphan Home, 251
Gardeners' Orphanage, 219, 257, 285, 325, 355, 386
Gardeners' Orphan Fund, 420, 453, 458, 516, 582, 644, 677, 708, 797, 837
Gardeners' Royal Benevolent Institution, 112; Falconer, Susannah, 453, 486, 773, 838; Jubilee Fund, 584, 613; and the Jubilee, 553, 519; self-help society, 582, 714
Gardening for the little ones, 385
Gas-lime, how to use, 11
Geert, Auguste Van, 355
Geaster coliformis, 810
Genera Plantarum Supplement to, 712
General Hailstorm Insurance Society, 113
Genetic affinities of Algæ, 421
Genista, 176
Gentians, 550
Geographical distribution of Corbularia, 208
Gerardias, the, 457
Gesnera cinnabarina, 178
Ghent "Chambre Syndicale" of, 677, 838; great sale at, 485
Ginger-beer plant, the, 148
Ginseng in the Corea, 325
Gladioli, 450
Gladiolus, the, 287, 418, 744
Gladiolus gandavensis, hybrids of, 618
Glasgow Botanic Garden, 324, 388, 550; International Exhibition, 740
Glasnevin in winter, 15; the season at, 323
Gloxinias, 617
Golden Scotch Fir, 79
Gooseberry borer, 744
Gooseberries, 76
Gordon Castle, fruit bloom at, 422
Grafting fruit trees, 450; Holly and Rhododendrons, 155
Grand old gardener, a (James Kelway), 379, 416
Grape berry, a large, 22; Early Gamay, 707
Grapes in the open air, 207, 512, 554; outdoor, 256, 398; shanking in, 548, 780
Grape Verdelho, 459; white Gros Colmar, 254
Grass and Clover crops, 179
Gray, Dr. Asa, 774, 836
Greig, General, 454
Grevillea robusta, 384; &c., from seed, 393
Guayaquil, Cinchona bark in, 741
Guildford Castle, 510
Gunnersbury Park, Orchids at, 742
Gustavia gracillima, 115
Gymnema sylvestre, paralysis of the sense of taste by, 550

H

Hagley Hall, 731
Halesias, the, 392
Hamamelis arborea, 213
Hardy fruit garden, the, 14, 45, 74, 115, 144, 184, 218, 256, 322, 351, 450, 490, 517, 552, 579, 614, 681, 707, 739, 779, 816, 841; plants, lists of seeds of, 421
Harmony and contrast, 77
Harrison & Sons, Leicester, 350
Hart, Mr. J. H., 18

Heaths, 19, 44; for the open air, 459; winter-flowering, 47
Heaton House, Phalænopsis at, 422
Hedge plant, Lawson's Cypress as a, 770
Hedges, Myrobella, 457
Hedychium Gardnerianum, 256
Helianthus algarvensis, 421
Helionopsis umbellata, 711
Heliophila scandens, 252
Hellebores at Kew, 453
Helleborus niger, 106
Henderson, E. G., & Son's nursery, 10
Herbaceous border, 55, 141, 249, 282
Herefordshire, birds of, 113
Heatherbank, Weybridge Heath, the season at, 584
Hildenbrantia rivularis: a new British Alga, 839
Hillebrandia sandwichensis, 804
Hindlip Hall, 475
Holly and Rhododendron, grafting of, 155
Hollyhocks, the, 802
Homeria elegans, 679
Honey, summer drinks from, 682
Honours to horticulturists, 113, 183
Hooper's nursery, 245
Hoop Petticoats, 277
Horticultural Club, the, 49, 182, 386; exhibitions, 83, 118; nomenclature, 740; show, Paris, 733; sundries, 281
Hot-water pipes, noxious paint on, 155
House decoration, 173
Howick House, Preston, Cattleyas at, 383
Hoya bella, 552
Hull and East Riding Chrysanthemum Society, 710
Huntingdon Willow, 648
Hyacinths at Garaway's nursery, 453
Hyacinth exhibition, Reading, 647
Hyacinths rotting, 428; sale of drawings of, at Amsterdam, 186
Hyacinth show, Exeter, 392
Hyacinthus candicans, 51
Hybrid, a new bigeneric, 45; Cypripedium, 419; Narcissus, 390
Hypericum chinense, 704
Hypnum vulgare, carpets manufactured from, 710

I

Ice, storing in stack, 54
Iceland, flora of, 289; plants and products of, 246
Icones Plantarum, Hooker's, 421
Ilang Ilang, 428
Ilex insignis, 79
Ilex nobilis or I. insignis, hardiness of, 177
Illustration Horticole, 387
Imantophyllum and Clivea, 50
Imperial Institute, 613
India, 11, 77; economical condition of, 251; Figs, 421; Orchids, 279, 449, 736; Primulas, 777
Indo-Colonial Exhibition, the surplus, 387
Insect powder, 389
Insects and frost, 117, 148
Intercultural tillage, 708
Ireland, 15, 54, 291, 323; a dry time in, 646
Iris Biliotti, 738; I. germanica, 210; I. g. Siwas, 739; I. lineata, 679; I. lupina, 738; I. pumila, 770; I. reticulata, 74; I. Rosenbachi, 390; the Florentine, 316
Irises, some new, 611, 672, 738
Irish garden, an, 605; insect, a remarkable, 643

J

Jambul seeds, 454
Journal of Botany, 113
Jubilee bouquet, the, 836; memorial, 215; proposals, 147, 182, 386; scheme, florists, 250
Jubilee, the, 185, 219, 257; trees, 326

K

Kalanchoe carnea, 211
Kauri resin, 150
Kelway, Jas. (A Grand Old Gardener), 579
Kennedya Marryatæ, 109
Keteleeria Fortunei, male catkins of, 710
Kew, 612, 147, 352; hardy fernery at, 677; Hellebores at, 453; museums, new exhibits in the, 351; notes, 706, 801, 804; plants in flower at, 679; on the rockery, 706; Orchids at, 283; in flower at, 455; tropical fruits in the Museum, 445
Kickx, Jean Jaques, 453
King, Mr. G., presentation to, 647
Kimberley, 805
Kitchen garden calendar, a (by Messer), 551
Kitchen garden, low growing crops in the, 22
Kitchen garden, the, 55, 111, 154, 179, 213, 258, 385, 419, 456, 483, 546, 612, 615, 683, 707, 739, 779, 805
Kölreuteria paniculata, 177

L

Lace-wing fly, 459
Lælia anceps alba, 484
Lælia anceps at home, 413; and its varieties, 280; Dawsoni, 114, 424; Hilliana, 83, 424; new white varieties of, 43, 75, 114; vars., 152; var. Williamsi, 114, 349
Landolphia florida, 804
Lapagerias, 519, 803
Larix Griffithii, 551

Law Notes:—
Campbell *v.* Caledonian Railway Co., 652, 779
Jacob & Co. *v.* Mansfield (Lily of the Valley), 287
Lewisham Overseers *v.* H. J. Cobb (Rating), 523
Little & Ballantyne *v.* The International Exhibition Association of Edinburgh, 423
Mackenzie *v.* British and New Zealand Mortgage Co. (selling Rape seed for Swede), 677
Purser *v.* The Worthing Local Board (Rating case), 422; appeal, 676
Rogers *v.* Coombes, 394

Lawson's Cypress as a hedge plant, 770
Leaf-twisting of Narcissus, 454
Leeks, 116
Lilium auratum, 290
Liliums, potting, 392
Lily of the Valley, 246; roots (see Law)
Lime juice, 714
Lindley Library, the, 548
Linnean Herbarium, 741; Society, 419, 773; elected foreign members of, 646
Lissochilus Krebsii, 801
Littonia modesta, var. Keithii, 53
Liverpool Exhibition, 420
Livistona (Corypha) australis, 676; L. australis, 777; L. Mariæ, 734
Lobelia Cavanillesi, 584; L. littoralis, 804
Lock, Mr., presentation at Crediton, 148
London Parks, 251
London-Park management, 286
Longicorn beetle, attacking Orchids, 776
Luculia gratissima, 117, 186; from seed, 152
Luffa, the, 384

M

Madeira, 646
Madresfield Court, Malvern, Vine-growing at, 20
Magnolia acuminata, 216; Campbelli, 648; conspicua, 620
Maidenhair Fern, 422
Maize products, 216
Malden, Mr. J. W., 646
Manchester Botanical and Horticultural Society's Gardens, 838; Horticultural Improvement Society, 387; Jubilee Exhibition, 326
Manipur, 215
Manure, artificial, and bulb disease, 185
Manures for Vines and Peaches, 186
Manuring fruit trees, 247
Masdevallia muscosa a sensitive plant, 836; M. velifera, 744
Maréchal Niel Rose, copper-coloured, 395
Marie Louise Violets, 414
Market plants, 52, 76
Mauritius, 253
Maximiliana regia, 215, 281
Maxillaria picta, 145; M. porphyrostele, 383
May-bug in Denmark, 738
May, the month of, 701
May's nursery, Edmonton, 680
Mered, 75
Medicine plant, a new, 18
Melon, Bailey's green-flesh, 581
Mentha arvensis, 682
Metropolitan Public Gardens Association, 18
Mignonette, 482
Mildew on papers, 290
Miller, Phillip, 451
Miller's *Dictionary*, 619
Milton's cottage in Bucks, 509
Mimulus Jubilee, 811
Mina lobata, 153
Mistleto, 714
Money telegrams, 550
Monte Carlo, 583
Moore, the late Mr. T., 48, 81, 86
Moore Memorial Fund, 147, 182, 251
Mormodes platychila, 178
Morren, library of the late Professor, 646
Mount Bellenden-Ker, 544
Mushroom, the St. Georges' (Agaricus gambosus), 545
Muckross Abbey, 763
Myriocarpa stipitata, 257
Myrsiphyllum, 640

N

Nægeli, Professor C. von, 647
Nanodes Medusæ, 801
Narcissus Bulbocodium var. monophylla, 277
Narcissus Committee, 250, 355, 587; N. cyclamineus, 184; N. Glory of Leyden, 704; N. hybrid, 390; N. incomparabilis semipartitus, 714; leaf-twisting of, 454; N. Leda, 833; legend of, 290; N. Little Nell, 552; N. minimus, 117; N. Pseudo-Narcissus var. Johnstoni, 288; N. reflexus, 640; N. triandrus var. pulchellus, blighted, 490
Narcissi, rare, 286
Natal, Aloes in, 612; horticulture in, 516; to the Transvaal, 610, 766
National Auricula and Primula Society (Southern section), 285
National Chrysanthemum Society, 251; general meeting, 354
National colours in flowers, 837
National Footpath Preservation Society, 148
National Primula, Carnation, and Picotee Society, 81
Nectarine and Peach trees, a dressing for, 185; as wall trees, 78, 110
Nematoid worms, 519; disease of roots caused by, 488
Nephthytis liberica, 81
Nettles, stinging, 385
New Aroid, a, 642
Newcastle Jubilee Exhibition, horticulture at the, 706
New York Agricultural Experimental Station, 355, 517
New Zealand, 384; Tree Ferns of, 713; Veronicas, 778
Nicotiana affinis, 213; N. glauca, 671
Normal School of Science and Royal School of Mines, 113
Notice to leave service, 395
Novelties of 1886, 14, 42
Nursery, E. G. Henderson & Son's, 10; Laing, J., & Co.'s, 607; Smith & Co.'s, Messrs., Worcester, 415; work, 456
Nurseries, rating of, 421, 741; meeting about, 809
Nurseryman, a, as a magistrate, 51

O

Oakley Court, near Windsor, 107; Fallowfield, Orchids at, 455
Oak bark, prices of, 770
Oak tree, old, Aberdeen, 451
Oakwood, flowers at, 519

Obituary:—
Birch, W., 359
Candolle, Madame De, 517
Dhanis, Madame le Grelle, 291
Dixon, E. P., 87
Eichler, Professor, 353
Frost, Philip, 649
Jackman, George, 748
Jenkins, H. M., 24
Kinghorn, F. R., 817
McElroy, J. F., 87
McHutcheon, John, 458
McIntyre, Archibald, 779
Moore, T., 48
Stevens, Mrs. G., 223
Vair, James, 327
West, J. F., 187
Wilder, Marshall P., 24, 86
Wootten-Wootten, W., 155

Odontoglossum crispum, large spike of, 382; O. crispum Veitchianum, 798; O. pulchellum, 23; O. vexillarium, 23
Oncidium auriferum, 801; O. Brunleesianum, 672
Onion seed, bad germination of, 714
Onion, the, 22
Orange trees in pots, 480
Orchard house, 424; trees, cleaning, 53; renovating old, 74
Orchid, bigeneric hybrids, 646; collecting, 811
Orchid houses, the, 23, 82, 154, 221, 313, 385, 418, 489, 553, 648, 748, 840
Orchid notes and gleanings, 15, 45, 79, 107, 145, 178, 217, 256, 283, 317, 419, 455, 491, 545, 577, 670, 769, 801, 834; sale at Downside, 613
Orchids, British, 74; Cape terrestrial, 483; hardy American, 682; fertilisation and adaptation of means to end, 769; conditions under which they grow naturally, 178; Indian, 279, 449, 736; manners and customs of, 50; at Ash Grove, 742; Backhouse's, 419; Bocking Place, Braintree, 317; Mr. Bull's, 50, 607; Burford, 742; Clapton, 347, 735; Cypher's nursery, 448; "Dell," the, 382; Fernside, Bickley, 419; Gunnersbury Park, 578, 742; Howick House, Preston, 79; Kew, 283; Lythe Hill, Haslemere, 212; Philbrick's, Mr., 283; Pickering Lodge, 419; Sander's, 245; Tautz's, Mr., 143, 577; Veitch's, 286; Williams', 646, 678; "Wild West," 676; Woodhatch, 801
Orchidaceous Plants, Veitch's *Manual of*, 258
Orobanches and Pedicularis, 109
Orphanage, the proposed Gardeners', 386
Orphan Fund, Gardeners', 420, 453, 458, 585
Our jubilee, 16
Oxalis braziliensis, 804, 809
Oxalis, leafstalks of, 18
Oxford Carnation and Picotee Union, 285
Oxlips from Cork, 650

P

Paint on hot-water pipes, noxious, 155
Painter, Mr. R., 741
Palm, a new, 50; the Cocorite, 281
Palms, an avenue of, 586
Panax arboreum embracing Cyathea dealbata, 713
Panicum variegatum, 482
Pancratiums and Hymenocallis, 392
Pandanus Veitchii, 176, 253
Pansies, 640; new vars., 741
Parallel, a, 50
Paralysis of the sense of taste by Gymnema sylvestre, 550
Parasitical plants, 256
Paris, 733; flowers in, 764
Paris green for Apple worms, 774
Parrot Tulips, 74
Pastures, 148
Peach and Nectarine as wall trees, 78, 110
Peach and Nectarine trees, a dressing for, 185
Peach Surpasse Bon Ouvrier, 210
Peaches and Vines, manures for, 186
Pear and Apple growing, 185
Pear Beurré Roland, 385; blight, 8; Van Mons; Leon le Clerc, 385; trees at Messrs. Cheal's, 104; upright cordon, 104
Pears, a list of 100 varieties, 20, 84, 150, 218, 322; and Plums in pots, 326; Mr. Rivers' lecture on, 52
Peas, early, 74, 153
Peat as a paper fibre, 749
Pedicularis and Orobanche, 109
Pelargonium Henri Jacoby, 554, 584; leaves, black spots on, 83
Pelargoniums, new and choice zonal, 744
Penrhyn Castle, Douglas Fir at, 672
Pergularia odoratissima, 47
Petunias, double, 384
Peziza tuberosa, 712
Phaius grandifolius, 217, 384; Humbloti, 45
Phalænopsis, at Heaton House, 422; P. sumatrana, 801; P. Mariæ, 834; a new, 677
Phaseolus Caracalla, 21, 118
Phœnix rupicola, 486
Photinia serrulata, 54
Phlox amœna and P. Nelsoni, 770; the, 423
Phloxes, alpine dwarf, 618; herbaceous, 519
Phylloxera, the, 320, 388, 580; a cure for, 387; laws, the, 215, 774, 836
Physiological varieties, 113
Phytobiological observations, 285
Picotee, origin of the word, 43; derivation of the word, 83, 117, 152; the yellow, 546
Pinus koraiensis variegata, 710; P. parviflora, 804, 839
Planera aquatica, 392
Planting evergreens, 423; evils of thick, 456
Plant diseases, investigation of, U.S.A., 774

Plant Portraits:—
Æchmea Hökelii, 774
Angræcum Scottianum, 8
Amasonia calycina, 82
Anæctochilus Lansbergiæ, 384, 421
Aristolochia ridicula, 774
Billbergia decora, 774
Catasetum tridentatum, 249
Cattleya Mossiæ. var. M. Pirot, 154; C. Trianæ Hooleyana, 249
Campanula isophylla, 249
Chrysanthemum rubro - striatum, 154; C. Traviata, 154
Cypripedium Sallieri, 646; C. Schroderianum, 154
Dendrobium thyrsiflorum, 8
Disporum Leschenaultianum, 774
Galeandra Baueri, 249
Hedychium Gardnerianum, 81
Helianthemum algarvense, 421
Iris aurea, 249
Lælia elegans var. Houtteana, 249
Miltonia Clowesii, 384
Nepenthes Mastersiana×, 249
Nymphæa flava, 82
Oncidium Brauni, 8; O. cucullatum, 646; O. Jonesianum, 249; O. prætextum, 154
Odontoglossum Alexandræ var. Cutseniana, 249; O. Schillerianum, 646
Phalænopsis rosea, 249
Picea omorica, 154
Pleurothallis insignis, 774; Primula capitata, 82; P. erosa, 82
Rhododendron Victorianum×, 304
Saccolabium giganteum var. illustris, 646
Schizocasia? Regnieri, 421
Solanum Wendlandi, 82
Sophronitis grandiflora (militaris), 154
Thrixspermum unguiculatum, 249
Tulipa linifolia, 8
Xanthorrhæa Preissii, 774
Zauschneria californica, 249

Plants, New, or Noteworthy, Described:—
Æchmea flexuosa, 8; Æ. mexicana, 8
Ærides mitratum, 834
Agave Henriquesi, 732; A. Morrisii, 543
Alocasia eminens, 105
Alsophila atrovirens, 639
Angræcum avicularium, 40
Anthurium brevilobum, 380; A. purpureum, 575
Aristea platycaulis, 732
Aristolochia hians, 40
Asphodelus comosus, 799
Asplenium scandens, 639
Begonia egregia, 346
Catasetum costatum, 72
Cattleya Dukeana, 576; C.× Harrisii, 104; C. (Trianæ) Schrœderæ, 512; C.× Sororia, 40
Cœlogyne Foerstermanni, 798; C. Sanderiana, 764; C. Hookeriana brachyglossa, 833
Crinum longifolium Farinianum, 833
Cypripedium almum×, 512; C. amandum, 174; C.× doliare, 447; C.× lineolare, 447; C. obscurum, 8; C. plunerum, 40
Davallia ferruginea, 639
Dendrobium chlorostele×, 477; D. chrysodiscus, 414; D. Fytchianum var. rosea, 209; D. melanodiscus, 414; D. polyphlebium, 702; D.× Schneiderianum, 209; D. strebloceras, 140; D. sulcatum var. polyantha, 607; D. ×Vannerianum, 72
Epidendrum Stamfordianum Wallacei, 543
Fritillaria armena var. fusco-lutea, 639
Galanthus nivalis sub-sp. caucasicus, 313
Galeandra flaveola, 512
Lachenalia aureo× reflexa, 576
Lælia anceps Sanderiana, 104; L. a. Schrœderæ, 72; L. a. Stella, 312; L. elegans Measuresiana, 209; L. purpurata Lowiana, 799
Masdevallia pusiola, 140; M. Wendlandiana, 174
Maxillaria tenuifolia, 702
Narcissus Bulbocodium × Pseudo-Narcissus, 414
Nephrolepis rufescens, 476
Nephthytis picturata, 476
Odontoglossum crispum var. hyperxanthum, 477; O.+ hinnus, 606; O.+ histrionicum, 512; O. Pescatorei leucoxanthum, 606; O. retusum, 380; O. rhyncanthum×, 380; O. Rossii Smeeanum, 799; O.× Staurastrum, 313; O. Williamsianum, 278
Oncidium (cyrtochilum) lucescens, 799
Ornithidium ochraceum, 209
Oxalis catharinensis, 140
Panax fruticosum var. multifida, 544
Phaius× Sedenianus, 174
Phalænopsis alcicornis×, 799; P. Foerstermanni, 244; P. Rothschildiana, 606
Pleurothallis insignis, 477
Pogogyne nudiuscula, 447
Polemonium cœruleum, 766
Primula blattariformis, 575; P. vinciflora, 575
Restrepia pandurata, 244
Rhododendron Lochæ, 543
Saccolabium Pechei, 447
Sarcochilus Hartmanni, 346
Schomburgkia marginata var. immarginata, 447.
Scuticaria Hadweni, 733
Spathoglottis Regnieri, 174
Sphenogyne speciosa, 670
Strophanthus Ledieni, 447
Thrixspermum Hartmani, 346
Tillandsia reticulata, 140; T. vestita, 670
Tritoma caulescens, 447
Urginea macrocentra, 702
Ursinia pulchra, 670
Vanda Amesiana, 764
Zygocolax Veitchii×, 765

Plants and their culture, 10, 46, 82, 115, 145, 184, 212, 253, 280, 321, 350, 391, 415, 454, 487, 553, 579, 643, 675, 707, 748, 771, 805, 835; hardwood greenhouse, 415; of variable vigour, 393; Spanish, 18; variation in, 46, 705; wonderful, 311, 423
Plowright, Mr. C., 113
Plumbago capensis, 552
Plums and Pears in pots, 326; late, 15
Pogonia Fordii, 670
Poinsettia pulcherrima, 76
Poinsettias, 74
Poisonous plants, books on, 459
Polemonium, 483, 800
Polyanthuses, gold-laced, 578, 778
Polygonum Bistorta, 320
Pomegranate, the, 22
Ponthieva maculata, 419
Portland cement for repair of woodwork, 393
Post-office, Mr. Sutton's evidence on Sunday labour in the, 838
Potato at rest, 250; hybrid, a, 110; Chancellor, 519; crop, Cornish, early, 421; 1886, 778; culture, 679, 736, 775, 812, 835; deterioration of the, 290
Potatos, 746; deterioration of, 326, 357; for exhibition, 395; heavy crops of, 54
Pots, Plums and Pears in, 326
Pot Roses, 278
Powder to destroy beetles, &c., a, 746
Prices of Oak bark, 770
Primroses, purple, white, and yellow, 176
Primula altaica, 119; P. Auricula, 584; P. imperialis, 285, 811; P. japonica, 804; P. longibarda, 584; P. reticulata, 777, 803; P. Rusbyi, 519; P. sinensis, 18; at Sutton & Sons', 78; from Swanley, 113; P. Stuarti, 152; P. Venzoi ×, 320
Primulas, 449; Chinese, 391; hardy, 714; hybrid, 677; Indian, 777; rotting at the collar, 155; at Carter, J., & Co.'s, 286; Farnham Royal, 347; Owen's nurseries, Maidenhead, 347
Prizes offered by Wood & Son, 182
Produits Végétaux Exotiques, 148
Prolified Rose, 780
Propagator, 257
Pruning forest trees, 770; tools used in, 743
Prunus Pissardi, 416
Pseudo-Tsuga Douglasii at Penrhyn Castle, 672
Pyramidal ornaments in the flower garden, 76

Q

Queen, a bouquet for the, 809
Queen's Jubilee, 112

R

Rainfall and sugar, 51
Ramie, cultivation of, in Spain, 767
Rampion, its culture and use, 149
Raspberries, autumn bearing, 706
Rating, 676; deductions, 650; nurseries, 621; of nurseries, 421, 741. (See Law Notes.)
Red-spider on Vines, 649, 745
Reichenbach, Professor, 647
Resurrection plant, 749
Revue Agricole, 421
Rhododendron Campbelliæ, 451, 554, 585; R. caucasicum album, 459; R. Mrs. Isaac Davies, 833; R. Victorianum ×, 387
Rhododendrons and novelties at Knap Hill, 809; greenhouse varieties, 50
Ribes floridum, 178
Richardia æthiopica, 422
Riviera, earthquake on, 486
Roads Improvement Association, 50
Rock Garden, 52, 478
Rockery at Messrs. Cheal's, 112
Romulea Macowani, 184
Root-pruning, 18
Roots, buds on, 583: from the perisperm of Cycas, 355
Rose, American Beauty, 639; Earl Dufferin, 838: House, the, 800; Maréchal Niel, 106; a fine, 800; Society, the National, 18
Rose, prolified, 780
Rosen Zeitung, 421
Rosery, 416; Curtis, Sandford & Co.'s, Torquay, 43
Roses, 12, 106, 215, 578, 583; a classification of exhibition, 209, 247; a forecast, 669; and the winter, 480; comparative hardiness of Tea and hybrid perpetuals, 670; cross-bred, 356, 387; cut, from America, 516; forcing, 348; new, 702, 745, 810, 838, 839; planted out, treatment of, 554; standard, 153, 256
Royal Botanical and Horticultural Society of Manchester, 113
Royal Horticultural Society, 117, 147, 256, 320, 352, 387, 580, 647, 740; and the Imperial Institute, 580; and the Queen, 580; annual report, 180; committees of, for 1887, 24, 46, 746; decisions of, 153; meetings, 214; schedule, 519
Royal Society, 613
Royal trees, 423
Royal Tuscan Horticultural Society, 113
Ruellia affinis, 17, 145; R. Herbstii, 44
Rural economy, 453
Ruscus aculeatus, a new form of, 741
Russia, Tobacco in, 741

S

Saccolabium bellinum, 145
Saffron, 40
Sale prices, 650
Salvia patens, 154; S. rutilans, 83
Salvias, 313, 706
Sander's, Messrs., nursery, 776; Orchids, 245
Saxifraga media var. Friderici Augusti, 47
Saxifrage, a hybrid, 774
Saxifrages, Himalayan, 72
Scarlet fever, 388
Schizanthus as greenhouse specimens, 809
Schomburgkia tibicinis, 735, 801
School of Horticulture at Vilvorde, 580
Schizocasia (?) Regnieri, 421
Sciadopitys verticillata, 520
Science and art, 556

Scientific Committee:—
Abies grandis, 84
Araucaria leaves attacked by Rhizococcus araucariæ, 84
Arisæma triphyllum, 683
Azalea sport, 555
Beetle, Longicorn, 683
Begonia hispida, 683; B. sp., 585
Bulbocodium hybrid (supposed), 554
Calceolaria, monstrous, 715, 840
Cattleya intermedia var. monstrosa, 585
Cattleyas, malformed, 554
Chionodoxa sp., 554
Clerodendron floribundum, 585

Clivia nobilis, 585
Cocci, Orchid leaves attacked by, 84
Corbularia Graelsi, 585
Crocus leaves, distorted, 683
Crocuses, 554
Cymbidium tigrinum, 683
Cypripedium arietinum, 715
Daffodils, hybrid, 683
Dendrobium polyphlebium, 840
Deutzia gracilis, arrested growth of petals, 585
Disease of Ixia corms, 84
Diseases of plants, 683
Dracunculus creticus, 683
Endophyllum sempervivi, 683
Epidendrum cochleatum, 424
Eucalyptus, photographs of, 840
Euonymus vars., 683
Fern, buds on roots of, 425
Fritillaria armena, 554
Frost report, the, 425
Gymnosporangium, Juniperus malformed by, 358
Helipterum (Astelma) eximium, 714
Heterosporum ornithogali, 840
Hyacinths. malformed, 555
Ixia corms, diseased, 84
Juniperus malformed by Gymnosporangium, 358
Kief, 554
Larch disease, 683
Leucoium tricophyllum, 683
Malope malacoides, 84
Morocco, economic products of, 425
Myriocarpus stipitata, 585
Narcissus, alleged hybrid, 425
Narcissus bulbs diseased, 840
Narcissus Bulbocodium var. nivalis and N. triandrus, a hybrid between, 358
Narcissus incomparabilis hyb., 585
Narcissus notes, 425
Narcissus panizzianus, 84
Narcissus Pseudo-Narcissus × triandrus (?), 585
Narcissi from Portugal, 358
Narcissi, 354
Narcissi, Portuguese, notes on, by Mr. A. Tait, 555
Orchid leaves attacked by Cocci, 84
Osmanthus ilicifolius, 846
Peas, outgrowths on roots of, 840
Peristeria, 714; P. cerina, 683; P. guttata, 683
Pine, Japanese, dwarfed, 424
Pleurothallis, proliferous, 84
Podisoma Sabinæ, 683
Pollen, chemical analysis of, 358
Primrose, white var., 554
Primrose with foliaceous sepals, 585
Primula, hybrid, 554; monstrous, 715
Primula species ?, 554
Primula Stuartii var. purpurea, 585
Psilotum triquetrum, 840
Radulum, 554
Ranunculus cortusæfolius, 715
Rhizococcus araucariæ on Araucaria leaves, 84
Rhubarb, hybrid, 554
Richardia æthiopica, 424
Rose cuttings, hypertrophied, 554
Saccolabium cœleste, Longicorn beetle in, 683
Sarracenia hybrid, 585
Sisyrinchium filifolium, 683
Spathoglottis Kimballiana, diseased, 358
Spathoglottis leaves, 424
Stachys affinis, 585
Tulipa lanosa, Regel (?), 585
Tulip bulb, abnormal, 683
Ustilago on Dates, 358; on Figs, 84, 358
Vines, with barren flowers, 840
Wheat, carbonised prehistoric, 84
Xiphion Tingitanum, 425

Scilla bifolia, 106
Scilly Isles, the, 452
Scorpions, do they commit suicide?, 387
Scortechini, Father, 18
Scotch crofters, help for, 774
Scotland, 23, 221, 521, 685, 743, 839; University extension in, 182
Scottish Arboricultural Society, 387; competition essay list, 23; Meteorological Society, *Journal* of the, 148
Seakale, 616
Seed orders, early, 83
Seed, selling Rape for Onion, 677; testing apparatus, the Geneva, 314; trade, 179, 768, 643; bad germination of, 682; from the tropics, transmission of, 21; late vegetating, 745; of hardy plants, lists of, 421
Seine, horticultural society for, 710
Self-help schemes, 682; Society, 618
Selaginellas, 643
Senecio elegans pomponicus, 584; S. grandifolius, 113
Shanking in Grapes, 548
Siberian products, exhibition of, 838
Skimmia japonica, 519
Slag sand as manure, 778
Slugs in Orchid-house, how to trap, 457
Smet, Mr. L. de, memoir of, 491
Smith & Co.'s nursery, 415
Snow and Roses, 416
Snow, effects of, on plantations of Scotch Fir, 550
Snowdrops and Daffodils, 390
Snowstorm, the, 7; effects of the late, 54

Societies :—
Bath and West of England Agricultural, 747
Bath Floral Fête, 651
Crystal Palace, 458, 716
Dresden International, 715
Dumfries Horticultural Improvement Association, 81
Edinburgh Botanical, 119, 390, 555, 685, 743, 839
Horticultural Club, 82
Hull and East Riding Chrysanthemum, 154
Leek Auricula, 620
Linnean, 221
Manchester Botanical and Horticultural, 746
Manchester Horticultural Improvement Association, 113
Narcissus Committee, 424, 651
National Auricula (Southern Section), 586
National Chrysanthemum, 55, 86, 186
National Tulip, 778
Natural History, of Aberdeen, 23
North of Scotland, 744
Portsmouth Chrysanthemum, 113
Preston and Fulwood, 426, 717
Reading, 778
Royal Botanic, 426, 555, 684, 813
Royal Botanical of Manchester, 186
Royal Caledonian Horticultural, 521
Royal Horticultural, 84, 222, 358, 424, 522, 554, 585, 650, 683, 714, 812
Royal Horticultural of Aberdeen, 427, 744
Scottish Horticultural Association, 51, 119, 427, 522
Scottish Primula and Auricula, 619
Torquay Horticultural, 491
York Gala, 814

Society, Manchester Horticultural Improvement, 387; Royal Oxfordshire, 387
Soldanellas, 55
Southampton Horticultural Society, 286
Spain, cultivation of Ramie in, 767
Spanish plants, 18
Speed, the late Mr. T., 517
Specimen Chrysanthemums, 394
Spider silk, 47
Spiræa japonica, 213
Spiræas, shrubby and herbaceous, 551
Spray-pumps, 108
Spring, first signs of, 291
Spring flowers, 453; at Mr. B. S. Williams' nursery, 448
Stachys affinis as a new vegetable, 550
Stimuli in vegetable tissues, 147
Stinging Nettles, 385
Storm, the late, 153
Straw, a house of, 147
Strawberry plants, treatment of, after fruiting, 326; cultivation in pots at Mereworth Castle, 616; King of the Earlies, 611; Auguste Nicaise, 746; for pot culture, 707
Strawberries at Twickenham, 802
Streptocarpus Dunnii, 804
Strophanthus seeds, 252
Stylidium, new species of, 320
Sub-tropical plants in small gardens, 556
Sugar and rainfall, 51
Sunshine, 320
Superphosphate of lime on limestone soils and as a pest destroyer, 839
Sussex Association for the Improvement of Agriculture, 581
Sutton & Sons', Primulas at, 78
Swanley, notes from, 278

T

Taber & Cullen, Messrs, 644,
Tacsonias, 706
Tapeinanthus humilis, 53
Taro plantation in China, 285
Taste, paralysis of the sense of, by Gymnema sylvestre, 550
Tea-planters, book for, 11
Tecoma Ricasoliana, 215
Telegraph poles, 54
Tendrils, 388
Texas, climate and cultivation of, 705
Thanatophore, 713; Williams', 152
Things in general, 80
Thlaspi virens, 117
Thunia Bensonæ, 801
Thyrsacanthus rutilans, 254
Tillage, intercultural, 708
Tillandsia bulbosa, 256
Timber trade, the, 115
Tithe agitation, 251; meeting at Rochester, 113
Tithes, 185
Tit, the blue, a carnivorous bird, 83
Tobacco, book on growing, curing, and manufacturing, 216
Tobacco culture, 245, 354, 486; and the Potato fungus, 50; cost of per acre, 452; in Russia, 486, 741; early varieties of, 81; English, 517; growing, 250; parasitic fungi on, 490
Tomato disease, 459
Tomatos, diseased, 653
Tonquin Beans, 320
Toxicophlæa Thunbergii, 458
Trachelospermum jasminoides, 617
Trade announcements, 614; notices, 86, 154, 220, 394
Transplanting machines, 22
Trebizonde, vegetable products in, 741
Tree Ferns of New Zealand, 713; measurement by the Abney level, 117; Tomato, the, 386
Trees and shrubs, 54, 79, 114, 177, 213, 317, 481, 520, 648, 620, 711; experiments on planting in the United States of America, 217; measuring, 220; death of, 642
Trent Park, Barnet, 141
Tricopilia suavis, 455
Tropæolum tuberosum as a food, 393
Tropical fruits in the Museum, Kew, 445
Tuberoses, 213, 803
Tulipa chrysantha, 839
Tulip exhibition, Haarlem, 734; season, a late, 812
Tulips and Hyacinths, cutting down, 749
Tunis, cultivation in, 613
Turf-lifting machine, Drummond's, 253
Turner Memorial prizes, 81
Turnip fly, 714; seed, early sowing, 714

U

Ulmus alata, 213; U. cornubiensis, 620
United Horticultural Benefit and Provident Society, 81, 251, 618
University extension in Scotland, 182
Upsala University, 741
Urginea maritima, 213
Uropedium Lindeni, 769

V

Vanda cœrulea at home, 77, 178
Vegetable, a new (Stachys affinis), 550; products and their cultivation, 284; tissues, stimuli in, 147; trials at Chiswick for 1887, 286
Vegetables, 116, 258, 616
Vegetation and climate, 103; and ferrous oxide, 613; and frost, 484
Veitch & Son's nursery, 679; Amaryllis at, 448; Orchids at, 286
Veitch Memorial prizes, 81
Veronica, a hardy, 79
Veronicas and the past winter, 393; of New Zealand, 778; shrubby, 482
Vertegans' nursery, 487
Victorian Era, Mr. Punch's, 773
Villa garden, plan for, 390
Vilvorde, School of Horticulture at, 580
Vine borders, beetles in, 395; Vine-growing at Madresfield Court, Malvern, 20; pruning, 354; grafting or inarching, 55; inarched, 778; product of thirty-one different varieties of, 174; red-spider on, 620, 677; young, on old borders, 746
Vines and Peaches, manure for, 186
Vineyard, the West Lynn, 457
Violas, bedding, 777
Violet, Wellsiana, 424, 457
Violets, 106; cultivation of, in frames, 480; Marie Louise, 414

W

Wall fittings and shreds, patent, 457
Wallwood Nursery, Mr. Ward's, 735
Warehouse, a London, 316
Water, purity of, 106
Watering-can, Hawe's, 152
Watering trees against walls, 839
Watkins' Patent Girthing Tape, 358
Weather in Lancashire, 618; the West, 387, 457; Yorkshire, 219
Webb & Sons' special prizes, 81
Weevils destructive to Beans, 116; to Cycads, 13
Wemyss Bay accident, 286
Wet frost, a, 458
What one woman did, 739
Wheat, depth at which to sow, 741
Whitewash, a good, 252
Whitworth, the late Sir J., 148
Willow growing, 175, 744
Willows for ornament, 54
Wilts Horticultural Society, 286
Williams', Mr. B. S., nursery, 678; spring flowers at, 448
Winter flowering Begonia, 384
Winter, the past, near Bournemouth, 71
Wireworm in Vine border, 395
Wonderful plants, 311, 423, 584, 648
Wood Anemone, the, 543
Wood & Son's special prizes, 486
Wooden Palings, erecting, 51
Worms in pots, to get rid of, 428; Nematoid, 519

Y

Yew, the large, at Craigends, 520
York Gala, 182
Young's variety of Cupressus Lawsoniana, 176
Yucca brevifolia, 772

LIST OF ILLUSTRATIONS.

A

Agaricus gambosus, 544, 545
Agave Morrisii, 549; A. Victoriæ Reginæ, 807
Æthalium vaporarium, 222
Aloes at home in Natal. (See Supplement, May 7)
Alton Towers, views in the gardens, 246, 247, and Supplement, February 19
Amaryllis, Colonel A. Burnaby, 709
Anemone bed fungus, 712
Anemone nemorosa, 542
Aphelandra chrysops, 737
Araucaria braziliensis, 680
Avenue of Palms, Ceylon. (See Supplement, March 19.)

B

Bailey, the late Mr. T., 552
Balmoral Castle, 811
Battersea Parks, views in. (See Supplement, June 4.)
Bean Weevil, 116
Beetle, a Longicorn, 776
Berberis japonica, 617; B. nepalensis var. Bealei, 608; B. Wallichiana, 609
Beyaz Dagh, 357
Bruchus granarius, 116
Buds on roots of Diplazium malabaricum, 583
Bulbs, black canker of, 840
Bulghar Dagh, Taurus, the home of Crocus zonatus, 9

C

Calanthe Veitchii, a striped, 45
Cannas, group of, at Euston Hall Gardens. (See Supplement, March 12.)
Catasetum Bungerothii, 142. (See Supplement, January 29.)
Caterpillar with fungus, 289
Cedrus Deodara at Windsor, 802
Coombe Warren dairy, 73; flower garden at, 41; garden front at (Supplement, January 8); garden terrace at (Supplement, January 15); pyramidal Ivy-leaved Pelargonium at, 77
Cordyceps Taylori, 289
Corm of Ixia, diseased, 84
Corypha australis in Lady Wilton's garden, Monte Carlo. (See Supplement, May 21.)
Crocus Byzantinus, home of, 521; C. cancellatus, home of, 21; C. carpetensis, leaf section, 12; C. iridiflorus, home of (Verespalak, Transylvania), 521; C. i., leaf section, 12; C. nevadensis, leaf section, 12; C. nudiflorus, leaf section, 12; C. parviflorus, home of, 357; C. sativus, leaf section, 12; tunics of (various species), 182, 183; C. vallicola, leaf section, 12; C. vernus, leaf section, 12; C. zonatus, home of, 9
Cupressus Lawsoniana, Young's var., 176, 177
Cyathea dealbata embraced by Panax arboreum, 713
Cycads at Chiswick. (See Supplement, January 1.)
Cyclamen, a crested, 619
Cyphomandra betacea, 383
Cypripedium Boissierianum, 143; C. Boxalli var. atrata, 210; C. callosum, 315; C. marmoratum, 576; C. Marshallianum, 513; C. Peteri, 577; C. politum, 765; C. venustum var. pardina, 382; C. vexillarium, 456

D

Daffodil Ard-Righ, 417
Decorative plants at Birmingham. (See Supplement, February 5.)
Diaxenes Taylori, a beetle destructive to Orchids, 776
Dipladenia, 348
Diseased Ixia corm, 84
Disease of Gardenia roots, 488, 489
Dracænas at Tresco. (See Supplement, April 2.)

E

Espalier, Griffon's, 356

F

Fern wall tile, 288
Ficus Benjamina, 733
Fordell Castle, 837; flower garden at, 835
Fritillaria Sewerzowii var. bicolor, 457
Frost, the late Mr. Philip, 649
Fumigator, a cheap, 83
Fungus of Anemone beds, 712
Fungus on caterpillar, 289

G

Gardenia roots, diseased, 488, 489
Geaster coliformis (Earth star), 810
Geert, Auguste van, 353
Geneva seed tester, 314
Gooseberry borer, 744
Grape White Gros Colmar, 255
Guildford Castle, plan for laying out laying the grounds of, 511; section, 510

H

Heterosporium ornithogali, 840
Hive, Neighbour's Bar-frame, 321
Honey crate, 520
Hydrosme Leopoldiana, 644, 645
Hypericum chinense, 705

I

Ixia corm, diseased, 84

K

Kalanchoe carnea, 211

L

Lælia anceps alba, 485; L. anceps var. Dawsoni, 424; L. anceps var. Hillii, 425; L. anceps var. Sanderiana, 281; L. anceps var. Stella, 280; L. anceps var. Williamsi, 349
Leaf sections of various Crocuses, 12
Lobelia Cavanillesi, 585
Longicorn beetle attacking Orchids, 776

M

Marguerite leaf miner, 57
Masdevallia velifera, 745
Maximiliana regia. (See Supplement, February 12.)
Mining grub of Marguerite leaves, 57
Monte Carlo, views in Lady Wilton's garden at. (See Supplements, April 30 and May 21.)
Moore, the late Mr. T., 49
Mushroom, the St. George's, 544, 545

N

Narcissus cyclamineus, 185; N. Glory of Leyden, 704; N. hybrid, 390; N. Johnstoni, 288; N. Leda, 832, 833; N. Little Nell, 553; N. minimus, 117; triandrus vars., 647; N. triandrus var. cernuus, 638, 648; N. triandrus var. pulchellus, 641, 651; N. triandrus var. reflexus, 640
Natal, Aloes at home in. (See Supplement, May 7.)
Natal, the highest point in. (See Supplement, May 7.)
Natal, Sir T. Shepstone's garden in. (See Supplement, April 16.)
Nematoid disease of roots, 488, 489
Nephrolepis rufescens, 477, 481
Nozzle, the Cyclone, 108, 109

O

Odontoglossum crispum Veitchianum, 799; O. Pescatorei leucoxanthum, 606
Oncidium Brunleesianum, 673

P

Panax arboreum embracing Cyathea dealbata, 713
Pear Bergamotte Cadette, 219; Beurré Clairgeau, 151; Beurré d'Anjou, 150; Beurré d'Aremberg, 218; Beurré Rance, 322; Beurré superfin, 150; Comte de Lamy, 85; Doyenné d'Eté, 20; Easter Beurré, 322; Glou Morçeau, 218; Jersey Gratioli, 85; Louise Bonne of Jersey, 84; Madame Millet, 323; Marie Louise d'Uccle, 151; Passe Colmar, 218; Seckel, 85; Urbaniste, 85; Verulam, 323; Winter Nelis, 219
Pear trees, upright cordon at Messrs. Cheal's nursery, 105
Pelargonium, pyramidal Ivy-leaved, at Coombe Warren, 77
Peziza tuberosa, 712
Phalænopsis-house, Heaton House, Cheshunt. (See Supplement, March 26.)
Phytelephas (Vegetable Ivory), 681
Pinus Lambertiana, 769
Plan for laying-out Guildford Castle grounds, 511; section, 510
Plan of villa garden, 391
Potatos, cross-bred, raised by Messrs. James Carter & Co., 111
Primula vinciflora, 574
Prunus Pissardi, 416
Pseudo-Tsuga Douglasii at Penrhyn Castle, 672

R

Rock garden at Messrs. Cheal's nursery. (See Supplement, January 22.)
Romulea Macowani, 180
Ruellia affinis, 17

S

Sandringham hives, 777
Seed tester, the Geneva, 214
Senecio elegans pomponicus, 585

T

Tapeinanthus humilis, 53
Taro plantation in a Chinese village. (See Supplement, February 26.)
Thanatophore, Williams', 152
Tobacco, Big Frederick, leaf of, 449; drying-house, 451; Kentucky seed-leaf, 448
Trees, measuring height of, 117
Turf-lifting machine, 253

V

Victoria Regia at Cherkley Court, 815; under side of leaf of, 798

W

Watering can, Hawes', 153
Water temple, a Chinese, 319
Weevil, Bean, 116
Weevils destructive to Cycads, 13
Windsor, 803
Woiblet spur and wire frame foundation comb, 777
Wood Anemone, the, 542

Y

Yucca brevifolia in Mojave Desert, 773

Z

Zamia corallipes attacked by a weevil, 13
Zebel, Taurus, the home of Crocus cancellatus, 21

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CONTENTS.

Æchmea flexuosa 8
,, mexicana 8
Amateurs' notes 11
Apiary, the... ... 10, 11
Billbergia vittata 12
Books, notices of :—
Monograph of the Genus Crocus 8
Carnation maggot at Slough 22
Cirropetalum Macraei ... 18
Cockscombs... 14
Cultural memoranda ... 13
Cycas circinnalis 16
Cypripedium obscurum ... 8
Florists' Flowers ... 18, 22
Flower garden, the ... 19
Forestry 19
Fruit Register 15
Fruits under glass ... 22
Gas-lime, how to use ... 11
Grape berry, a large ... 22
Green frogs... 22
Hardy fruit garden, the... 14
Heaths, propagation of ... 19
Henderson & Sons' nursery 10
India... 11
Ireland 15
Novelties of 1886 14
Obituary :—
Jenkins, Mr. H. M. ... 24
Wilder, Hon. Marshall 24
Onion, the 22
Orchid notes and gleanings 15, 23
Our Jubilee 16
Pear blight... 8
Pears, select list of ... 20
Phaseolus Caracalla ... 21
Plants and their culture . 10
Plant portraits 8
Primula sinensis 18
Root pruning 18
Roses 12
Rose Society, the National 18
Royal Horticultural Society's Committees ... 24
Ruellia affinis 17
Seeds, transmission of, from the tropics ... 21
Scotland 23
Snowstorm, the 7
Vines at Madresfield Court 20
Weather, the 25
Weevils destructive to Cycads 13

ILLUSTRATIONS.

Bulghar Dagh, Taurus, the home of Crocus zonatus ... 9
Crocus leaves, sections of the leaves of various species of... 12
Cycads at Chiswick. See Supplement
Pear, Doyenné d'Eté 20
Ruellia affinis 17
Zebel, Taurus, the home of Crocus cancellatus 21
Weevil in stems of Zamia 13

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SOBRALIA LILIASTRUM.
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Splendid Bulbs, just received from Japan.

MESSRS. PROTHEROE AND MORRIS will include the above in their SALE on WEDNESDAY NEXT, January 5.

On view morning of Sale, and Catalogues had.

Friday Next.

700 ODONTOGLOSSUM ALEXANDRÆ.

MESSRS. PROTHEROE AND MORRIS will include in their SALE on FRIDAY NEXT, January 7, an importation of 700 ODONTOGLOSSUM ALEXANDRÆ, received direct, and in fine condition; also ODONTOGLOSSUM CRISPUM TRIANÆ, O. CRISPUM FASTUOSUM, and other plants in flower.

On view morning of Sale, and Catalogues had.

Friday Next.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. J. Charlesworth, Heaton, Bradford, to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, January 7, at half-past 12 o'Clock precisely, a fine importation of ONCIDIUM MONACHICUM, O. SUPERBIENS, CATTLEYA GIGAS IMPERIALIS, ODONTOGLOSSUM SCEPTRUM, O. WALLISII—all having been imported six weeks, and are now in fine condition.

Also an importation of about 700 ODONTOGLOSSUM ALEXANDRÆ, in good condition, received direct; a consignment of LÆLIA PURPURATA, &c., and about 150 lots of ESTABLISHED ORCHIDS from Messrs. Shuttleworth, Carder & Co.

On view morning of Sale, and Catalogues had.

Sunbury.

UNRESERVED CLEARANCE SALE.

In consequence of Relinquishing the Business.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, The Springfield Nursery, Sunbury, on THURSDAY, January 20, at 12 o'Clock precisely, the whole of the outdoor NURSERY STOCK.

Further particulars will appear next week. Catalogues can be had, when ready, of the Auctioneers, 67 and 68, Cheapside, E.C.

ORCHIDS—ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

THE VINEYARD and NURSERIES, GARSTON, NEAR LIVERPOOL,

have to state that a

NEW EDITION OF THEIR ORCHID CATALOGUE

is now ready, and will be sent Post-free on application.

FOR SALE, Freehold, or TO LET on Lease, The MELBOURNE NURSERY, Anerley, near Crystal Palace, formerly Let at £250 per annum, to be had a Bargain, nine 100-feet Greenhouses, Fernhouse, Showhouse, Dwelling House, Stabling, &c.

Apply to WALFORD AND WILSHIRE, 121, Anerley Road, London, S.E.

Middlesex.—To Cut Flower Growers.

TO BE SOLD, at a sacrifice, a well-known MARKET NURSERY with 25 Greenhouses, containing 15,000 feet of Glass. Moderate rent. Terms on application to MESSRS. PROTHEROE AND MORRIS, 67 and 68, Cheapside, E.C.

TO SELL or LET, a MARKET GARDEN with Glass Erections, &c., within 2 miles of Stockton-on-Tees. Excellent opening; good markets for all produce. Entry favourable.

Apply to LITTLE AND BALLANTYNE, Carlisle.

BRIGHTON.—Rare opportunity, solely through ill-health. Old-established family GREENGROCER and FRUITERER'S BUSINESS, corner premises, in excellent position and fashionable locality. Long lease, goodwill, trade fixtures, fittings and stock. A bargain.

Apply to E. TUDOR PRIEST, Auctioneer, 60, King's Road, Brighton.

Fifty Nurseries, Market Gardens, Florist and Seed

BUSINESSES to be DISPOSED OF.

MESSRS. PROTHEROE AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obained, gratis, at 67 and 68, Cheapside, London, E.C.

Landscape Gardening.

H. F. MALLER (of the firm of B. Maller & Sons), late Pupil of the Crystal Palace School of Landscape Gardening, is prepared to FURNISH PLANS, or undertake any kind of the above work.—61, High Street, Lewisham.

HORTICULTURAL SOILS, MANURES, SUNDRIES, and BERKSHIRE POTTERY. Catalogue Free per post, of every Horticultural Requisite.

BENJAMIN FIELD, F.R.H.S. (Son-in-law and Successor to J. Kennard), Swan Place, Old Kent Road, London, S.E.

TELEGRAMS—"FLORICULTURE, LONDON." Established 1854.

IMPORTANT to ORCHID GROWERS.

Special offer of Light Brown ORCHID PEAT, full of Pure Bracken fibre; also a good GENERAL PEAT, Quotation with sample on application to THE PEAT ASSOCIATION, 10, Cullum Street, London, E.C.

Rhubarb and Seakale Forcing.

STRONG WELL-MADE POTS for the above.—GARDEN POTS, ORCHID POTS, ALPINE POTS, FERN PANS, SEED PANS, and all other GARDEN POTTERY of the best quality can be supplied by J. MATTHEWS, Royal Pottery, Weston-super-Mare. Price List Free.

ASPARAGUS, grand Roots for Forcing, 2*s.* per dozen, 12*s.* 6*d.* per 100; strong, for planting, 2*s.* 6*d.* per 100. SEAKALE, forcing, 2*s.* 6*d.* per dozen, 16*s.* per 100; planting, 2*s.* per dozen, 12*s.* 6*d.* per 100.

RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Grape Vines and Strawberries (in pots).

FRANCIS R. KINGHORN offers very fine stocks of the above in all leading varieties, true to name. LIST and Prices on application.

Sheen Nurseries, Richmond, Surrey.

ROBERT NEAL begs to call the attention of Gentlemen, Builders, and others who intend planting this season, to his stock of FRUIT, FOREST, and ORNAMENTAL TREES, SHRUBS, ROSES, &c., which are in fine condition for removal, and comprise especially those kinds which are most suitable for Town Planting. Free delivery in own vans within a distance of six miles.

CATALOGUES on application.

The Nurseries, Trinity Road, Wandsworth Common. S.W.

LILIUM AURATUM.—MORLE & Co.'s consignments are now arriving in splendid condition. Guaranteed the cheapest for quality in the Trade. Fine, sound, firm, heavy Bulbs, 4*s.*, 6*s.*, 9*s.*, and 12*s.* per dozen; 30*s.*, 45*s.*, to 75*s.* per 100. Samples on application.

1 and 2, and 162, Fenchurch Street, London, E.C.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

NOTICE IS HEREBY GIVEN, that the ANNUAL GENERAL MEETING of the Subscribers to this Institution will be held on FRIDAY, January 14, 1887, at SIMPSON'S, 101, STRAND, W.C., for the purpose of receiving the ACCOUNTS, and the REPORT of the COMMITTEE for the present year, and for ELECTING OFFICERS for the ensuing year. Also for the ELECTION of FOUR PENSIONERS on the Funds of the Institution. The Chair will be taken at 3 o'Clock precisely. The Ballot will close at 5 o'Clock precisely.

By Order, EDW. R. CUTLER, Secretary.

50, Parliament Street, London, S.W., December 23, 1886.

N.B. The Voting Papers have all been issued; any Subscriber not having received one is requested to notify the same to the Secretary.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.

HENRY MOXHAM is a CANDIDATE for the PENSION at the ELECTION in JANUARY NEXT. He has been in the Trade with Leading Firms for the past forty years, and is now entirely unfitted for work.

The undersigned respectfully solicit from Subscribers promises of support at the ensuing Election.

WILLIAM CUTBUSH AND SON,

Highgate Nurseries, London, N.

THE PARKS, &c., Committee of the Metropolitan Board of Works will meet at the Office of the Board, Spring Gardens, S.W., on WEDNESDAY, the 12th day of January, 1887, at 12 o'Clock at noon precisely, and will then be prepared to OPEN TENDERS by persons who may be willing to CONTRACT for REGULATING and SOWING portions of the surface of CLAPHAM COMMON, and CLEANING OUT the COCK POND on the said Common. Persons desirous to submit Tenders may inspect the Drawing and Specification, and obtain Form of Tender, and other particulars, on application to the Superintending Architect of the Board, at the Office, Spring Gardens, between the hours of 9 A.M. and 4 P.M. (or on Saturdays between the hours of 9 A.M. and 2 P.M), until Tuesday, the 11th day of January, 1887. The Tenders, which must be on the form supplied from this Office, and be addressed to "The Clerk of the Board," are to be delivered at the Office befor 4 o'Clock on the last-mentioned day, and no Tender will be received after that hour. Any Tender which is not fully filled up in every particular will be rejected. The Committee do not bind themselves to accept the lowest or any tender.

J. E. WAKEFIELD, Clerk of the Board.

Spring Gardens, S.W., December 31, 1886.

Continental Nurseries, Ghent, Belgium.

Established 1818.

AUGUST VAN GEERT begs to offer to the Trade the following well grown PLANTS, of which he has a nice healthy stock still on hand:—

INDIAN AZALEAS, nice plants, well budded, 80*s.* to 100*s.* per 100; special price per 1000.
,, ,, larger plants, £6 to £12 per 100.
CAMELLIAS, with flower-buds, 15*s.*, 18*s.*, 24*s.*, to 30*s.* per dozen.
RHODODENDRONS, hardy hybrid, nice stuff, 50*s.* to 100*s.* per 100; budded, £6, £8, and £10 per 100.
AZALEA MOLLIS, well set, fine stuff, 40*s.* to 100*s.* per 100.
GHENT AZALEAS, of sorts, well set, fine stuff, 100*s.* to 120*s.* per 100.
CONIFERÆ, of sorts, fine, 30*s.*, 60*s.*, to 100*s.* per 100.
WATERER'S PYRAMIDAL CYPRESS, 1½ to 2 feet, 40*s.* per 100.
SPIRÆA JAPONICA, £5 and £6 per 1000.
LILY OF THE VALLEY, clumps, 8*s.* per dozen.
HYDRANGEA PANICULATA GRANDIFLORA, 25*s.* to 60*s.* per 100.

PALMS

Immense Stock on hand, of sorts, for Table Decoration, 100*s.* to 200*s.* per 100.

SEEDLING PALMS.

LATANIA BORBONICA, 10*s.* per 100.
CORYPHA AUSTRALIS, 15*s.* per 100.
ARECA LUTESCENS, 30*s.* per 100; 250*s.* per 1000.
PHŒNIX RECLINATA, 8*s.* per 100; 40*s.* per 1000.
KENTIA BELMOREANA, 60*s.* per 100; 500*s.* per 1000.
,, FORSTERIANA, 40*s.* per 100; 500*s.* per 1000.
COCOS AUSTRALIS, 10*s.* per 100.
CHAMÆROPS FORTUNEI, 8*s.* per 100; 40*s.* per 1000.

SUNDRY PLANTS.

IMANTOPHYLLUM, fine hybrids, from Lindeni, Van Houttei, &c., seedlings, 30*s.* to 60*s.* per 100.
,, flowering plants, 169*s.* per 100.
ARAUCARIA EXCELSA, nice plants, 2*s.* 6*d.* to 5*s.* each.
DRACÆNA TERMINALIS, nice plants, 12*s.* to 24*s.* per dozen.
,, AMABILIS, nice plants, 18*s.* to 36*s.* per dozen.
FERNS, nice plants, of sorts, 20*s.* to 40*s.* per 100.
NEW BEGONIA, GLORY OF SAONE (the best winter flowering plant out), 2*s.* 6*d.* each, 24*s.* per dozen.
NEW LILLIPUT Golden PELARGONIUM, PRINCESSE CLEMENTINE, 2*s.* each, 15*s.* per dozen.
CROTONS, of sorts, nice plants, 12*s.* per dozen.

TEN LARGE CAMELLIAS, very fine, full of flower-buds, in pots and tubs, 6 to 10 feet, specimens.—Apply to WILLIAM BARRON, Nurseryman, Sketty, Swansea.

LIMES — ELMS — LIMES.

STANDARDS for Avenue or Street Planting, straight stems, fine heads, good roots.

LIMES, best red-twigged variety, 12 to 14 feet, and 14 to 16 feet.

ELMS, English, true, 12 to 14 feet, and 14 to 16 feet.

Very cheap by the dozen or hundred.

JOHN PERKINS AND SON, Billing Road Nurseries, Northampton.

LONDON PLANES, fine straight trees, 8 to 10 feet, £4 per 100; 10 to 12 feet, £5 per 100. Austrian PINE, fine, 2½ to 3 feet, 20*s.* per 100. Scotch FIR, fine, 2 to 3 feet, 30*s.* per 1000. QUICK, fine, 4-year, 30*s.* per 1000.

W. JACKSON, Blakedown, Kidderminster.

SEEDS OF SUPERIOR QUALITY.

WM. PAUL & SON

(Successors to the late A. PAUL & SON, Established 1806)

BEG TO ANNOUNCE THAT THEIR

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IS NOW READY, and will be forwarded, post-free, on application.

Many Seeds are home-grown, and are selected with the utmost care from the most celebrated stocks at home and abroad, in order to secure their Customers the best quality that can be obtained, at the lowest possible prices to be remunerative.

IMPORTANT—Observe the Christian Name—

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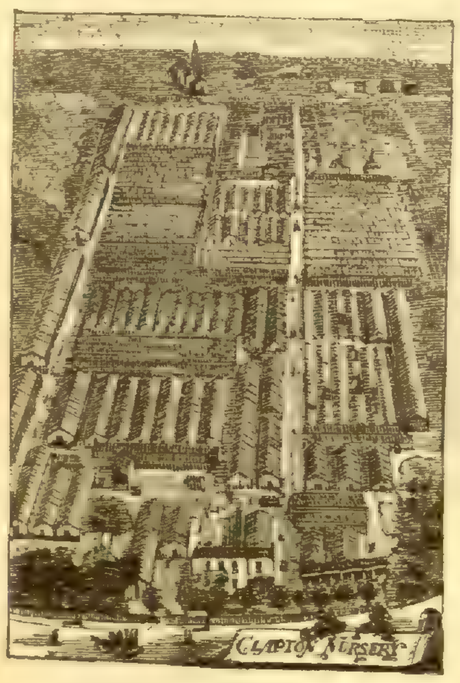
PAUL'S NURSERIES AND SEED WAREHOUSE,

WALTHAM CROSS, LONDON, N.

HUGH LOW & CO.,



CLAPTON NURSERY,
LONDON, E., and
Bush Hill Park Nursery,
ENFIELD,
Invite Inspection of the
IMMENSE STOCK
growing in their Nurseries, as represented, comprising
ORCHIDS,
Flowering & Decorative Plants,
ROSES, FRUIT TREES,
and
General Nursery Stock.

274 600 SUPERFICIAL FEET OF GLASS.

ORCHIDS A SPECIALTY.

The Stock is of such magnitude that, without seeing it, it is not easy to form an adequate conception of its unprecedented extent. It includes, in addition to the General Collection, many thousands of Cattleya amethystoglossa, Cattleya Gaskelliana, Cattleya gigas, Cattleya labiata, Percivaliana and Warneri varieties, Cattleya Mendelli, Cattleya Mossiæ, Cypripediums, Dendrobiums, Odontoglossum Alexandræ, Odontoglossum Pescatorei. Odontoglossums in variety, Oncidiums, Phalænopsis.

SELECT GARDEN SEEDS.

IRELAND & THOMSON

BEG TO ANNOUNCE THAT THEIR

CATALOGUE OF VEGETABLE AND FLOWER SEEDS,

GLADIOLI, GARDEN IMPLEMENTS, REQUISITES, &c.,

Is now Ready, and may be had, Post-free, on application.

SEED AND BULB WAREHOUSE,

81 PRINCES STREET, EDINBURGH.

THE

NEW LATE YELLOW

CHRYSANTHEMUM

IN

Cultivation for Cutting

IS

"MRS. JONES,"

AWARDED A

First-class Certificate

THIS SEASON.

It is a sport from the well-known Japanese variety "**ETHEL**," and is the exact counterpart of that favourite variety in every way excepting the colour, which is a beautiful rich bright golden-yellow, distinct in colour from every variety in cultivation. I shall have quantities of flowers until the END OF JANUARY; showing it to be a specially LATE-flowering one.

Price, per Dozen, Hundred, and Thousand, upon application.

THOMAS S. WARE,

HALE FARM NURSERIES,

TOTTENHAM, LONDON.

ROSES 20 ACRES.

Well-rooted, many shooted, truly named, of matured vigorous growth, and of the best kinds. BUSHES, R. S. & Co.'s selection, 8*s.* per dozen, 60*s.* per 100. STANDARDS, 15*s.* per dozen, 105*s.* per 100. Packing and Carriage Free for cash with order.

These World-famed ROSES cannot fail to give the greatest satisfaction.

ROSES IN POTS;

all the best New and Old English and Foreign sorts, from 18*s.* to 36*s.* per dozen.

Descriptive List free on application.

RICHARD SMITH & CO.,
WORCESTER.

ROSES

PLANTERS of ROSES, in large or small quantities, are invited to write for Present Season's Priced and Descriptive CATALOGUE to the undersigned, who will forward the same, gratis and post-free, and who are prepared to make extremely advantageous offers for large quantities of splendid plants of the most superb varieties.

EWING & CO.,

SEA VIEW NURSERIES,

HAVANT, HAMPSHIRE.

A LARGE AND HEALTHY STOCK OF ALL KINDS TO SELECT FROM.

CORDON FRUIT TREES

A SPECIALTY. SEND FOR NEW ILLUSTRATED CATALOGUE.

ORNAMENTAL TREES AND SHRUBS, ROSES, RHODODENDRONS, &C.

CATALOGUES Post-Free.

J. CHEAL & SONS

Crawley, Sussex.

STRAWBERRIES.

Strong Roots, 4*s*. per 100. Plants in small pots, 16*s*. per 100; ditto in large pots, 25*s*. per 100. Descriptive LIST free.

RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

FERNS A SPECIALTY.

An IMMENSE STOCK, in SPLENDID CONDITION.

ILLUSTRATED CATALOGUE, containing "Hints on Fern Cultivation," 1*s*.

SMALLER CATALOGUE, of over 1300 species and varieties, including Descriptive "LIST OF NEW, RARE, AND CHOICE FERNS," and "HARDY NORTH AMERICAN FERNS," free on application.

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FERN NURSERY, SALE, MANCHESTER.

CUTBUSH'S MILL-TRACK MUSHROOM SPAWN.—Too well known to require description. Price, 6*s*. per bushel (1*s*. extra per bushel for package), or 6*d*. per cake; free by parcel post, 1*s*.

None genuine unless in sealed packages and printed cultural directions enclosed, with our signature attached.

WM. CUTBUSH AND SON (Limited), Nurserymen and Seed Merchants, Highgate Nurseries, N.

THE EARLIEST OF ALL POTATOS.

Forced Potatos are now worth 1*s*. 6*d*. to 2*s*. 3*d*. per Pound.

Sharpe's Victor will produce them in 6 to 7 weeks.

Price, 6d. per Pound.

CHARLES SHARPE & CO.,

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TRADE PRICE ON APPLICATION.

ROOTS FOR SPRING FLOWERS.

WALLFLOWERS, MYOSOTIS, SILENE COMPACTA, SWEET WILLIAMS, POLYANTHUS, PRIMROSES, single, very hardy and all shades of colour, strong, transplanted, 1*s*. per dozen, 5*s*. per 100.

DAISIES, red, white, pink, 1*s*. per dozen; 4*s*. per 100, 35*s*. per 1000.

VIOLAS and Bedding PANSIES, Alpine AURICULAS, AUBRIETIAS, ARABIS, 1*s*. 6*d*. per doz., 8*s*. per 100.

250,000 of the finest Hardy Perennials,

all best named varieties.

CARNATIONS and PICOTEES, 6*s*. per dozen.
PANSIES, show and fancy. 3*s*. per dozen.
POTENTILLAS, 5*s*. per dozen.
HEPATICAS, red and blue, 3*s*. 6*d*. per dozen.
PHLOXES, 1 year, 3*s*.; 2 years, 5*s*. per dozen.
PYRETHRUMS, 4*s*. per dozen, 20*s*. per 100.
PRIMROSES, double white, lilac and sulphur, 3*s*. 6*d*. per dozen.
PRIMULA SIEBOLDI, 4*s*. per dozen.
Mixed German IRIS, 2*s*. 6*d*. per dozen.
Mixed English IRIS, 1*s*. per dozen, 5*s*. per 100.
HOLLYHOCK Seedlings, splendid strain, 4*s*. per dozen, 25*s*, per 100.
DELPHINIUM Seedlings, all shades, 3*s*. per dozen.
HARDY PERENNIALS in variety, for continuous bloom, 12 kinds, 3*s*.; 25 kinds, 6*s*.; 50 kinds, 12*s*. 6*d*.; 100 varieties, 30*s*.; 100 plants in 50 varieties, 28*s*.; 200 varieties, 60*s*.

Stove and Greenhouse Plants.

Very cheap, clean, and healthy; five houses from 100 to 120 feet long, full of these plants. Very low offers to make room for winter and spring stock, 12 varieties, 6*s*.; 25 varieties, 15*s*.; 50 varieties, 35*s*.

Six Acres of Fruit Trees.

Best croppers, well rooted, healthy trees.

APPLES, PEARS, PLUMS, and CHERRIES, Pyramids, 9*s*. and 12*s*. per dozen; Standards, 9*s*., 12*s*. and 18*s*. per dozen; Dwarf-trained, 18*s*., 21*s*., and 24*s*. per dozen.
CURRANTS and GOOSEBERRIES, 2*s*. 6*d*. to 4*s*. per dozen; 15*s*. to 20*s*. per 100.
RASPBERRIES, 1*s*. to 2*s*. per dozen, 6*s*. to 12*s*. per 100.
RHUBARB, 4*s*. to 6*s*. per dozen. CATALOGUES free.
STRAWBERRIES, 35 of the best varieties, ground plants, 2*s*. 6*d*. per 100; in 2½-inch pots, 10*s*. 6*d* per 100; in 5-inch pots, for forcing, 25*s*. per 100.
VINES, 10 leading varieties on sale, good Planting Canes, 3*s*. to 5*s*. each; Fruiting Canes, 6*s*. to 7*s*. 6*d*. each.

Three Acres of Roses.

Well rooted, hardy plants of best sorts; 12 fine H.-P. ROSES, free, for 7*s*.; 50 for 25*s*.; 100 for 45*s*.

MOSSES, CLIMBERS, NOISETTES, &c., 6*s*. per dozen, CATALOGUES free.

Forest Trees, Evergreen and Deciduous Shrubs, Conifers, &c.

Many thousands of these in all sizes and varieties, and in the most healthy and well-rooted condition. See Catalogue.

FOREST TREES of sorts, 6*s*. per dozen, 40*s*. per 100.
EVERGREEN SHRUBS, 6*s*. to 9*s*. per dozen; 40*s*. and 60*s*. per 100.
DECIDUOUS, all beautiful blooming kinds, 4*s*. per dozen, 25*s*. per 100.
RHODODENDRONS, fine named scarlet, pink, crimson, &c., shades, 18*s*. and 24*s*. per dozen.
PRIVET OVALIFOLIUM, for hedges, 5*s*. per 100, 45*s*. per 1000.
THORN QUICKS, 20*s*. and 25*s*. per 1000.

☞ *Everything wanted for a Garden in the best quality at low prices. Large buyers liberally treated. See Catalogue.*

WM. CLIBRAN & SON,

OLDFIELD NURSERY, ALTRINCHAM.

12, MARKET STREET, MANCHESTER.

SPECIAL CULTRD OF

FRUIT TREES AND ROSES.

A large and select stock is now offered for Sale.

The Illustrated and Descriptive CATALOGUE of FRUITS Post-free.

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KING'S ACRE NURSERIES, HEREFORD.

ESTABLISHED, 1785.

SPECIAL CULTURE, ROSES AND FRUIT TREES.

These old-established Nurseries have gained a reputation unsurpassed for the cultivation of **ROSES and FRUIT TREES.**

Descriptive Catalogues on application to

JOHN CRANSTON & CO.,

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CHEAP OFFERS IN

CHOICE PLANTS

100 STOVE or GREENHOUSE PLANTS

in 100 varieties, for 42*s*., 63*s*., or 105*s*.

Other offers, and in smaller quantities, see CATALOGUE, which will be forwarded on application.

12 AZALEA INDICA, covered with flower-buds, 18*s*. and 24*s*.
ORCHIDS, choice varieties, for cool or warm house, in 12, 24, or 36 varieties, at 21*s*. and 42*s*. per dozen.
,, 100 varieties, 400*s*.; 50 varieties, 100*s*. and 150*s*.
TROPÆOLUM azureum, 2*s*. 6*d*.
,, tricolorum grandiflorum, 1*s*. 6*d*.
,, Brachyceras, 2*s*.

BULBS POST-FREE.

E. G. HENDERSON & SON,

Pine-apple Nursery, Maida Vale,
LONDON, W.

PRISE COB and other NUT TREES.

Gentlemen desirous of obtaining the true

WEBB'S PRIZE COB FILBERT TREES,

AS ALSO THE

Kentish Cob and other Nut Trees,

should send their Orders as early as convenient to

Mr. COOPER, F.R.H.S., Calcot Gardens, Reading,

of whom alone the various sorts can be obtained.

PRICE LISTS and PAMPHLETS on application.

FRUIT TREES,

SEVENTY-FOUR ACRES.

APPLES, PEARS, PLUMS, CHERRIES, PEACHES, NECTARINES, APRICOTS, and other FRUIT TREES, as Standards, Dwarfs, Pyramids, Bushes, Cordon, and Trained Trees in great variety.

VINES, excellent Canes, 3*s*. 6*d*. to 10*s*. 6*d*. Orchard House Trees in pots, PEACHES, APRICOTS, NECTARINES, &c., from 5*s*. FIGS from 3*s*. 6*d*.

DESCRIPTIVE LIST, containing a sketch of the various forms of Trees, with Directions for Cultivation, Soil, Drainage, Manure, Pruning, Lifting, Cropping, Treatment under Glass; also their Synonyms, Quality, Size, Form, Skin, Colour, Flesh, Flavour, Use, Growth, Duration, Season, Price, &c., free by post.

RICHARD SMITH & CO.,

WORCESTER.

KENT—THE GARDEN OF ENGLAND.

300,000 FRUIT TREES—true to name.

GEORGE BUNYARD & CO.,

THE OLD NURSERIES, MAIDSTONE,

(Established 1796), will forward, for Six Stamps, their

DESCRIPTIVE FRUIT CATALOGUE,

with Illustrations and Cultural Notes (Copyright edition). See *Gardeners' Chronicle* of Sept. 4, p. 298. The finest stock ever offered—clean, healthy, with grand fibrous roots. Frequent trains from London by North Kent and London & Chatham Railways.

"Planting Season."
"Unequalled for quality, Variety & Extent."

FOREST, FRUIT & ALL OTHER TREES & PLANTS.

ROSES EVERGREENS VINES &c

Descriptive Catalogues Post Free.

"James Dickson & Sons"
"Newton" Nurseries
TELEGRAPHIC ADDRESS CONFIDENCE CHESTER.
Chester.

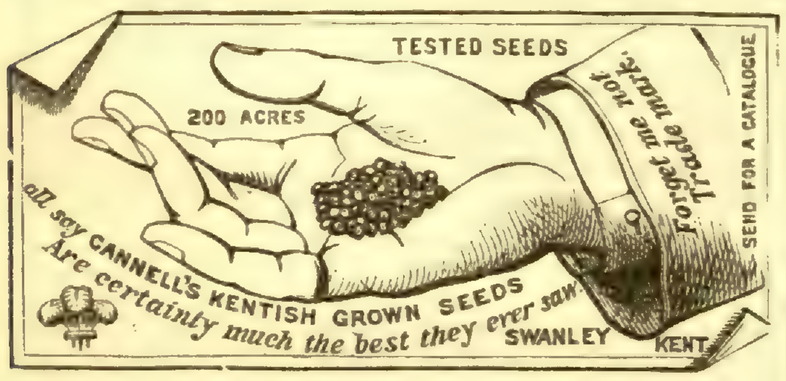
HERBACEOUS AND ALPINE PLANTS.

CATALOGUE of 50 Pages, containing full information as to colour, height, situation, time of flowering, &c., free on application.

A CAPITAL COLLECTION for ROCKS, STUMPS, and BORDERS, from 25*s.* per 100, or 4*s.* per dozen.

Most of the Plants being in Pots may be despatched at any time, or by Parcel Post when fit.

RICHARD SMITH & CO.,
NURSERYMEN AND SEED MERCHANTS,
WORCESTER.



MY NEW CATALOGUE of the CHOICEST GERMAN FLOWER SEEDS is now being issued; copies may be had Gratis and Post-free on application.
FRED. ROEMER, Seed Grower, Quedlinburg, Germany.

HENDER'S PETUNIAS and BALSAMS
Are the finest Strains offered.
PETUNIAS, Single-striped, 1*s.* and 2*s.* per packet.
,, Single-striped and Fringed Varieties, 2*s.* per packet.
,, Double Fringed, 2*s.* and 3*s.* 6*d.* per packet.
BALSAMS, 8 splendid Double Varieties, separate, 2*s.* 6*d.*; mixed, 1*s.*
HENDER AND SONS, The Nursery, Plymouth.

QUALITY and QUANTITY.
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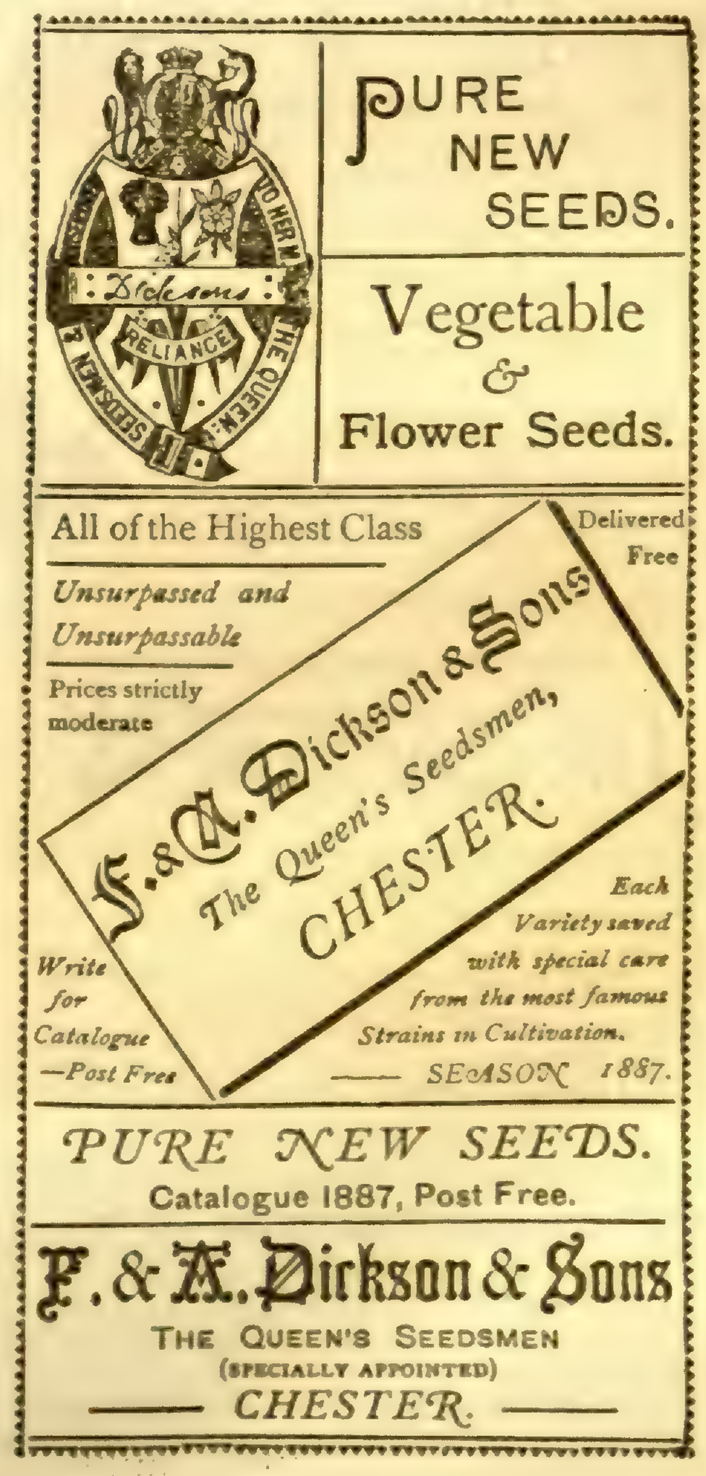

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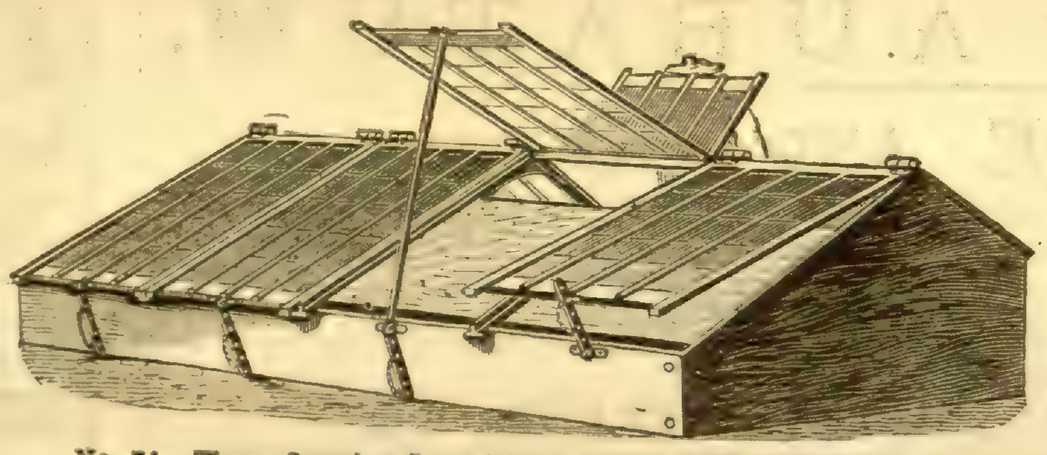

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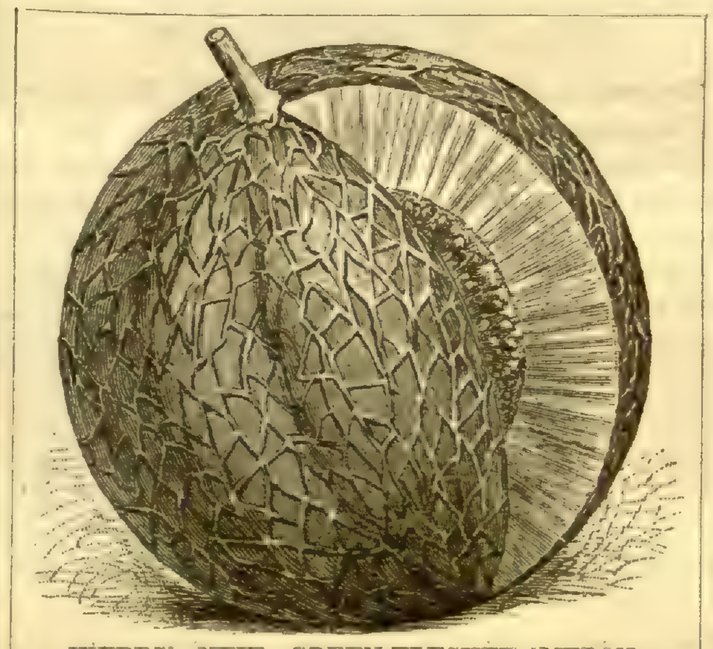

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SPECIAL NOTICE.—The Price of the "GARDENERS' CHRONICLE" *is now REDUCED TO* 3*d.*

THE

Gardeners' Chronicle.

SATURDAY, JANUARY 1, 1887.

THE SNOWSTORM.

THE storm of December 26 came literally as a thief in the night—or rather in the evening. A green Christmas with a crust of frost on its receding crown was succeeded by a showery Sunday; the showers resolved themselves into a steady downpour throughout the afternoon and the early part of the evening. The temperature seemed almost too mild for snow, though on inquiry about six as to the prospect of a fair night the reply was "no," for should "it leave off raining it would assuredly snow." However, neither the temperature nor the barometer gave any sure indication of the heavy snowstorm that was so near at hand. About 7 o'clock the rain crystallised into snow, and so fast and furious did the latter descend, and so large and fluffy were the flakes, that before 10 o'clock nearly 6 inches had fallen. Up to, and for several hours beyond midnight, the snow continued to descend in a swift, sullen, silent, and most determined manner. Soon afterwards half a gale of wind arose, and the descent of the snow became more irregular and fitful, but at daybreak it was found to be about 10 inches, and very much drifted in open and exposed places to a depth of a yard or more. This showed how stiff the breeze must have been, for the snow fell mostly in a heavy and rather moist state. Such a heavy snow-fall in such a limited time is a rare event in our experience, and is the more wonderful, considering that the snow fell on a wet and sloppy base. The character of the snow, and the wet base on which it fell, combined with the complete stillness of the air during all the earlier portion of the storm, caused it to stick to the trees and shrubs in an unusual manner. In many instances even the east wind, keen and strong, failed to displace it to any sensible extent, and it was a most unusual sight to see boughs and branches bent down to the ground, and in many instances snapped right off, by the heavy weight of nearly a foot of wet snow still adhering to them. So firmly did the snow adhere, that it required much violent shaking to remove it, and the misplacement of boughs and disfigurement of symmetry are very great. Most of these, however, will speedily right themselves, but, alas! there is no means of replacing the fine boughs of Cedar of Lebanon, and those of not a

few other Conifers which have been snapped off with apparently as much ease and abruptness as if they had been made of glass. The shortness and directness of the line of breakage in these cases is worthy of note. There are few or no splinters, but the lines of breakage are in most cases as nearly at right angles with the lines of growth as if they had been sawn right across. Some of the most curious and unexpected wreckages here are those of tall Lilacs broken, and in one case apparently pulled right out by the roots, as the whole plant was borne to the ground by the weight of snow; and this against Yews that had escaped breakage though almost within touch of the Lilacs. Another singular feature is worthy of note—that while many of the Cedars of Lebanon in one place have suffered severely from branch breakage, those at a little distance off have suffered but little; thus showing that even among Cedar trees within close proximity the one may be taken and the other left.

At Sarsden, Oxon, we hear of great destruction among the trees, including a fine Walnut a hundred years old or more.

The damage done by the snowfall in the London district has not been so disastrous as in other localities, where ornamental Conifers find more general adoption. Still even here the deciduous trees and large Laurels and Sweet Bays have not gone through the storm scatheless, and many will have the ugly wounds and scars of broken-off limbs to show for years to come. The parks at Greenwich and Bushey have suffered severely, and at South Kensington the glass erections of the late Colonial Exhibition and the fine conservatory at the rear of the Albert Hall have lost several hundreds of panes of glass. The heavy fall of snow and the wind have done considerable damage to trees, both old and young, at Kew. Large limbs have been torn off old Oaks, Chestnuts, Beeches, &c. Such things as Chinese Arbor-vitæs, Cupressus macrocarpa, Cryptomeria elegans, &c., were weighed down to the ground by the weight of snow, and many very seriously broken. Many young plants in the collections of deciduous trees, such as Celtis, Quercus, &c., are completely ruined.

The houses have not suffered, except the Winter Garden, where portions of ornamental ironwork have been broken off, and glass smashed by the snow. The snowfall for London, according to Mr. Symons, reached a depth of 8 inches = 1.82 of rain. We append for comparison the rainfall, also recorded by Mr. Symons, for December 26, of some widely separated places in the southern part of the country, which shows some remarkable differences in the quantity registered at those places:—

Rainfall of December 26, 1886.

	Inches.
Forty-hill, Enfield, Middlesex	1.47
Lower Cousley Wood, Hawkhurst, Kent... ...	1.51
Tenterden, Kent	1.52
Royal Botanic Gardens, Regent's Park, London...	1.67
Camden Square, London	1.82
Langton Herring, Weymouth, Dorset	1.82
Heatherlands, Parkstone, Dorset	2.26
St. Catherine's, Horndean, Hants	2.88
Red Lodge, Southampton, Hants	3.16

In Wiltshire, as we learn from Mr. Horsefield, of The Gardens, Heytesbury, the snowstorm, which commenced on Sunday afternoon and lasted throughout the night, was exceptionally severe, and unparallelled in recent years in the destruction and damage done to valuable trees and shrubs. Conifers, together with many other evergreen subjects, present a pitiable sight, being in many instances a complete wreck, and almost beyond recovery.

From the Lothians we learn that although the frost is severe the inconvenience from the snowfall is not exceptional, though in the north-east of Scotland the ground is covered to a depth of 14 inches.

It is greatly to be feared that this snowstorm, so sudden and so unexpected, will leave heavy tracks and marks of its disastrous ravages in many a park, garden, and pleasure-grounds for many a year to come.

PEAR BLIGHT.

We all know how very vague and superficial our knowledge of so-called "blight" is, and the numerous explanations given of "canker." The truth is, the full explanation of these matters is hardly within the reach of the practical man, who must contrive to interest scientific experts in the matter, and then there may be a chance of arriving at some definite conclusion. The Pear blight, which is common in some parts of America, is a case in point. It was attributed to insects, fungi, frost, electricity, and lastly, to Bacteria. This last view is shown to be the correct one by Drs. Burrell and Arthur, who prove their opinion—1, by the discovery of the Bacteria (in itself of little moment); 2, by inoculation of previously healthy trees with the Bacteria; 3, by removing the Bacteria from a diseased tree, cultivating them in appropriate fluids, and then producing the disease in a healthy tree by inoculating it with these isolated Bacteria; and lastly, by the negative evidence of taking the juice from a diseased tree, filtering off all the Bacteria, and then inoculating healthy trees with the filtered juice, when no result is produced. Dr. J. C. Arthur has lately printed, in the *Proceedings of the Philadelphia Academy of Natural Sciences*, the results of his experiments.

PLANT PORTRAITS.

Angræcum Scottianum, *Orchidophile*, December.

Dendrobium thyrsiflorum, *Garden*, Dec. 11.

Oncidium Brauni.—One of the small-flowered Oncids, with segments of pale yellow mottled with brown.—*Gartenflora*, t. 1235.

Tulipa linifolia, Regel, *Gartenflora*, t. 1235.—Leaves undulate, flowers scarlet with a black eye.—Native of Bokhara.

PLANTS NEW OR NOTEWORTHY.

ÆCHMEA MEXICANA, *Baker, in Journ. Bot.*, 1879, *p.* 165.

This fine species has just flowered for the first time at Kew. It was discovered by Bourgeau during the unfortunate Maximilian expedition, on the mountains of the province of Orizaba. Our plant was purchased at the sale of the Morren collection.

Acaulescent; leaves twenty to thirty, in a dense rosette, lorate, with a deltoid-cuspidate tip, above 2 feet long, 3 inches broad in the middle, 4—5 inches at the dilated base, pale green, maculate with darker green, not very rigid in texture; lepidote pubescence obscure; prickles small, deltoid-cuspidate, the lower tipped with brown; peduncle stout, a foot long, densely furfuraceous, as is the panicle-rachis; bracts colourless, lanceolate, scariose, erect; panicle oblong-cylindrical, a foot long, 4—5 inches broad; lower branches 2—3 inches long; lower branchlets forked; pedicels erecto-patent, ¼ inch long; calyx with ovary oblong, green, ½ inch long, densely furfuraceous; petals bright crimson, connivent, protruded ⅓ inch from the calyx; stamens and pistil shorter than the petals. *J. G. Baker.*

Æchmea flexuosa, *Baker, n. sp.**

This is a fine new Æchmea, one of the largest of all the known kinds, which has just flowered at Kew for the first time, although we have had it from 1877. It is allied to the Guianan Æ. Jenmani and Brazilian Æ. platynema, and is remarkable for its very large horny leaves and large lax panicle, with zizzag ultimate branchlets, and glabrous sessile glossy pale pink flowers. We received it from Messrs. Linden, but we have no exact information as to its native country.

Acaulescent; leaves 20—30, in a dense rosette, measuring 3 or 4 feet in circumference, lanceolate from an ovate dilated base 6 inches broad, bright green, very horny, channelled down the face, not banded or striped, but furnished with many scattered whitish spots, 3 inches broad at the middle, narrowed to a deltoid apex; lepidote pubescence very obscure; marginal prickles small, pale, deltoid; peduncle stiffly erect, stout, 1½ foot long; bracts pale, lanceolate, erect, scariose; panicle ovate, bipinnate, 1½—2 feet long, 6—8 inches in diameter; lower branches 3—4 inches long, with forked lower branchlets; ultimate rachises flexuose; flowers distant, sessile, erecto-patent; flower-bracts none; calyx with ovary ½—⅝ inch long, oblong, glossy, pale pink; sepals horny, rather longer than the ovary, imbricated, lanceolate-deltoid, with a small erecto-patent brown mucro; petals bright red, lingulate, shortly protruded; stamens and pistil shorter than the petals. *J. G. Baker.*

Cypripedium obscurum, *hyb. orig. obs. ex hort. Veitch.*

This has short ligulate cartilaginous green leaves, 1½ inch broad. The venation is marked by some darker lines. The hairy peduncle is of the darkest black-purple. The light green bract is equal in length to half the stalked ovary. There are some brown lines at the base. Ovary light brown with dark purple ribs. Upper sepal nearly elliptic, apiculate, whitish, with brown nerves. Lateral sepals much shorter than the lip, broad elliptic, apiculate, whitish, with ten rows of dark purple spots, only two reaching the point of the connate body. Petals ligulate, broader at the apex, ciliate, ochre-coloured at the borders, brown in the middle with brown spots at the base. Lip of Cypripedium villosum, darkest purple-brown, ochre-coloured underneath and then with brown spots. Staminodium of Cypripedium villosum, which may have been one of the parents. It was kindly sent me by Mr. Harry Veitch. *H. G. Rchb. f.*

NOTICES OF BOOKS.

A Monograph of the Genus Crocus. By George Maw, F.L.S., F.S.A., F.G.S. With an Appendix on the Etymology of the Words Crocus and Saffron. By C. C. Lacaita, M.A., M.P., F.L.S. (London: Dulau & Co., 1886; 4to, 850 pages, seventy-one coloured figures, and a map.)

We have already announced to our readers the publication of Mr. Geo. Maw's long-expected monograph on the genus Crocus. It proves to be one of the most complete systematic monographs that has ever been written. For the last ten years the author has devoted himself to it, undertaking journeys to Asia Minor, the Levant, Greece, Italy, Spain, the Alps, and Pyrenees, for the purpose of studying the plants in their native localities, and sparing no pains and expense to get living plants together and cultivate them.

The book consists, first, of a section on the life-history and physiology of the Crocuses; secondly, on their classification and sequence; thirdly, a chapter on their geographical distribution, illustrated by a map and two charts, which exhibit their range in latitude and longitude; fourthly, a chapter on the history and literature of the genus; fifthly, a chapter on their cultivation; sixthly, a chapter on the history, cultivation, and uses of Saffron; and after this

* *Æchmea (Hohenbergia) flexuosa*, Baker, n. sp.—Acaulis; foliis 20—30 magnis lanceolatis viridibus subglabris rigide, coriaceis; aculeis marginalibus parvis deltoideis pallidis; pedunculo stricto foliis duplo breviori; bracteis pallidis lanceolatis; floribus in paniculam amplam laxam tripinnatam dispositis, rhachibus furfuraceis ultimis flexuosis; bracteis floralibus nullis; ovario sessili cum calyci glabro pallide rubello; sepalis imbricatis apice mucronatis; petalis parvis rubris breviter protrusis; genitalibus inclusis.

follows the great mass of the work, which consists of a detailed account, and one or more figures of each species. Last of all, there is Mr. Lacaita's learned appendix on the etymology of the words Crocus and Saffron. In the arrangement and limitation of the species the author has deviated but little from the synopsis which he contributed to our columns in 1881 (n.s., vol. xvi.) Under each species he gives, first, its full synonymy, then an abbreviated Latin description, then a full English description of all of the organs in the type and its varieties; and finally, an account of its distribution, history, and any other circumstances of history connected with it.

Crocus is a genus that has specially needed to be dealt with by a monographer. It is abruptly marked off from all other genera, but the sixty-nine species do not cover altogether a wide range of variation, and have to be distinguished from each other often by minute characters taken from all their organs. It is necessary to study carefully the corm and its tunics, the basal spathe, sometimes present, but sometimes absent; the leaves in horizontal section, the proper spathe, the perianth in each species, and the range of its variation in colour, the stamens, the stigma, and the seeds. All this Mr. Maw has done most carefully, upon the living plant if he could possibly get material; and the result of his work is fully recorded both in type and picture. It is a great advantage when the writer and the artist of a botanical book are the same man. The only thing that is unsatisfactory about the plates is, that the colouring of the paler species—the whites and yellows—is far behind that of Mr. Maw's original drawings; but the corm-coats, the spathes, the leaves in section—presenting much variety and elegance of pattern, doubtless serving some purpose in fitting the plants for their conflict with other plants, or as adaptations to various circumstances (see figs. 2, 3, 4, p. 12)—the anthers, and the stigmas, are always carefully drawn. Under many of the species there is a charming woodcut of some Crocus locality—as, for instance, the western range of the Bulgar Dagh, Taurus, under Crocus zonatus; the cliff-perched monastery of Sumila, near Trebizond, under Crocus vallicola; or a view of modern Athens under C. lævigatus. We are indebted to Mr. Maw's kindness for the opportunity of making use of some of these illustrations.

Although the genus extends from Portugal to the Alatau range of mountains in east longitude 88°, the range of the individual species is seldom great. Of the ten species which occur in West Europe and North Africa only one (C. vernus) extends beyond its bounds. In Italy (including Sardinia, Sicily, and Corsica) and the Swiss and French Alps, there are eleven species, of which three extend beyond these bounds. In East Europe, including Turkey, Greece, and the Levant, there are twenty-six species, of which fourteen extend beyond its bounds. In the Oriental district (Greece, Asia Minor, and the Caucasus) there are thirty-two species, of which fifteen extend beyond it. In Syria and Palestine there are seven species, of which only two, or perhaps three, are not endemic. And beyond this, in Central Asia, we get two outlying, recently-discovered endemic types—C. alatavicus and C. Korolkowi, the last gathered abundantly lately by Dr. Aitchison on the Afghan boundary.

The following are the only species not yet brought into cultivation:—C. karduchorum, from Kurdistan; C. granatensis, Spain; C. lazicus, Trebizond; C. Boissieri, Cilicia; C. montenegrinus, Montenegro; C. veluchensis, Greece; C. Gaillardotii, Syria and Palestine; C. hermoneus, Mount Hermon; C. caspius, shores of the Caspian; C. veneris, Cyprus and Crete; C. candidus, Asia Minor; C. Tauri, Taurus range; C. parviflorus, also from the Cicilian Taurus. Of two supposed species, C. serotinus and C. stellaris, the wild localities are not known.

The bibliography is very full and careful. The only mistakes of any consequence which we notice are on p. 43, where it is stated, that in Ker's *Iridearum Genera*, fifteen species are described. In that work there are no descriptions of species. It is merely a catalogue of their names and synonyms. The name mœsiacus was first published by Ker in 1803—not in 1827—and, therefore, it has priority over aureus. We do not think that the species adopted by Mr. Maw are by any means all of equal value. To be consistent with the wide range he has allowed to three old well known types, aureus (mœsiacus), biflorus, and sativus, we think granatensis should be classed as a variety of nudiflorus, Salzmanni of serotinus, Malyi of versicolor, Tommasinianus and montenegrinus of vernus, hadriaticus of sativus, veluchensis of Suberi, dalmaticus of reticulatus, Tourneforti and veneris of Boryi, Balansæ of vitellinus, and Crewei of biflorus.

The following remarks on the cultivation of Crocuses will be read with interest:—

THE CULTURE OF CROCUSES.

"As an early spring garden flower there are perhaps few plants that have such a wide-spread popularity or commercial importance as Crocus vernus. It has been cultivated by the Dutch for at least three centuries; in England the cultivation of corms for sale is of equal importance, though it is limited to a small district. I am indebted to Mr. G. F. Barrell, of Spalding, for a full and exhaustive account of bulb-cultivation in South Holland, Lincolnshire, and extract from it the following notes on the cultivation of Crocuses.

"'The extreme south-east of Lincolnshire is the centre of English bulb-culture. The land has all been reclaimed from the estuary of the Wash, formed by the outfall of the rivers Witham, Welland, Nene, and Ouse, by a process known as warping, which leaves a rich alluvial deposit admirably suited for the growth of every description of bulb or tuber. The tract of country in which the bulb trade finds a home is a small belt some twenty miles in length, and not more than three or four in breadth, extending from Sutton Bridge (which is only divided from the adjoining county of Norfolk by the mouth of the river Nene), through the towns of Long Sutton and Holbeach, to Spalding, which forms the headquarters of the traffic. The yellow Dutch Crocus is the

FIG. 1.—BULGHAR DAGH, TAURUS, THE HOME OF CROCUS ZONATUS: FROM A SKETCH BY C. G. DANFORD, ESQ.

variety most esteemed for profit; although large quantities of the white and blue varieties (of C. vernus), such as David Rizzio, Prince Albert, Queen Victoria, and Walter Scott, are grown. The Crocus requires an open situation, and delights in the full blaze of the sun. The *modus operandi* consists in planting the 'seed,' as it is termed (but which is simply the the small corms, which are too small for sale, and range from the size of a Pea to that of a very small wood-nut), in drills, much in the same manner that Peas are sown. The drills are made about 10 inches apart; and in this soil and climate the very smallest corms will bloom, consequently, as they are usually grown in plots of from a rood to an acre in extent, a field of yellow Dutch Crocus, under a bright sun, when in full bloom is a most gorgeous sight.

"The third year after planting they are taken up (but large seed will be 'fat' in two years), and are sorted; the large bulbs being sent to market, and the smaller ones replanted as seed. The planting is usually done in November, the ripened bulbs being harvested in June. The increase, during the time the bulbs are growing from seed into saleable bulbs, is almost incredible; amounting probably to 500 per cent. in number, and 2000 per cent. in weight."

The increase in number, and probably the increase in weight, named by Mr. Barrell is, Mr. Maw thinks, an excessive estimate; as his experience in growing Crocuses is that in ordinary garden culture they do not increase in such a ratio.

Mr. Barrell proceeds:—

"'From fifteen to twenty millions of Crocuses are, perhaps, annually sold; the price for what are usually denominated in seedsmen's catalogues, 'first sized bulbs,' averages from 5*s*. 6*d*. to 6*s*. per thousand, whilst second and third sizes realise from half to two-thirds that sum. The trade is usually carried on through the medium of "dealers," who purchase the bulbs from cottagers and small farmers, and in their turn dispose of them in bulk to the large seedsmen in London and other places."

"'Large quantities are often exported to Holland, as a year's growth produces a brightness in the skin which, although imperceptible to the majority of mortals, causes them to acquire a higher value in the market. First-rate samples of Crocus corms will weigh twenty-five to thirty-five pounds per thousand, but extra samples may often be found which bump the scale at forty-two to forty-eight pounds per thousand. It is not too much to say that at least nine-tenths of the Dutch bulbs which are advertised annually as "Just imported from Holland," are from Holland in Lincolnshire, and are guiltless of any connection with Holland on the mainland of the continent of Europe.'

"It will be gathered," says Mr. Maw, "from Mr. Barrell's statistics, that the saleable corms of Crocus average from ½ to ¾ oz. in weight; and that the price received by the growers scarcely exceeds 1½*d*. per pound, or about the value of new Potatos. In view of the fact that the small wild corms of several species of Crocus are largely used as food in Syria and several parts of Asia Minor, where they have a regular commercial value, and looking at their nutritious composition, more than half the weight consisting of sugar and starch, their culture and use as an article of food may be worth consideration."

CHRYSANTHEMUM GLOIRE RAYONNANTE.—This is one of the quill flowered Japanese section in which the ordinary flat ligule or strap becomes tubular, so as to resemble a slender trumpet; the outer surface a pale lilac, the small exposed inner face, forming the mouth of the trumpet, deep violet. It has also been called Porcupine and Hedgehog, from a resemblance of the petals to the quills of a fretful porcupine. The variety is a very handsome one, and a coloured figure of it is given in the *Revue de l'Horticulture Belge* for December.

SINGLE CHRYSANTHEMUMS.—We see that some of our Belgian contemporaries are distressed at the possibility of single Chrysanthemums coming into vogue. Well, there is room for all varieties. Let us grow representatives of as many distinct sections as we can get—thethe more the more interesting. As a mere matter of personal taste, we think a single, or Anemone flowered variety is a prettier thing to look upon than a very correct incurved variety, but we do not expect every one else to concur in this opinion.

THE APIARY.

GENERAL HINTS.

By the time this reaches the public eye, the year 1886 will have departed, and the new year dawned upon us. I trust it will be a successful year to all readers of the *Gardeners' Chronicle*, and a happy one to bee-keepers. Bees are now in a state of rest and repose, huddled together for mutual protection and warmth, in the midst and within easy reach of, their well-earned stores. According to all previous experience, now is the best time to alter the position of any hives, and it is quite immaterial whether they are moved little or much. After the long winter's sleep, the bees seem to enjoy a kind of resurrection, and they look about them to find out their position and take their bearings. Besides, some of the bees will, in the spring, have only lately come into existence, so that there will be no loss of bees if the hives are moved now. It will be best to place the hives, if possible, so that they may have a south or south-east aspect. Of course this is not absolutely necessary to success, but experience proves that the early morning sun, shining into the hives, causes the bees to come out early, and it seems to be a fact that the bulk of the honey gathered on any given day is gathered by about the middle of the day. After that time business seems to flag a little, although, of course, some honey is brought in all day long. As I advised last year, the best possible arrangement for hives, especially if room is limited, is what is called the quincunx fashion—that is, arrangement in fives. By this means the greatest number of hives can be placed on a given piece of ground, with the maximum amount of space between each hive.

RAISING OF DRONES.

Our bees have no doubt been improved in many ways by the introduction of foreign blood, and more especially by raising fine queens. In fact, it is quite the fashion now-a-days to treat queens in Spartan fashion, and destroy the weak and imbecile, and put others in their places. It has been thought that because the queen is the mother of all within the hive, to improve her was to improve the whole. This of course is true, but not to the extent usually supposed. Should we think the fine healthy young lady discreet who accepted an imbecile or consumptive individual for a husband? Attention has lately been paid to the poor drone, and endeavours have been made to make him as fine as possible. It has been noticed that some queens lay much better than others, and it has been noticed that the drones from some hives are much larger than those from others. Drones mostly come out in the afternoon to do their courting; and experience seems to indicate that by preventing the smaller drones from courting at all, and only allowing leave of absence to the fine large drones, great good will result to the bee-keeper, because the queen will be more able to keep up the numbers, and so compensate for the great loss of bees in summer time. *Walter Chitty, Pewsey.*

MESSRS. E. G. HENDERSON & SONS' NURSERY.

Many plants are done well at this nursery, and much improvement may be observed in the cultivation of certain classes of plants. It seems as if the cultivation of special subjects would be taken up, and that of others allowed to drop. Foliage plants are preferred, as these adapt themselves with less injury than some others to the rough usage of furnishing and table decoration. Anthuriums, as affording enduring foliage of a handsome form and colour, apart from their quaint inflorescence, find considerable favour, and are very well done here, especially fine being some examples of A. crystallinum, which is a plant found in almost every stove, but which is rarely seen as a presentable specimen. A. Sanderianum and A. Thibautianum were each found in handsome examples.

The species of Dieffenbachia are much grown here, and form stocky robust stuff, the mode of culture for foliage plants adopted—that of giving large quantities of air by means of roof ventilators—favouring compactness in leaf and stem. The rare D. imperialis, a green leaf spotted with lighter green and white, was remarked in quantity. In the Dieffenbachia-house were some nice examples of Anthurium splendidum, brought out a year or two ago by Mr. Bull; these were growing in a close case, and seemed there to be quite in their element, so that, so far as its culture is known to us as yet, it would appear to be a plant not easy to manage without special treatment.

The elegant evergreen Aspidiaceous Fern, Lastrea lepida, described by Mr. T. Moore in our issue of November 27 last, was found in excellent condition. Of this plant, Messrs. Henderson are the sole possessors. Adiantum lunatum is an indispensable basket Fern, of trailing habit; Pteris Layii, a tasselled variety, is very pretty. It is not yet sent out. Ferns generally grow very luxuriantly at this nursery, especially when afforded plenty of rooting space, as in the case of those planted out on the grotto in the show house. Of Crotons quite 200 varieties are grown. The cultivation of these plants has been just taken up, and all are treated on the free ventilation plan, which certainly here produces good results. The plants are furnished with leaves of a tough leathery nature, and extend down to the soil. Freedom from insects is another advantage claimed for the system.

Dracænas are found in great numbers, many of the specimens being the finest in the country. We noticed some fine stocks of D. hybrida, with white and green leaves, the reverse and the midrib and minor nerves being of a pink hue; others of striking colours were Parcelli, Caustoni, Gladstonei, Guilfoylei, and Goldieana. Many Palms of useful size were found, of these Cocos Weddelliana and Kentias seemed to preponderate.

In Bignonia argyrea and B. villosa, both with handsome coloured foliage, two striking stove climbers were seen. Hæmanthus Catherinæ was being largely increased by seed, and many old plants were observed with trusses of seed-pods of 10 inches in diameter.

PLANTS AND THEIR CULTURE.

PREPARATIONS FOR POTTING.

The commencement of the year is an opportune time to make a retrospect of the past one, so that both successes and failures may be brought to mind, and as far as possible the causes of the latter fathomed. An excusable error is not unfrequently made by cultivators attempting to grow too many, as well as unsuitable subjects for the convenience at their command, and errors of this kind usually have their concomitant results. An estimate of future wants, and the mode of meeting them, should also be considered, and arrangements made for any alterations that may be in contemplation, in order to avoid hindrance during busy times. The beginning of the most important part of the potting season being at hand, preparations for this work should be made. The various materials, such as loam, both light and heavy, peat, leaf-soil, manure, &c., may, if not already done, be placed under cover, so as to be in a suitable condition when required, while pots and crocks should be washed clean during bad weather.

INSECTS ON PLANTS.

Another operation which needs timely attention is the destruction of injurious insects. Plants infested with these should be thoroughly freed from them before being repotted, as they then can be left undisturbed until new growth has commenced. In cleansing a house of plants the structure should first have attention, and then the plants individually, keeping those that are free from insects apart from those that are dirty, until the work is completed. Insecticides are now numerous enough, and most of

them can be obtained accompanied with reliable directions for use.

BOUVARDIAS, &c.

Bouvardias that were set apart for supplying cuttings and which have been kept dry for some weeks in greenhouse temperature with that intent will be in a fit state to be cut back to the matured wood; this done, they should be watered and afforded stove temperature, and be daily syringed to promote a free break into growth. The cuttings should be taken when about 2 inches in length, and inserted in small pots containing fine sandy soil, in which they will readily take root if plunged in shallow boxes covered with panes of glass, and placed in a Cucumber-house or equally warm place.

As soon as the blossoming period is over, plants more than one year old, unless required for special use, may be thrown away; those younger, if rested and afterwards headed down will form excellent material to grow into large plants for cutting from and for decorative purposes. Out of many kinds we have cultivated, including both the double and single forms, uone have proved more useful than the two old single varieties Hogarth and Vreelandii. *Thomas Coomber, Hendre Gardens, Monmouth.*

AMATEURS' NOTES.

[WE are indebted to a distinguished amateur for the following notes. We trust others of our readers will follow his example, especially as to cultural matters. ED.]

ORCHIDS.

LÆLIA ANCEPS HILLIANA.—This attractive variety appears to have flowered very freely in most places this season, but all the examples I have seen have been scentless.

Mr. Hill, after whom the plant was named by Prof. Reichenbach, informed the writer that the original plant was distinctly and remarkably fragrant, but that he did not know another specimen which resembled his plant in this respect. It would be interesting to learn if other growers have observed this peculiarity. The wonderful mass shown by Sir Trevor Lawrence at South Kensington in flower, and which is probably the largest known specimen, is certainly devoid of odour, though in all other particulars corresponding with the description.

LÆLIA ANCEPS VIRGINALIS.

This lovely variety shows itself quite distinct from the beautiful white L. a. vestalis flowered by Sir Trevor Lawrence in 1880. There is an entire absence of the purple lines in the throat, nor is there the faintest trace of colour except a little pale sulphur yellow in the disc and on the tips of the three crests. The white is of dazzling purity, the flowers large and of good substance, the petals broader than in ordinary forms of anceps, but less so than in Dawsoni, which still remains the best and roundest-shaped Lælia anceps known. The plant was exhibited and received a First-class Certificate at the December meeting of the Royal Horticultural Society, where it was greatly admired. It differs in growth from the ordinary L. anceps in having very compressed rounded bulbs and a bright, almost emerald, green foliage, dwarf and round, and free from any tint of glaucous green. The lip of the flower is acute and not emarginate as in L. a. vestalis.

There are not many plants flowering this season out of the great importations of hybrid or white Lælias of two years ago. Curiosity is on the alert to see if our old favourites are to be beaten, and what new varieties may be in store for us. Messrs. Veitch have several of these unflowered plants now in sheath; probably Mr. Sander also has some surprises developing among his large collection, while in the country Messrs. F. Horsman and Messrs. Backhouse are both reported to have one or more plants of these imrortations showing flower-spikes. Baron Schroder may also be expected to prove at least one of his purchases, but the other flowering pieces are few and far between, showing that these Lælias take longer to establish than is generally credited, and, I am inclined to think, they require rather more warmth than suffices for the ordinary L. anceps, especially in the growing season. The plants of the variety called Schroderi are very troublesome to establish, and I have never seen one at all vigorous or free, or even satisfactory. It is, as far as we know, the most difficult of all to manage, and is likely to remain very scarce. *An Amateur.*

BEE-FLOWERS.

IT is interesting to me to have confirmation of my experience of the value of Erica carnea as a bee-flower. Growing this beautiful vernal Heath extensively for decorative purposes, I have observed for many years past that bees frequent it as soon as its blossoms open, but this does not take place in the North Midlands until March or April, unless, indeed, the season be abnormally early. It is somewhat presumptuous to dispute the accuracy of an observer of such eminence as Müller, whose observations in Switzerland led him to the conclusion that bees would not reach the malodorous secretions of Erica carnea, knowing the quick perception of the honey-bee in regard to honey-yielding flowers. I have concluded that either Müller must be mistaken, or that there exist varieties of E. carnea functionally different to the kind we cultivate, or bees that labour under a like disadvantage. I have gathered Erica carnea, or herbacea, in the mountains near the Lake of Thun, and comparing specimens of our cultivated kinds I cannot distinguish any difference. Your correspondent, "Contingensis," writing from the South of Ireland, enjoys climatic advantages that do not reach England, and his teaching has rather a local than a general significance and application. Except in nursery gardens, Erica carnea is not to be found anywhere about Matlock. It is not native there. Bees are not invariably attracted by sweet-scented flowers. Daphne Mezereum has both colour and fragrance, but it is not the most tempting flower to bees, and it is shy of removal and of difficult culture, and would be too expensive to an amateur bee-keeper whose indulgence in an apiary happened to be directed by considerations of ultimate profit. Too great a variety of bee flowers is not desirable, but a regular succession is eminently so, from spring until autumn.

Winter Aconite (Eranthis hyemalis) is many visited by bees in early spring, as are Crocuses, Scilla sibirica, Arabis albida, Aubrietia græca, and Wallflowers, all easily grown and hardy plants. Then a great breadth of Limnanthes Douglasii should be provided. The blossom of Gooseberries, Currants, and Raspberries, though unattractive as regards colour, divert the attention of bees from all the brighter flowers about. Oddly enough, two apparently tempting flowers, Sweet Alyssum and Sea-kale, are passed over unvisited by bees.

Nearly all the Borageworts are useful bee-flowers. Marjoram, Thyme, and Horehound are invaluable in their season, and I can indorse the recommendation of your correspondent in regard to Melilotus officinalis and alba—it is the blossom and not the seed that has the fragrance he describes. It is a late summer blooming plant and a biennial, and growing very tall, requires ample space. It is a great honey plant.

While on the subject of bee-flowers let me remark in reference to the recommendation of R. Veitch & Son of Impatiens glandulifera, that my experience as to the value of this plant as a bee-flower is totally at variance with theirs. It is a handsome, free-growing and blooming plant, but honey-bees, when they have any other flower to pasture on, never approach it. It abounds in pollen, but even that does not tempt them. The larger humble-bees find something in it congenial to their tastes, and casual observers may have been led astray by the frequency of their visits to it. I have for several years past advocated that the cultivation of bee flowers should be pursued coincidently with the extension of the bee-keeping industry. I practically and successfully proved it last season both in the quality and quantity of honey. *W. Ingram, Belvoir.*

INDIA.

SAHARUNPUR.

WE have received a copy of Mr. Duthie's annual report of the Botanical Gardens under his charge at Saharunpur and Mussoorie (N.W. India). From this we learn that Strawberry culture is rapidly extending in the neighbourhood of the former place. Malta Oranges and Mango grafts are also in increasing demand. Encalypti seed freely, and thus render the garden independent of Australian supplies. The rainfall was no more than 37.4 inches, though that amount is above average. Much attention is given to plants of agricultural importance. Experiments have been tried to hybridise the Malta Orange with pollen from various kinds of Lime and Lemon. In many cases it is found that these flowers are self-fertilised in the bud. A very interesting part of Mr. Duthie's report relates to the plants that will grow in the salt plains or "reh" districts. Prosopis spicigera among trees, and Sporobolus tenacissimus among grasses (where protected from cattle), do well, and it is intended to try two kinds of Date Palm, said to be suited to the soils of this description.

"THE TEA PLANTERS' MANUAL,"

by T. C. Owen (Colombo, Ferguson), may be recommended to intending Tea planters as containing a *resumé* of information on the cultivation and manufacture of Tea, which will be very useful to intending planters, as supplying hints for practice. It appears that while we in the home country consume an average of nearly 5 lb. a head in the entire population, our fellow subjects, the Australian and New Zealand Colonists, require over 7 lb. per head; while in the United State 1.30 lb. a head suffices, and in Spain 0.01 per head per annum is found sufficient. A rich but friable soil, a rainfall of not less than 100 inches, absence of shade, and a temperature never below 40° F., are the principal requirements. Pruning is done with the view of securing "flushes" of young leaves from the comparatively new wood.

AGRI-HORTICULTURAL SOCIETY OF INDIA.

A portrait of Mr. Blechynden, who has been associated with the Society for fifty years, has been hung in the Metcalfe Hall, Calcutta, the scene of his life-long labours.

HOW TO USE GAS-LIME.

THIS substance should be freely exposed to the air for two or three months before applying to any soil on which is a growing crop, because, besides many sulphides, it contains a compound of sulphur and cyanogen, that is very deadly to plants. In anticipation of a Turnip crop, it may be applied to the fallow up till, say, February, which would allow sufficient time for oxidation to alter the poisonous qualities of the cyanogen. It is, perhaps, best to slightly harrow it into the stubbles after they have been ploughed, because in this case the ammonia—or a portion of it—resulting on the conversion of the cyanogen will be retained in the soil if there is in it lime, salt, kainit, or substances containing bases on which the ammonia can form as nitrates. This simple view of it may be borne in mind in making it into composts, for unless there are substances on which the ammonia can form, it will combine with carbonic acid and escape into the air. The compost should therefore contain a little superphosphate, salt, or kainit, or even a small portion of old lime. But in making a compost heap it must be kept well away from a growing fence or the roots of valuable trees, or it will kill them.

I may add that in my experience it is the most effective substance that is to be had for the destruction of fungoid and insect pests in the soils, and applied to the fallow as above, at the rate of about 5 tons per acre, there need be little fear of finger-and-toe. "*Farmer*," *in the* "*North British Agriculturist*."

ROSES.

ROSES, STANDARDS, DWARFS, AND AUTUMNAL ROSE SHOWS.

"WILD ROSE" writes so charmingly upon Roses that it is with reluctance one differs from him. But, somehow, I cannot help it. Whether this arises from his ultra *ex-cathedra* style or not I cannot tell. Few things are more provocative of opposition than "Wild Rose's" latest pronouncement anent standards (p. 782, vol. xxvi.). He disfranchised them many years since, and lo! they have disappeared. Even Canon Hole's semi-classic Briermen, sneaking into church to find a job, have vanished, as have also the quarters of standards we used to see. Well, as to that, it seems some rosarians, like their weaker brethren of the rank and file of common humanity, have the faculty of seeing only what they wish to see; and thus it is that those who sleep with only one eye open may see wonderful brakes of standards still, and up and down the country, and are likely to do so for a good many years to come, notwithstanding "Wild Rose's" disfranchisement and his assertion that it has disappeared, carrying off its mop-headed acres of ugliness out of sight for ever.

Well, on the principle of speaking well of the dead, let me add that the veteran rosarian, suffering from rheumatics or set fast with lumbago, and not a few elderly gentlewomen who have loved Roses all their lives, will miss the live sticks that raised the Roses up to their level, obviating the necessity for them to stoop to conquer.

But "Wild Rose," not content with hunting standard Roses out of the garden with anathema on their ugliness—the unkindest cut of all—also reasons as if they were too tender to live, cannot be protected, nor rise up Phœnix-like from their ashes—I beg pardon, snow line—like dwarf Roses.

But with all due deference to "Wild Rose," the time of cold is of far more importance in this connection than the snow line, as the former will be found rather hugging dwarf Roses on the surface than killing standards at the higher, and, on the whole, warmer coigns of vantage—a yard or more above the surface. Besides is it not as easy to throw dry bracken into the head of a standard as to muffle up a dwarf with a forkful of litter? The former is equally effective—probably more so, from its dryness, than the latter, and has carried thousands and tens of thousands of standard Tea and other tender Roses through some of our severest winters—Margottin's unique and unassisted slaughter of the innocents notwithstanding. As to dwarfs, though the standards are not yet *hors de combat*, these are no doubt increasing, and the more of them the better. I have always contended there is room and place for both in most gardens, and there is therefore no reason to pit the one against the other, as if one must of necessity usurp the place of the other, and the two exist, if at all, in the same garden at daggers drawn. Far different is it in fact and everyday experience, where, instead of stiff mops and bare sticks, acres of ugliness, may not seldom be found standard Roses sweeping down living showers of grace and beauty on the dwarfs at their feet, the latter in their anxiety to return the compliment climbing up and mingling their uprising beauty with the drooping standards.

On the whole I agree with "Wild Rose" on the vexed question of stocks. It would be a misfortune to discard either the seedling Brier, Brier cuttings, Manettis, Polyantha, La Grifferaie, or any other stock that has proved useful. In the hurried race of manufacturing Roses there will probably be room enough for all for many years to come. The sudden perishing of the Manetti has also been greatly exaggerated. Mr. B. Cant's statement at the annual meeting of the Rose Society, of Roses on the Manetti lasting twenty years, may suffice to reassure alarmists on this head. A better or more trustworthy authority could hardly be cited.

As to the autumnal show of Roses at Edinburgh possibly "Wild Rose" refers to a different exhibition. The one I referred to was an International show, and I was not only there, but helped to judge the Roses, and therefore ought to know something about this. And I have no hesitation in saying that many of the blooms and whole stands were quite equal to not a few seen in June or July. Neither was it needful to go so far for a case in point. For over twenty years I have been familiar with Roses in September and even in October, of excellent quality.

But were it otherwise, the fact would furnish us with an additional argument in favour of holding Rose shows in the autumn. Hitherto, comparatively little has been done in this direction, though autumnal Rose shows are by no means the *raræ aves* nor the dismal failures "Wild Rose" assumes. When rosarians concentrate one half of the time and talent now devoted to show flowers in June and July to the development of perfect blooms in August and September, or even October, and fail, it will be time enough to counsel the keeping of our modest autumnal beauties at home. As a garden and show flower I was quite aware—when I cited Gloire de Dijon as a fair sample of the first, and A. K. Williams of the second—that the first was occasionally shown, and A. K. Williams, and indeed any other Rose, can be grown as a garden Rose.

Still I consider this capital representative of that flower, Gloire de Dijon, equally good as a climber or a bush, and A. K. Williams, or any Rose, will climb if you will help it with a nail and a thread or a tie, and do not cut it back; so that I fail to see anything unfair in citing Gloire de Dijon as a fair sample—the first in existence, in fact—of a garden Rose, and A. K. Williams as one of the very best exhibition ones where it will grow, which is by no means everywhere. *D. T. Fish.*

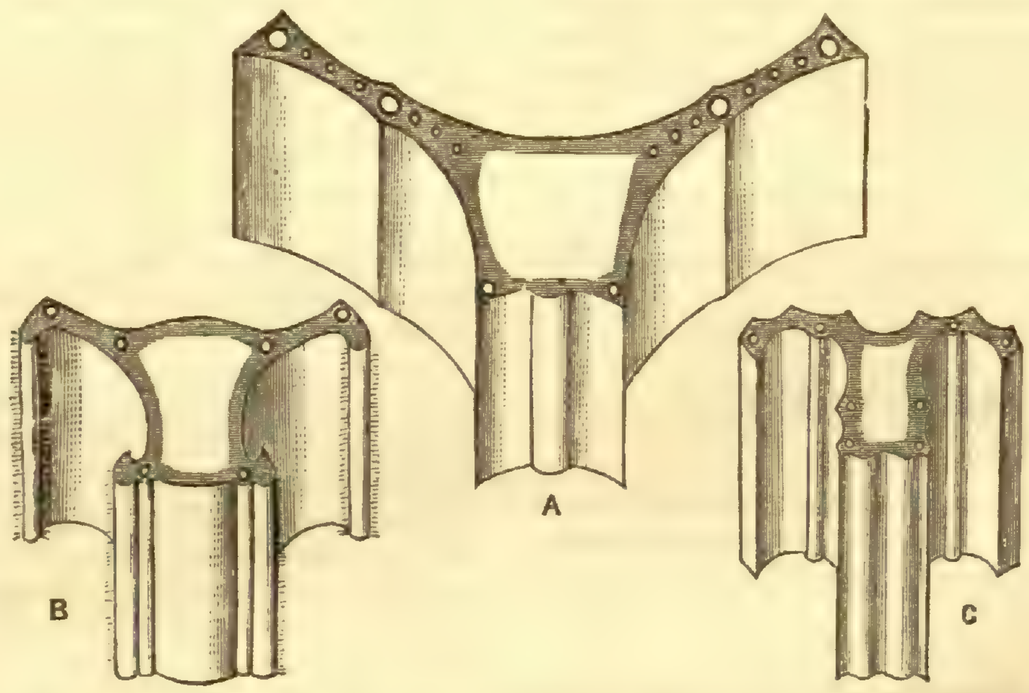

FIG. 2.—LEAF SECTIONS MAGNIFIED: A, CROCUS VERNUS; B, CROCUS SATIVUS; C, CROCUS NUDIFLORUS.

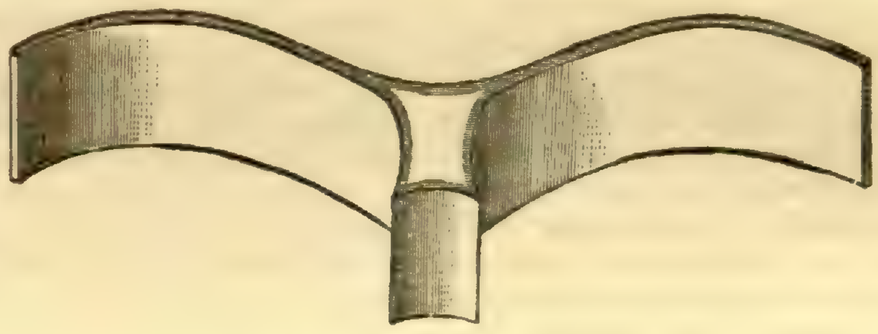

FIG. 3.—CROCUS IRIDIFLORUS.

FIG. 4.—A, CROCUS VALLICOLA; B, C. NEVADENSIS; C, C. CARPETENSIS. (SEE P. 9.)

BILLBERGIA VITTATA.

A WELL grown plant of this Bromeliad is a conspicuous object in the depth of winter, when flowering stove plants are by no means over plentiful. A figure in the *Belgique Horticole*, 1871, 14, shows the habit of the plant, but a better idea of its beauty can be gleaned from another figure, plate 15, where a shoot is drawn to a much larger scale. A large plant with several crowns, all flowering at once in the Victoria-house at Kew, makes one regret that the flowers of this class of plants are so perishable and ephemeral in their duration. This seems to apply to the Billbergias in particular, as the bracts and calyx in the closely allied genus Æchmea, often remain for a considerable length of time. The foliage in the present instance is rather rigid and devoid

of gracefulness, but compensates for this deficiency by its glaucous hue, and the transverse, grey, scaly bands from whence it derives its specific name. One of the several synonyms given to this plant, namely, B. zonata, also refers to the character of the foliage. The bracts clothing the flower stems are both numerous and large, of a deep, rich, brick-red, suffused with scarlet. The sepals are tipped with blue while the petals are wholly of that colour as well as the stigmas, which contrast well with the orange anthers. The whole inflorescence assumes a graceful drooping habit, contrasting handsomely with the upright foliage. The plant is epiphytal on trees in its native habitats in Brazil, but may be grown successfully in pots in a mixture of peat and fibry loam, with a fair admixture of sand to ensure a perfect drainage of the superfluous moisture. On the Continent a compost is made up consisting of wood, peat, potsherds, charcoal, and living sphagnum. This might be attempted with profit and success in this country, considering the epiphytal nature of the plant. *W.*

WEEVILS DESTRUCTIVE TO CYCADS.

IN the *Gardeners' Chronicle* for May 21, 1870, the late Mr. Andrew Murray published an article with illustrations upon a species of weevil from South Africa which had been found to be very injurious by feeding, in the larva state, upon the dilated stems of different species of Encephalartos imported from Natal by Mr. Bull. To this insect the name of Phacecorynes funerarius was given by Mr. Murray. It is, however, very closely allied to one of the Calandrides, to which the name of C. Zamiæ was applied by Fabricius, a species which also attacks the plants of the genus Zamia in South Africa.

The beetle described by Mr. Murray is about half an inch long, and its larva is distinguished by its appearance, which Mr. Murray well describes as a fat, well-fed, little pig-like grub, the back being very much swollen and rounded, and the body terminated by two recurved semi-fleshy hooks on the last segment Another peculiarity of this larva is that it does not form when about to assume the pupa state a cocoon of the fibres of the plant on which it feeds, as is the case with the larvæ of several other known species of Calandrides, such as the Calandra Sacchari of Guilding; the little destructive grain weevil, Calandra granaria (of which the larva is very much swollen in the middle of its body, which is not, however, terminated by recurved hooks or other terminal appendages), does not form a cocoon. In these different respects the larvæ of these Calandrides differ from those of many other weevils, which have the larvæ more cylindrical, although somewhat arched; they all, however, are without legs, which is the general character of weevil larvæ.

In the course of last autumn we received from our esteemed correspondent, M. Puls, of Ghent, many specimens of the Calandra (Phacecorynes) Zamiæ, which proved very injurious (in the stoves of the horticulturists of that famous horticultural city) to Zamia villosa, from the neighbourhood of Natal.

These were accompanied by a second insect, which had also been found equally injurious to Cycads of the genus Zamia, and which, on inquiry, proved to be the Zamia corallipes (Hook.), a native of Australia, and, in like manner, the second insect proved to be a native of the same region—Western Australia. This insect, however, differs entirely from the Calandrides in its general character, and has a more close relationship with our common Otiorhynchi, its nearest ally being the genus Iphipus, which is also Australian, with the perfect insects. M. Puls also sent a large portion of the stem of the Zamia corallipes swarming with the larvæ of the beetles, which had made cylindrical burrows into it in all directions. A portion of the external part of the plant is represented in our woodcut (fig. 5), showing the woolly terminations of the side shoots, and the holes made by the larvæ.

These larvæ, one of which is represented of the natural size in the upper portion of our woodcut, will be seen to resemble many of the more usual grubs or larvæ of the weevils, given in various weevil articles, such as that of the nut weevil, or the Otiorhynchus, &c. (as represented in our volumes for 1841, 1842, 1853, 1864, &c,), in not having the middle part of the body swollen into a hump, and in having the extremity of the body quite simple, entire, and destitute of the curved spines or other terminal appendages of some of the Calandra grubs. Another peculiarity of these Australian larvæ is, they do not

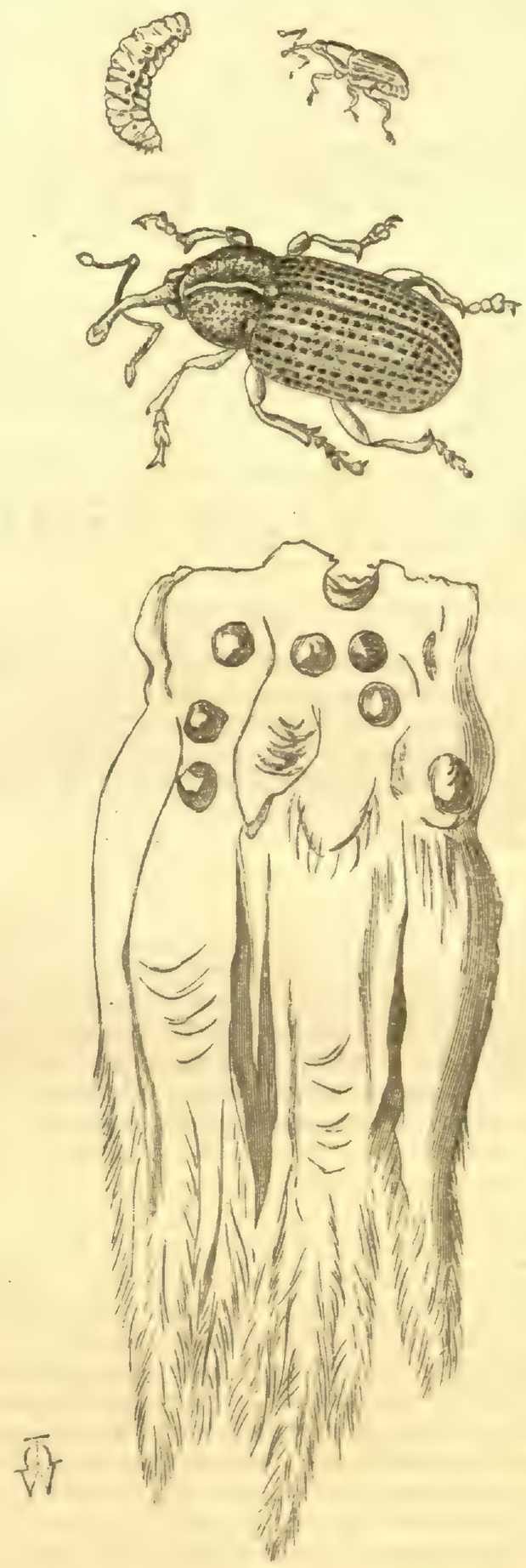

FIG. 5.—PORTION OF STEM OF ZAMIA CORALLIPES, SHOWING THE BURROWS MADE BY THE LARVA OF A BEETLE (TRANES).

form a cocoon of the fibres of the plants on which they subsist.

The larva of the Australian Cycads is white, with a chestnut-coloured head. The perfect insect was described by Mr. Pascoe (a gentleman who has devoted much attention to the exotic Curculionidæ) in the *Transactions of the Entomological Society of London*, under the name iof Tranes internatus, as a native of Western Australia. It is represented in our woodcut of the natural size, and magnified. It is black, slightly glossy, the prothorax and head thickly punctured, the elytra rugose, with rows of rather deeply impressed punctures; the prothorax has a raised, smooth carina, extending down the centre to the base of the scutellum; the legs in our specimens are pitchy-black, and the thighs are neither notched nor spined. The insect varies from 10 to 12 millemetres (about half an inch) in length, exclusive of the rostrum, which is about the length of the prothorax. *I. O. W.*

CULTURAL MEMORANDA.

DESIRABLE BULBOUS PLANTS.

AT this season it may be useful to draw attention to one or two highly desirable subjects, which in the majority of cases are neglected, either owing to ignorance as to their merits, or from forgetfulness at the proper planting season.

FREESIA REFRACTA ALBA.

Wherever Liliums can be grown, this unique and bulbous plant will succeed well. Potted five or six bulbs in a pot into rich turfy loam, and placed under a shallow covering of cocoa-nut fibre in a cold pit, it may there remain until required for placing into the greenhouse for growth and flowering. By potting the bulbs in successional batches, a succession of blooming plants are readily assured. The flowers are very fragrant, and have the property of keeping long in water, hence they are very desirable for the decoration of epergnes, &c. Another variety, F. Leichtlini, is desirable, but has the disadvantage that the flowers fade into a yellow tint; a useful hybrid also exists.

EUCOMIS PUNCTATA

is a somewhat peculiar looking plant, with leaves somewhat resembling those of the Hæmanthus, but smaller. It annually—generally during the month of August—pushes up one or more bloom-spikes, in shape somewhat resembling a Hyacinth, the flowers being different in form, however, and of a waxy-white and slightly green tint. At the apex of the stiff or erect flower-spike a tuft of leaves generally forms. The flowers are very fragrant, and last moderately well. The name of the plant is derived from the Greek *eukomes*—beautiful haired, in reference to the tuft of leaves already referred to. A native of the Cape of Good Hope, it is comparatively hardy: plants of it have been known to maintain health and to bloom annually when planted at the foot of a wall with a south aspect. It grows well in sandy peat and loam, and needs not to be disturbed when grown in a pot, oftener than once in two years, provided the drainage be good.

NERINE FOTHERGILLI.

Fothergill's Nerine and several other species are very desirable half-hardy bulbs. Few plants withstand rough usage and neglect as they do, yet live and bloom annually nevertheless. Potted and grown on freely during the months of winter they rarely fail to flower during the following summer. A stiff loam suits them best.

TRITONIA AUREA.

A much neglected plant, owing to want of a better knowledge as to its requirements. Though the flowers are yellow, as the name implies, it is very useful from the fact that it blooms during the end of July and early in August, when flowering plants of a varied character for conservatory decoration are scarce. To grow it successfully it must be treated as an evergreen plant. So soon as the flowering season is past, turn the soil out of the pots and select many of the long rhizomes for potting into a rich compost; repotting the old growths into similar soil also. By keeping them watered, the plants will, under this mode of growing them, form growths with bloom-spikes 3 feet long, as against ordinarily grown ones of 1 foot only.

CHIONODOXA LUCILIÆ.

This lovely new plant, introduced by Mr. Maw, has been often referred to in the horticultural Press. Its lovely colour and great freedom of blooming, added to the low price charged for the bulbs compared to its near ally, a much older plant, precludes our omitting it here. Whether for pot culture,

placing nine or ten bulbs in a pot, or for the open border planted in patches, or rows, it is equally suited, and should find a place wherever Scillas are appreciated. A self-coloured dark blue variety or species named C. sardensis is also procurable, having somewhat larger foliage, though it is not likely to supersede the lovely Luciliæ. *Wm. Earley, Ilford.*

COCKSCOMBS.

The large, striking, crested Cockscombs will long remain favourite exhibition plants, because they are so bold and showy, and the inflorescence—when a good strain is well grown—bears such an extraordinary proportion to the size of the plant. When finely cultivated, Cockscombs exhibit in a large degree the skill of the gardener; when they are badly grown they are fit only for the rubbish-heap. Some gardeners make a specialty of the Cockscomb, and grow it to a great size. Among them is Mr. T. Lockie, the Gardens, Oakley Court, near Windsor, who has every summer a remarkably fine display of this—what has been well termed an "old-fashioned oddity," and who grows the "combs" to a large size on quite dwarf but very stocky plants.

I have often speculated on what the Cockscomb was like when it was first introduced from Asia in 1570. It was well named Cockscomb, because there is an extraordinary similitude between a small inflorescence and the comb of a cock. But our forefathers understood its culture well, and grew splendid specimens. The *Floricultural Cabinet* for 1834 contains a paper by a grower of this plant, who states that he had grown plants not more than 9 inches high, the combs from 1 foot to over 18 inches in length, and the breadth of the combs from 6 to 9 inches. It would be very difficult indeed to beat this record in these days of advanced floricultural knowledge. Moreover, this cultivator states that when the comb was opened the extreme length was 35 feet.

There appears to be very little difference between the method of culture adopted now and that followed fifty years ago. Mr. Lockie sows early—by the first week in March; and he states that if the seed be sown earlier the plants are very liable to become stunted, and if sown later, say in April or May, they are apt to run up with a long stem which spoils their appearance. The seeds can be raised in a hotbed, the seedlings be pricked out singly and early in very small pots, and then be shifted on as required so as to encourage growth without any check, and keeping the plants in the hotbed until the combs are formed. It is well not to shift into a size beyond an 8-inch pot, and when the plants become pot-bound, the massive combs are formed. Many growers allow their plants to remain in the seed-pans too long, until they become tall and spindly, and then they are practically useless. In the same way many Balsams are spoiled. Some growers adopt the practice of "pricking off the young plants into boxes and then starving them somewhat, so as to promote premature production of combs, and then selecting the best to grow on for decorative purposes."

Fifty years ago the seedling plants were potted singly into 60-sized pots as soon as they were large enough to handle, and they were placed as near the glass as possible, and the plants kept in them until the combs began to show themselves; and the opinion held then was that those which commenced to show themselves first were always of the best shape: the later plants produced those that were least symmetrical. As soon as a good crown was formed, the plants were shifted into 48-sized, and still kept near the glass; any side shoots being removed. But the pots in which they were finally bloomed were smaller than those employed generally for exhibition specimens in the present day, but they had liquid manure given them when the plants became pot-bound, which augmented not so much the size of comb as its brilliancy of colour.

Plants of tall growth are sometimes seen to be producing combs of fine quality; and when this is the case they can be cut off with a few leaves adhering and struck as cuttings in a hotbed, when they make roots with surprising rapidity. The cuttings should be put into pots a size smaller than those in which the plants are growing, and in this manner excellent combs can be produced on dwarf plants.

Mr. Lockie, as a successful exhibitor, lays great stress upon the seed being sown at the time named above. He states that in his experience he has known fine strains of Cockscombs unfairly condemned through sowing the seeds at improper seasons. There are then three important points to be observed in Cockscomb culture:—1st, sow the seed the first week in March; 2d, prick off the young plants as soon as possible, to keep them from being drawn; 3d, keep them shifted as required, thus growing them vigorously, at the same time near the glass to maintain them dwarf and stocky, and the leaves large, well developed and healthy. A good compost for Cockscombs will be found in one half turves, the other half to be made up of well-decayed manure from a spent hotbed, and some good leaf-mould. It is not necessary to sift this finely, and let the pots be well trained. *R. D.* [Some of the old growers used to cut off the tip of the fleshy tap-root at the second shift to induce the formation of lateral roots. Ed.]

THE HARDY FRUIT GARDEN.

GENERAL DIRECTIONS.

The most important operations at this time of the year are the planting, pruning, and training of the trees, of which work, owing to the severity of the weather experienced lately, much will yet remain to be done. Advantage should be taken to wheel the manure on to the fruit quarters, leaving it in heaps till the pruning is completed before spreading and pointing it in. In planting trees on walls, I would recommend that the old soil be taken out to the depth of about 18 inches, and to about 6 feet distant from the wall, but where the borders are well drained nothing further will be needed in the way of drainage; still in heavy adhesive soils great care should be taken to put the drainage in perfect order before beginning to plant. When planting trees spread some fresh loam over the bottom of the hole, which latter should be larger in area than the stretch of the roots, spreading the roots out and covering with some more fresh loam, keeping the stem a few inches away from the wall. I generally use about three barrowloads of fresh soil to each tree, if small, then fill in with the best of the staple soil, leaving the worst to be spread about on the surface.

Where Pears on walls are very aged, and only bear fruit at the extreme ends of the branches, I would plant young trees each side of the old stem, about 8 feet away from it, and cut away some of the lower branches, to allow sufficient room for the young trees, and cut others away as room for extension is required, and so eventually work out the old trees. By doing this there is a crop of fruit obtained from both old and young trees, and all the wall space is filled; whereas, if the old trees were at once removed, it would take some few years to fill the space again. Where the walls are buttressed and planted between, the old trees would have to be entirely removed before planting fresh ones; but in the case of there being many old unfruitful trees, if a few were replaced annually by young ones the loss of fruit would not be very material, and there would be the advantage of securing trees of various ages.

Small Fruit Bushes.

All vacancies should be made good among bush fruits, of which a good number of young ones should always be grown, and when planting fresh fruit quarter is contemplated, it should be taken in hand as soon as the weather and soil are suitable; the ground for this purpose should have been trenched some time ago.

The Orchard.

In planting trees here I would make holes to about 11 inches in depth and 6 feet in diameter, chopping the turf and returning it to the bottom of the hole, and use about a barrowload of fresh loam wherewith to cover the roots, and proceed as directed for wall trees. The bare patches of soil can be sown in March or April with fine grasses and Trifolium minus, so as to present a uniform appearance. *Edward Ward, Hewell, Bromsgrove.*

THE NOVELTIES OF 1886.

In reviewing the gains which horticulture has secured during the past year it seems but natural to advert to the plants which have received the certificates of either the Royal Horticultural Society or the Royal Botanic Society, as they have been tested by an amount of scrutiny to which other new or reputedly new or recently introduced plants have not been subjected. Many of these latter are well worthy of keeping company with the best I am aware, of such, for example, is that beautiful and interesting hybrid of Messrs. Veitch, Lælia Batemanniana, and of such are many other new Orchids, of which the dried flowers and descriptions bear witness; but let them wait their turns.

Orchids.

Cattleya Lawrenceana has proved itself a worthy new plant; C. Reineckiana, certificated to Messrs. Hugh Low & Co., is a welcome addition to the large-flowered, light-coloured Mossiæs; the C. Mossiæ splendidissima, also of Messrs. Low, perhaps the largest and richest coloured of the species, and the C. Mossiæ Silvia of Mr. Douglas, a very pretty and distinct form. Of Trianæs, only two varieties were certificated, but they are both very fine; the C. T. Schröderiana being in form and size of flower and colour of lip second to none; and the C. T. Ernesti of Mr. R. I. Measures, a bright novelty with flower generally good, and with the addition of rich crimson markings on the petal tips. C. gigas (Hill's var.) is a fine form, very rich in colouring; the C. speciosissima, Fairfax of Admiral Fairfax, a grand flower; and the C. Eldorado virginalis of Mr. H. M. Pollett, a chaste white and fragrant variety.

The certificated Odontoglossums necessarily get fewer each year, as the standard of merit is raised. If value has anything to do with merit, some of these of this year should be superb, for three of them realised in the aggregate over £400. Foremost among them must be placed Baron Schröder's O. crispum apiatum, a grand flower in size, substance, and marking; next comes O. c. Hrubyanum, of Baron von Hruby, very like the preceding, but not quite so good; O. c. Mrs. Dorman, a fine white, completes the certificated crispums of the year, and I do not think that any who know the large number submitted will accuse the committee of the Royal Horticultural Society of being thoughtless in their awards—indeed, an analysis of the year's transactions proves that the same care has pervaded their judgment in all sections of plants. O. Pescatorei excellens, Knox's var., is a grand yellow and crimson-spotted form; O. P. Vervaetiana of Vervaet, of Ghent, a pure white, with heavy violet markings; O. mulus Courtauldiana of Sydney Courtauld, Esq., a fine yellow-grounded crimson-blotch flower, of great fragrance; and O. luteo-purpureum leucoglossum, and O. Ruckerianum marginatum of Messrs. F. Sander & Co., of special merit. During the year that unquestionably pretty scarlet Masdevallia racemosa Crossi (first exhibited by J. Fellows, Esq., of West Bromwich), was certificated to Sir Trevor Lawrence, who exhibited a very neat specimen of it. The Dendrobes are represented by D. Williamsianum, a very beautiful species, exhibited by Mr. B. S. Williams, of Holloway, in July, and greatly admired by all; D. Wardianum crassinode from Baron Schroder's garden, with its nearly 3 feet pseudobulbs furnished with large waxy-white magenta-tipped blooms, appears to be just inermediate between the two species compounded in its name and D. Leechianum, about which so much argument has been; when properly grown, flowered, and exhibited by Mr. Wm. Thompson, of Clovenfords, received an unanimous award. The Angræcum aviculare of Sir Trevor Lawrence is one of the prettiest and purest white of

the long, drooping spiked Angræcums and Cyrtopodium Saintlegerianium, as exhibited by Mr. A. H. Smee, shows a very high development of C. punctatum. The Cypripediums bring us the very curious and interesting C. Sanderianum; C. Wallisii, a fine species of the C. caudatum group, known to science for many years, but beautifully flowered last season by William Lee, Esq., from one of Messrs. Sander's importations. C. callosum a pretty introduction of Mr. William Bull's, from Cochin China. This has the foliage of C. barbatum, the size of flower of C. Lawrenceanum, with that purity of white and crimson in the upper sepal which is to be found in C. purpuratum. C. Hyeanum is an interesting form, and is probably a green variety of C. Lawrenceanum. Phaius Humbloti, exhibited by Sir Trevor Lawrence, proves to be a very handsome species. Mr. B. S. Williams' Lælia purpurata bella. is neat and pretty; Southgate's variety of Oncidium macranthum, the richest yet flowered; Lælia anceps virginalis, sent by F. A. Philbrick, Esq., the largest and purest white form of anceps, bearing no colour except a tinge of yellow in the lip; and Baron Schroder's Vanda Dearei, an unexpected acquisition, in growth like a large form of V. tricolor, but with large ivory-white flowers; Zygopetalum leopardinum, a Veitchian treasure, is a real acquisition, and must not be omitted. Among the certificated plants it is pleasant to see that some very fine old species are recognised. Among the Orchids is that beautiful and singular Angræcum caudatum sent to the Royal Horticultural Society by Baron Ferdinand de Rothschild in October last, and the pretty and profusely flowered Oncidium undulatum exhibited by Major Lendy. Such fine plants demand recognition whenever presented.

(To be continued.)

Orchid Notes and Gleanings.

ANGRÆCUM IMBRICATUM, *Lindl.*

This curious epiphyte flowered in November last in the rich collection of Mr. W. Lee, Downside, Leatherhead,. It is a tall Acampoid plant, with a very strong stem and very leathery, cuneate, oblong, ligulate, blunt bilobed leaves. The small cephaloid racemes show numerous lanceolate acute bracts and flowers which have lanceolate sepals and petals. Lip flabellate, retuse, apiculate, convolute, with an appressed recurved blunt spur not half so long as the blade of the lip, that it nearly touches. Column bent backwards, with a beaked rostellum, The flowers are sweet-scented, a little larger, than those of Angræcum clandestinum, Lindl., a species that has some affinity to this; perhaps unique in its turpentine smell of the flowers. Sepals and petals creamy-white. Blade of lip orange, anterior margin light yellow. They were the flowers sent by Mr. W. Lee. The plant was introduced by Mr. F. Sander, in 1884, and was collected, no doubt, by the late M. Schröder. A sketch sent me by this ardent collector showed as light green what is here orange or yellow. It would be very interesting to learn whether such green-lipped flowers will appear anywhere, and whether they are really quite the same in structural details, which, of course, cannot be judged from such a sketch. *H. G. Rchb. f.*

Cattleya gigas.

This magnificent species, figured in a recent number of the *Lindenia*, is stated to be difficult to flower. M. Linden attributes this to the application of too much water at the time the flower shoot is pushing. It requires to be kept drier than some other species.

Oncidium stelligerum Ernesti.

A handsome Oncidium, with wrinkled pseudobulbs, from the base of which proceed racemes of about eight flowers, each oblong in outline, flat, with lanceolate segments of a yellow colour spotted with brown; lip three-lobed, the two side lobes rounded, yellow, the central lobe ovate-acute, lilac. Mr. Williams recommends that the plant should be grown in a pot with good drainage and rough fibrous peat and Sphagnum moss, with a moderate supply of water in the growing season, and an abundance of light and air. *Orchid Album*, t. 260.

Cycnoches chlorochilon.

A very old friend, and as extraordinary as it is old. The flowers are about 5 inches across, the segments oblong, acute, green, the lip at the upper part of the flower thick, yellow, and facing the elongated column, which suggests a swan's neck. The plants do well in the Cattleya-house, where they get all the light possible, shading being required to protect them from the direct sun in summer. After flowering they require a period of rest, but the bulbs should not be allowed to shrivel. *Orchid Album*, t. 263.

Calanthe vestita.

There are few more beautiful plants than this winter-flowering Orchid, and although its merits are somewhat lessened by being leafless at this season, still its graceful spikes of bloom more than compensate for their absence, and the plants when intermixed with a few foliage plants or delicate Ferns, so as to relieve the base of the plants. They are very effective for indoor decoration; and, as they will bear a dry atmosphere with impunity for some time, they are doubly valuable. The genus is easily grown, still there are some cultivators who, although they succeed in growing it well up to the blooming period, yet fail then to carry it through the flowering season satisfactorily.

I have this season seen two such instances where the number of plants was large, and the growth exceedingly fine, yet there was scarcely a good spike to be observed. In some instances the spikes had failed just as they emerged from the base of the bulbs, and in others the spikes and individual flowers were so spotted and disfigured by damp as to be unfit for use. In each case the causes of failure were attributable no doubt to too much water at the root, and by too low a temperature, and a dry atmosphere during the dull and sunless days of November and December. When the bloom-spikes appear a minimum of 60° should be maintained in the house, except in severe weather, when it is more safe and beneficial to allow it to recede to 55°, with a comparatively dry atmosphere, rather than attempt to maintain a higher temperature, which only tends to distress the plants, if accompanied with dryness; and if, on the other hand, undue moisture be present in the air, spot and decay are certain to ensue. The day temperature need not exceed 65°, unless caused by sun-heat, which is particularly beneficial to Calanthes at all times, and especially so at this season, and when grown under these conditions; for this reason the lightest position should be selected for them in the house; they should not, however, be arranged too near the glass, lest by sudden changes of temperature moisture should condense upon the blooms and spoil them. When, during summer, the plants are in active growth, they may be treated almost as aquatics, provided the drainage is perfect; but when the bulbs are fully formed and the leaves begin to fall it is a mistake to continue the same treatment with the object of producing stronger flowering spikes; and from an experiment I have made this winter by withholding water altogether from a few plants, after the flowers commenced to open, I feel assured there is little gain in strength and much loss in colour and quality of bloom, by watering at this period, unless the plants actually flag from dryness. *T. Challis, Wilton House, Salisbury.*

"The Hour-Glass."—This is a new monthly magazine, published by A. G. Dawson, 14, Ivy Lane, at the price of three pence. "The foremost aim of the publication is to publish articles on the subjects of the hour by the men of the hour." Of course, the inevitable story forms part of the programme, and there are some pretty illustrations. The articles are well-written and varied.

Ireland.

GLASNEVIN IN WINTER.

The comparative scarcity of flowers at this season brings into stronger relief the great beauty and variety of foliage to be found in the various houses at Glasnevin. The new Palm-house, which is arranged with great taste, has a certain advantage from its very newness, in being less crowded than it will probably be a few years hence; so that the individual beauty of some of the larger specimens of Palms, Tree Ferns, Bamboos, &c., is well seen, especially from the gallery; and (as seen from the gallery also) a group of Cycads is arranged with excellent effect. The Filmy Fern-house is, perhaps, unrivalled in the kingdom, as to the size to which the Todeas have grown. Their luxuriance is wonderful. Foliage plants in other houses are arranged very effectively, and lighted up here and there with flowers of much beauty. Amongst others the brilliant blue Dichorisandra thyrsiflora, a Tradescantia-like flower, blossoming in large clusters, has been in flower; it would be a beautiful companion plant to Luculia gratissima, for winter flowering in any conservatory large or small. Hexacentris lutea is a good Acanthaceous climber for November, and Hoya imperialis was also in blossom, having a pendent bunch of about nine thick, waxy, pale pink flowers, each fully 1½ inch across. Various beautiful Gesneraceous plants are planted late, so as to insure their blossoming at the dull time of the year. These, with Orchids and various others, keep up a succession of winter flowers which must gladden the eyes of many of the thousands who visit Glasnevin on Sunday afternoons (and Mr. Moore says these large numbers of people do marvellously little mischief), many who perhaps see little but muddy streets and grey fogs during their week-day walks, and to whom such a garden as Glasnevin must be no small boon. A special bit of brightness for early winter days was lately supplied by a large and well arranged bank of Chrysanthemums. Although the culture of plants of botanical interest is doubtless the especial object of botanic gardens (an object kept in view beyond all others at Glasnevin), there is an interest even apart from their beauty in good collections from some fine groups of garden flowers. They show what can be done even by artificial "selection," and may be of considerable help to those whose study of evolution may have been almost entirely confined to books, and who have not the daily life in a garden of their own to help them. This seems to come well within the province of a botanic garden even from a strictly botanical point of view.

Amongst many interesting and rare plants at Glasnevin showing peculiarities of foliage is a winter flowering Passion-flower, Passiflora adenopoda, better known as P. acerifolia, and not often seen in cultivation. It has two relatively very large stalked glands near the top of the leaf-stalk; the blades are palmately divided; its flowers are also very pretty.

Oxalis bupleurifolia is another curious plant with phyllode-like leaves, whose microscopic structure shows that they are true leaves. At their apex there is occasionally to be seen a trace of the typical three-part leaf. There is a plant of Selaginella texta, one with foliage curiously like that of some of the Conifers. Nepenthes Rajah, three or four years old, gains in strength every year. It is grown in an Odontoglossum-house with a maximum temperature of 50°, and to this cool treatment Mr. Moore attributes its increasing vigor. *C. M. Owen.*

Fruit Register.

LATE PLUMS.

Those who require Plums late in the season cannot do better than plant the Wyedale; it is a good bearer and hardy, deserving more extensive cultivation. I have just used the last gathering (December 13), which have been in the fruit-room more than a month, and were partly shrivelled; it cooks a fine colour, and is very good; it is the best late Plum I am acquainted with. Coe's Late Red is a useful kind, not so much grown now as formerly, and certainly not so valuable as the Wyedale. *W. D., Wierton, Maidstone.*

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Appointments for the Ensuing Week.

SALES.

MONDAY,	JAN. 3	Sale of 10,000 Lilium auratum, from Japan, &c., at Stevens' Rooms.
WEDNESDAY,	JAN. 5	Sale of Hardy Plants and Bulbs in variety, at Stevens' Rooms. Sale of 5000 Lilium auratum and other Lilies, Roses, &c., at Protheroe & Morris' Rooms.
THURSDAY,	JAN. 6	Sale of Imported Orchids from Mr. F. Sander, at Stevens' Rooms.
FRIDAY,	JAN. 7	Sale of Imported Orchids, at Protheroe & Morris' Rooms.
SATURDAY,	JAN. 8	Sale of Hardy Plants and Bulbs in variety, at Stevens' Rooms. Sale of Plants, Roses, Bulbs, &c., at Protheroe & Morris' Rooms.

Our Jubilee.

ACCORDING to the dictionary the Jubilee was the blast of the trumpet announcing the grand sabbatical year of the Hebrew nation. After seven weeks of years (every fiftieth year) the jubilee note was sounded. "In the process of the suns" a jubilee came to be celebrated sometimes at every hundredth year, at others at every twenty-fifth year. We take it, then, that there is no good reason to prevent our assuming our forty-sixth year and our two thousand four hundred and first number to be our jubilee, and thus, like good patriots, to make our jubilee coincide with that of Her Most Gracious MAJESTY.

On January 2, 1841, the first number of this journal saw the light. We are tempted to give some extracts from the original programme, and to add some particulars as to our subsequent progress and development, which we hope will show the reader that we, faithful to our original programme, have been

—— "ever reaping something new."

The Laureate must excuse us if we paraphrase his earlier words as more applicable to our position and feelings than his later wailings. Quoting, then, from our original prospectus, it is historically interesting to find that in 1841 Dr. LINDLEY thus wrote:—

"Gardening in all its numerous branches forms the general subject of elucidation. Market gardens, kitchen gardens, orchards, forcing-houses, shrubberies, flower gardens, conservatories, lawns, nurseries, plantations, forests, rural and garden architecture, landscape gardening, walks, roads, and all the multifarious matters connected with these branches of rural economy, are the points towards which our attention will be more particularly directed.

* * * * *

"The humblest branch of gardening is essentially founded upon physiological principles, and the whole art advances in exact proportion to our knowledge of the laws that regulate the general economy of vegetable life.

"The embellishment of gardens is partly in proportion to the number of new flowers that are introduced from foreign climates; the successful cultivation of these exotics depends upon the skill with which the soil and climate that are natural to them are understood and imitated; the imitation of climate depends upon the arts of heating, ventilating, glazing, and other processes of the like nature; and the latter involve the necessity of some acquaintance with the laws of heat and of the motion of fluids.

"The art of gardening would soon be deprived of all novelty and interest if it were not for the daily discoveries of science and the application of them as they arise to the practice of cultivation. For these reasons vegetable physiology, systematic botany (as far as handsome or useful plants are concerned), and vegetable chemistry are more especially matters upon which information may be constantly expected.

"The actual condition of gardeners and the nature of the education they ought to receive in order to fit them for fulfilling the duties of the station will constantly occupy our attention. We think that there is room for very great improvement in a gardener's education, and that such education would tend essentially to increase both his personal comfort and his value to his employer, and consequently to raise him in the scale of society. With regard to the rights of gardeners as a peculiar class, it must never be forgotten that their employers have also rights which require to be considered, and we shall not be disposed to overlook either the one or the other.

"The gardening and agriculture of the British Colonies will constantly receive our serious attention. The improvement of their natural resources is becoming every year of more importance to the colonists, and we trust to render them good service by calling their attention either to the best means of cultivating the plants they already possess, or to the sources from which they may derive new and valuable species. The immense advantage of exciting a spirit of inquiry into these subjects, has already been sensibly felt in British India, and cannot fail to be appreciated by degrees in all our other foreign possessions. Our great object, in fine, will be to make our paper, in the truest sense of the word, the gardener's friend, collecting what is useful to him, opposing wrong, defending right, and maintaining by every proper means, the legitimate interests of all branches of knowledge connected with the subjects to which our journal is devoted."

Our widely extended circulation in every quarter of the globe bears the best testimony that we have acted up to our programme, and extended and modified it as circumstances have demanded: but now for a little more retrospect. The winter of 1840, and specially that portion of it in which the preparations were being most actively made for the advent of this journal, seems to have been somewhat like that through which we are now passing, and we take it as a happy omen.

"Miserable weather in London, severe frost, and a great deal of snow, the thermometer registering 19° of frost, and on January 3 a terrific storm"—such are the memoranda now before us of one who took an active part in the work of the *Gardeners' Chronicle* at that time. The preliminary business was conducted at the office of the *Athenæum*, but very shortly the work was transferred to 3, Charles Street, Covent Garden, which, as in the case of many a garden plant, has since changed its name to 41, Wellington Street. The object of the promoters is pithily expressed in a letter before us—"to give a higher tone and a better direction to horticulture."

LINDLEY was a tower of strength in those days, and he was aided by PAXTON, and later by BERKELEY and THOMAS MOORE, and most of the best gardeners of the kingdom. Many of those have gone to their rest, but we are proud indeed to know that the loyalty of some has been proof against the lapse of time and the vicissitudes of change; and that while constant new reinforcements of necessity are made, some few of our contributors of 1841 and those among the most honored, still remain in our list of correspodents.

As is always the case in a new venture much trouble and anxiety were experienced over the first number. The paper was reset five times to see how it would look! To our eyes now it looks solid and heavy and lacking variety, neither was there much of it, as we should think now, and the illustrations were indeed few and far between. Nevertheless, the number of copies printed of the first issue was about 3,250, which was thought very large in those days, but which is small indeed compared to the numbers to be issued to-day. In fact, the first number had to be reprinted, and from week to week the increase was steady, so that a great success was scored. At that time some eighteen or twenty columns only, but of painfully small type, were devoted to horticulture, and, as we have said, illustrations were only given at rare intervals, and then of the most meagre quality. Some twenty columns of general news were also added. In 1844 the paper was enlarged, and the *Agricultural Gazette*, then, as now, under the editorship of our loyal and frank-hearted friend, J. C. MORTON, formed an integral portion of the paper. After 1869 the newspaper portion, which by general testimony had been well done, was eliminated, partly because the penny daily papers rendered our summaries unnecessary, but mainly because of the urgent necessity of devoting more space to horticulture proper. In 1874 similar reasons led us to sever our connection with the *Agricultural Gazette*, and as the yearly volumes had become inconveniently bulky half-yearly volumes were adopted. These arrangements gave us considerable additional space, and we were enabled thenceforward very largely to increase the number of our illustrations, for the fidelity and permanent value of which we have received abundant testimony from those most qualified to judge.

In the meantime competition became fiercer and fiercer. The interest in horticulture has so extended, that where two or three papers once sufficed, now there are nine or ten, each, we dare say, with a circulation as large as, and in some cases much larger than, was the case with ourselves or any of our contemporaries in 1841.

As circulation extends, and competition increases, the requirements of the reader, and the expenses of production augment, but in an increased ratio. This is the universal rule in undertakings of the present day, and the public is the gainer. To meet these new conditions we, too, have entered on a new phase of evolution, and with the proud remembrance of what our contributors have enabled us to do in the past, we venture to hope that by their continued aid, we may be able to say, that which we have done is but earnest of that which we shall do.

—— GROUP OF CYCAS CIRCINALIS (see Supplement).—The group of trees of Cycas circinalis shown in our supplementary sheet is part of a consignment sent over from Ceylon by the Director of the Botanical Garden, and which were employed for the purpose of ornamenting the court of that colony, and of illustrating its vegetable productions, at the late Indo-Colonial Exhibition. The trees are now in one of the houses of the Royal Horticultural Society at Chiswick, and are, we believe, at the disposal of any purchaser. These plants were, Dr. TRIMEN tells us, dug out of the dense forest in the south-west part of Ceylon, some 20 or 30 miles inland from Colombo, where the species is common. They are

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CYCADS AT CHISWICK.

fine specimens, the stems being from 8—12 feet in height; taller ones are to be met with, but these were selected as being fairly straight and unbranched, for, contrary to what is usually stated, the stem of old trees of C. circinalis is very frequently branched. This is the only native Cycadæ in Ceylon, the closely allied C. Rumphii, though found very rarely, being probably an introduction. It is interesting to notice that the lower portions of these old stems—they are probably a century old—have quite lost the characteristic annual rings of leaf scars, and have taken on the appearance of ordinary tree trunks. Our Belgian and Russian friends make more use of these noble plants for decorative purposes than we do, the plants being well suited for winter gardens, the decoration of rooms, and similar purposes. There is a magnificent collection of these noble plants at Kew, where they form an object of special predilection on the part of the Director, Mr. W. T. T. DYER. Mr. BULL has also a fine series, and others are to be seen at most of the large nurseries.

FIG. 6.—RUELLIA AFFINIS: FLOWERS ORANGE, PINK, AND CRIMSON; POLLEN MAGNIFIED 200 DIAM.

—— RUELLIA AFFINIS.—Winter-flowering plants are, and must always be, objects of interest to the gardener, and therefore we need offer no excuse for bringing before our readers an illustration (fig. 6) of a group of plants (Acanthads), many of which are suitable for the decoration of the conservatories at this the dullest season of the year. Our illustration is from a specimen forwarded to us by Mr. CROOK, of the gardens, Farnborough Grange, Hants. The illustration will show that we have to deal with a plant whose showy orange-pink-coloured flowers, flushed in places with crimson, will commend itself to all who have to keep up a supply of flowering plants. The plant is a native of Brazil, was introduced by Messrs. HENDERSON, of Wellington Road, and figured in the *Botanical Magazine*, t. 5414, under the name of Dipteracanthus, a genus now included under Ruellia. The plants are of easy culture, and by a little care being bestowed upon them, by pinching out the points of the shoots, to cause them to throw out lateral shoots, bushy plants will be formed of highly decorative value. The soil best suited for the growth of the plant is a mixture composed of two parts peat and one part rich loam, to which a little

sand should be added. The plant strikes readily from cuttings, so that shabby plants need not be tolerated.

—— METROPOLITAN PUBLIC GARDENS ASSOCIATION.—The fourth annual report of the Association presided over by Lord BRABAZON has been issued, and contains an excellent record of work done. Employment is found for labourers, open spaces are beautified, fresh air secured, recreation grounds supplied, and great good effected in a very modest manner. So far as the health of the metropolis is concerned it is now of more consequence to multiply such gardens in crowded quarters than to purchase larger areas on the outskirts.

—— "WHITAKER'S ALMANAC" FOR 1887 has been recast and enlarged. Much additional information relating to the Colonies has been inserted, so that the work more than ever deserves the epithet of a concise Encyclopædia.

—— PRIMULA SINENSIS.—During last winter and spring many scores of seedling Primulas of various species passed under our notice, but in none of them, except in the seedlings of P. sinensis, were there any hairs on the little stalk supporting the cotyledons, and intervening between them and the roots. This little stalk was of old known as the tigellum or caulicle, but it has become the fashion to speak of it now as the "hypocotyl," a very unnecessary term, and one that is not distinctive, for the root also is beneath the cotyledons. In any case glandular hairs in this situation are very rare, Sir JOHN LUBBOCK, in his paper on seedlings only figuring one such case in a species of Cuphea.

—— CHISWICK (ROYAL HORTICULTURAL SOCIETY) MUTUAL IMPROVEMENT ASSOCIATION.—On January 28, at 8 P.M., Mr. RICHARD DEAN will deliver an address before the members of the above Association.

—— GRAND NATIONAL DAHLIA SHOW. — A meeting of the promoters of this annual exhibition took place at the Botanic Gardens, Chelsea, on the 22d ult., Mr. HENRY GLASSCOCK presiding; there was a good attendance. Mr. THOMAS MOORE, the Hon. Secretary, announced that the Crystal Palace Company had made the same arrangements as last year, and Mr. HEAD had suggested that the annual show should take place on September 2 and 3 next. The executive committee was re-appointed, the judges nominated; and Mr. MOORE was voted such assistance as he might require. On proceeding to revise the schedule of prizes, considerable discussion took place on a proposal to make classes for self and shaded and also for parti-coloured Dahlias, the latter including the fancy varieties. A counter proposal was made to abolish the distinctions of show and fancy, and admit both in stands. Eventually it was agreed that, in the case of the nurserymen's classes, the distinction between show and fancy should be abolished, and that both be shown together; accordingly a new class was made for seventy-two blooms, not less than thirty-six varieties, and not more than two blooms of a sort; while the clauses for forty-eight, thirty-six, and twelve varieties are retained; show and fancy flowers being also shown together. The amateurs present not taking kindly to the proposal, it was resolved that the classes for them should remain as last year, the show and fancy varieties being shown separately. It was announced that the trustees of the Veitch Memorial Fund had offered prizes in five classes for amateurs, and in these, also, the old distinctions between show and fancy varieties will be maintained. The classes for the premier show and premier fancy flowers were withdrawn, as no longer serving any practical purpose, and the following new classes, open to all, were provided, fancy and show flowers being admissible:—Six dark Dahlias, distinct; six light do., do.; six white do., do.; six striped do., do. These are of a decidedly novel character, and will serve to illustrate the best forms of their characters. A new class was also made for six bunches of Cactus or decorative varieties—six blooms to form a bunch; also for twenty-four bunches of single Dahlias; both open to all, and the class for six bunches of single Dahlias will be confined to amateurs. A cordial vote of thanks was passed to Mr. THOMAS MOORE and to Mr. GLASSCOCK.

—— MR. J. H. HART.—We learn that Mr. J. H. HART, who has, since the departure of Mr. MORRIS, so satisfactorily performed the duties of Superintendent of the Government Cinchona plantation, has been appointed Superintendent of the Trinidad Botanic Garden, in succession to Mr. H. PRESTOE, who has retired. We congratulate Mr. HART on his well-merited promotion.

—— FATHER SCORTECHINI. — The death of Father SCORTECHINI is announced from Calcutta, his exertions in the botanical exploration of Perak having brought on an attack of dysentery. He had made large and valuable collections, which will be utilised at Kew in perfecting portions of the Flora of British India.

—— A DICTIONARY OF PLANT NAMES.—We are glad to see that Messrs. HOLLAND and BRITTEN have brought this useful and interesting work to a close with the third part. We shall have occasion to speak more at length of this publication on another occasion.

—— NATIONAL ROSE SOCIETY.—At the annual dinner of the Society the Chairman, the Hon. and Rev. J. T. BOSCAWEN, proposed that some recognition of the Jubilee should be made by the members of a Society whose object it is to promote the extended culture of the flower which is our national emblem. It was readily taken up, a committee was named, and at its first meeting on the 22d ult., held at the Horticultural Club, it was determined that the sum of £100 should be devoted to the purchase of two challenge trophies, to be competed for at the provincial shows of the Society, for thirty-six blooms, open to all nurserymen, and twenty-four open to all amateurs. Subscriptions were announced in sums varying from one guinea to five, amounting to upwards of £40, and a circular will be shortly issued to the members generally asking their co-operation.

—— SPANISH PLANTS.—The twelfth number of Dr. MAURICE WILLKOMM'S *Illustrationes Floræ Hispanicæ* contains figures of Cirsium Willkommianum, a handsome Thistle, with its narrow spiny leaves covered beneath with white down; several pretty Antirrhinums and Linarias, L. nivea being very remarkable for its pink-veined flowers and with a very prominent palate covered with long grey hairs; L. Anticaria, with blue veined flowers and a chestnut-brown palate; and L. Badale, with flowers similarly veined, but with a yellow palate.

—— MURRAY'S MAGAZINE. — This alliterative magazine starts on its career as a high-class literary magazine, well-printed, and with solid well-written articles appealing to the intelligence rather than the sympathies. Fiction is of course not omitted, and the poison of Radicalism is duly neutralised by a copious draught of Conservatism. Major LAWRENCE, F.L.S., seems to promise an infusion of science, at present treated from the point of view of good-natured banter. We do not wonder that JOHN LAWRENCE'S "object" escaped amid a crowd of bubbles, if he allowed the Canada Balsam to fizz and bubble as he is said to have done. Perhaps he was a little confused as one of his colleagues in the same number, who by writing of "That idiot of a Prefect's son," leaves us in doubt as to whether it is the Prefect or his son that is idiotic — under the circumstances, perhaps both.

—— OXALIS.—The leaf-stalks of O. bupleurifolia and some other species have the leaf-stalks flattened out, so that they resemble flattened branches or "cladodes." Microscopic anatomy shows, however, that we have here here a true leaf in disguise, for the woody portion of the vascular bundles or fibres of the leaf is directed towards the upper surface, while the bast is beneath, both being partially surrounded by a semi-lunar mass of thick wood-cells. Hence, although to the unassisted eye the leaf-stalk appears alike on the two surfaces, anatomy reveals that the bundles at least are different on their upper and lower surfaces respectively.

—— A NEW MEDICINAL PLANT.—A new medicinal plant is referred to in a recent number of the *Therapeutic Gazette* under the name of Cacur, and is said to be used by the Kaffirs in Southern Africa as an emetic. The plant is said to be Cucumis myriocampe, and the green or yellowish-green fruits are the parts used. The form of administration, as pursued by the Kaffirs, is to heat the fruits, and squirting the contents into their mouths, to swallow them. The contents of two fruits are considered a dose for an adult, and one for a child. The plant grows largely in gardens as a weed, especially where Melons and Pumpkins are cultivated, and it produces its fruits very abundantly. These fruits are about the size of a large Gooseberry, at first green but turning yellow on ripening, and covered sparsely with short soft prickles. The soft viscid pulp has a faint odour of Cucumbers and a decidedly bitter taste. From experiments made with the pulp of the fruit it seems to be decidedly emetic in its action and purgative in non-emetic doses. The chemistry of the plant has not yet been satisfactorily ascertained; so far as it has been done there seems to be "no trace of any alkaloid, the activity seeming to depend upon a bitter neutral principle readily soluble in water or in 80 per cent. alcohol."

—— ROOT PRUNING. — In the Saharunpur Botanic Garden an experiment was tried in root-pruning upon young and over-vigorous Peach trees. A plantation of these was formed three years ago in a very rich piece of ground formerly used for vegetable cultivation. The trees were of astonishing size for their age, but their vigour all went to stimulate the production of wood rather than fruit: thus they were fit subjects for the experiment. A trench 2 feet wide, 2 feet deep, and 3 feet from the trunk of the trees, was dug around them in December, and every root met with was cut by the spade. The soil was thrown back liberally mixed with manure, and frequent waterings were given for some time afterwards; at the same time the branches were thinned out and shortened where necessary for symmetry, but not in any way severely pruned, as native gardeners are in the habit of doing. The treatment given has been quite successful, as every branch and twig is now laden with fruit.

—— CIRRHOPETALUM MACRAEI.—The habit of the species of Cirrhopetalum in cultivation is all that could be desirable, and were their flowers a little more conspicuous and somewhat larger, they would doubtless soon become as popular as Masdevallias. They are, however, as a rule vastly superior to their nearest relations, the Bulbophyllums, both in size and colouring, with the exception of a group typified by Dendrobium, Cœlogyne, and popularly known as Bulbophyllum. The lateral sepals of the present species are pale yellow, and about $1\frac{1}{2}$—2 inches long, while the upper one is rosy-purple and considerably shorter. The purple petals are falcate, and only about $\frac{1}{4}$ inch long. Three to seven flowers are produced in an umbel terminating the peduncle, and arranged in such a manner that they radiate in one plane, forming the segment of a circle. This peculiar arrangement adds considerably to the interest attaching to these miniature Orchids. The plant is epiphytical on trees in Ceylon, and therefore requires the temperature of the East Indian-house, where it should be grown on a block or small raft with some sphagnum tied over its roots and hung up near the light. So treated its other requirements are but few. There is a figure of the plant in the *Botanical Magazine*, t. 4422, and a flowering specimen in the East Indian-house at Kew.

FORESTRY.

WOODLAND DRAINAGE.

PERHAPS no department of the forester's work is more difficult than drainage, either as a preparation of the ground for planting or for renovating existing woods. No hard and fast lines can be laid down as to draining, as almost every acre requires to be treated in a special way. The distance between the minor drains should be from 10 feet to 20 feet, according as the soil is damp or otherwise. The size of the ditches may vary considerably, but in ordinary plantation drainage they should not be less than about 20 inches deep, 30 inches wide at the top, and of such a width at the bottom as to allow an ordinary draining shovel to be easily worked. Drainage is beneficial in the case of established woods and plantations where the languishing appearance of the moss-clad trees tells but too plainly that the soil is sour and surcharged with moisture, and open drains in these cases are generally to be recommended, care being taken to avoid the roots of the larger trees. Existing woodland drains and ditches should receive attention at present, the broken twigs and leaves, &c., being removed from them, or flooding may result. General scouring of ditches may likewise receive attention, but if it was done in the summer little work will now be required.

UPROOTED TREES.

Where it is intened to bury the upturned roots, as always should be done unless in very out-of-the-way woods, the best method is to dig a pit immediately behind the root, into which it will fall when severed from the trunk, which may be taken to the timber-yard or other convenient place. Also get rid of the branches at once. Here we find it a wise policy to have in the home nursery a few specially prepared trees of large size for filling in such gaps in the woodlands as are caused by overturned trees.

BRACKEN FOR GAME COVERT.

Not long ago a reader of the *Gardeners' Chronicle* asked for advice regarding the getting up of Bracken for covers. In reply I may state that two methods are usually employed—first, transplanting, and second, by raising from spores and planting them out. The latter method is to be recommended, for even with the greatest attention, successful transplanting is the exception. In raising the Bracken from spores all that is necessary is to collect during dry weather a number of spore-bearing fronds, and to place these between sheets of paper in a dry, cool position, when the spores will become detached and may be collected. December is a good time for gathering the spores, when they may either be sown at once or kept till spring. In sowing pots or pans may be used, but where a large number of seedlings are required, I would advocate the use of a frame. Nearly fill the pots with good loam, rammed firmly down, well water the surface, sow the spores thinly; stand the pots in troughs or saucers of water in cool, shady place, and cover with a sheet of glass. Frame culture is more simple, for it is only necessary to cover the bottom with 3 inches thick of turves put upside down, and on this to sow the spores. When the young plants are fit to handle pot them off, and after shifted again, and induce rank growth by standing the plants in a cool frame. In planting out be careful not to plant deeply. If transplanting of the old roots is to be the method this may be done now or at any time before the end of February; be careful not to disturb the soil much, for there will be no success otherwise. A good plan is to dig up squares of earth and transplant with as little delay as possible. At this operation the sods should be bound round to prevent any breakage. In planting, proceed as directed for those in pots and pans. Even after every care has been given to the lifting and planting of Bracken roots, we have known instances in which but a poor reward has been obtained, for this Fern is most difficult to deal with. Two years is usually required for the effects of removal to be outgrown. Once thoroughly established Bracken spreads rapidly.

The present is an excellent time to make or renovate game coverts, at least as soon as the woods are shot through, when the work may be taken in hand at any time. Overgrown patches of Privet may be headed over and kept otherwise within bounds, few things being more detested by game generally than such jungles of underwood. Laying or copsing of the Privet may be engaged in during mild weather, this being a cheap and efficient method of extending those coverts, and also of the Laurel, Rhododendron, and most other free-rooting shrubs. It is performed by bending the outer branches over till they come in contact with the soil at about half their length, at which point they are firmly pegged down. *A. D. Webster, Penrhyn Castle, Bangor.*

HEATHS.

THE late Mr. Fancourt, of the Pine-apple Place Nursery, who over thirty years ago—then a hale but old man—was familiarly and affectionately styled "the father of propagators," used to say there was no more practical difficulty in turning out a full and well-rooted pot of hard-wooded Heaths than a pot of Pelargoniums from cuttings. Incredulity was the predominant feeling in the mind of many who heard the keen old man say so, and the sententious remark, "It's all in knowing how to do it, my boy; that's the difficulty," which usually followed, had the effect of intensifying rather than dispelling the feeling. It must be said that the contrast presented in the comparison was a startling one to the uninitiated; it did not square with their preconceptions of the matter at all. And this we fancy was precisely the impression Mr. Fancourt wished to make on the minds of those who happened to raise in his presence the question of difficulty in regard to propagating Ericas of this class. His intention was to induce men to think and observe for themselves, knowing well, as he did from long experience, that unless they did so, any amount of talk about rules and methods of practice would be futile.

My purpose in introducing to readers of the *Gardeners' Chronicle* the above dictum of Mr. Fancourt, who was unquestionably one of the most successful propagators of hard-wood greenhouse plants that ever practised the art in this or any other country, is to emphasise the necessity for individual effort on the part of the beginner. He must start, not with the foregone conclusion that Ericas are inherently opposed to the propagator's art, which is the idea conveyed in the phrase "they are difficult," but with the conviction, that if there is any difficulty in the matter at all, it lies in the operator, not in the subject. Only let him set about "knowing how to do it," and the difficulty that is too widely associated with the propagation of hard-wooded Heaths will readily disappear. I cannot do much on paper to help any one to overcome his own difficulties in the matter. To indicate the conditions essential to success is all that I can do, the rest—and it is the most important part of the business—lies with the learner himself. The right application of these conditions in detail depends on the correct comprehension of them, and only patient observation, with the determination not to be discouraged by failures, but to examine and find their cause when they occur, can lead to success.

THE PROPAGATING HOUSE.

This must be a cool structure, for, as regards temperature, the cuttings must be treated precisely the same as the established plants. Although it is well where large numbers are required, as in nurseries, to set a house or a part of one aside for Heaths and other subjects requiring similar treatment, yet a still corner in any cool house will do to place them in as well as a special structure. It is desirable they should be near the light, for though they will require shading from the sun, they ought to be close to the glass so as to enjoy the full benefit of subdued light. The bottom on which the pots stand should be moist in a moderate but a equable degree; trouble in and difficulty from frequent watering will be obviated by attention to this point. As each pot will require to be covered separately with a bell-glass, other plants may be grown in the same house and ventilated as they may require, without detriment to the cuttings provided the temperature be cool and steady. Fluctuations are dangerous, and draughts hot or cold should be prevented from reaching the cutting pots.

THE SELECTION OF CUTTINGS.

This is unquestionably the most important point in connection with the propagation of Heaths. Nearly every other operation may be performed by order—this requires experience and a practised eye to do it rightly. The foundation of success in Heath propagation really lies in the power to discern when the cuttings should be taken. Most of the failures one sees in the shape of patchy pots or dead blanks are to be attributed to the circumstance of the cuttings having been selected in unequal conditions as regards fitness. The very soft ones "fog" off, and the very hard drop their leaves, causing a blank in either case, which is the beginning, but not always the end, of the ill results of bad selection. The evil is apt to spread if prompt daily attention be not given to the removal of every cutting that appears to be affected. It is necessary, therefore, to be extremely careful in the selection of the cuttings.

Some have attempted to fix a time for selection, but experience has proved any such attempt to be fallacious. The cuttings of every variety of Heath are not all ready at one time, and even those on the same plant are not all equally fit to be taken in the same week or fortnight. When the young shoots have ceased to elongate and their points have acquired a tolerably firm texture, is the proper time to take the cuttings. They should neither be very hard nor very soft nor herbaceous in texture. In the latter case they will be apt to damp while in the former, though they may under good management be induced to strike roots they rarely make good plants, but usually remain stunted and bark-bound. Side shoots of sturdy proportions that have been well exposed to light and air while making their growth are the best. Long cuttings are undesirable, but this is a point that must be determined by the character of growth of the particular species or variety. All I desire to impress on the reader is that short cuttings are relatively the best. Stress is laid by some on the value of the cuttings having a heel of the old wood; experience leads us to attach little importance to the point, provided the cuttings are selected properly in all other respects. There is, however, no objection that we know of to the practice. It may be that the concentrated condition of the cambium and the vital force accumulated in the numerous latent buds situated at the union of the new with the old growth are specially favourable to the formation of roots, and if so there is no reason why advantage should not be taken of the circumstance as a means of facilitating root formation in subjects so slow as Ericas admittedly are. But it is not essential, and an otherwise good cutting should not be rejected because it cannot be taken with a heel. *W. S.*

(To be continued.)

THE FLOWER GARDEN.

COLD PITS.

CAUTION is necessary in uncovering pits or other structures containing plants, when a thaw sets in. If the subjects inside are found to be frozen the pit should be covered up again. In some cases it is advisable to add additional covering, which should be allowed to remain over the structures until the whole of the inmates have thawed gradually. Nothing is so injurious to half-hardy plants as a sudden transition from cold to heat and from darkness to light.

PLANTS IN HOUSES.

The prolonged frost having necessitated the application of fire-heat, watering of bedding plants will be rendered necessary, but indiscriminate watering must be avoided, those only that are dry being watered; and if these are (dry) on shelves overtopping others, it will be well to remove such as are dry and water them on the floor, to prevent the drainings from wetting those beneath.

PREPARATORY WORK.

When the weather prevents work out-of-doors, much may be done to expedite the work of the busy months. All pots for the reception of bedding plants should be either washed or rubbed clean, and put in readiness for use. The stock of boxes should also be gone over, and after getting well scrubbed the necessary repairs should be made. A coat of boiling tar, put on when dry, will make them last treble the time they would otherwise do. All the refuse soil from the potting tables should now be sifted, and put in readiness for the time of need. This will be found invaluable for sowing, and pricking off cuttings.

OUT-OF-DOORS OPERATIONS.

When the weather is open and the ground in working order, the laying of turf should be pushed forward as rapidly as possible. Turf for this purpose should be selected from a sheep-run, or where there is an almost entire absence of the coarser sorts of grasses. If this is not easily procured sowing of grass seeds must be resorted to—the finer sorts should only be used. A good mixture consists of Aira cæspitosa, Cynosurus cristatus, Festuca ovina, and Lolium perenne, with an addition of Trifolium repens. The coarser varieties can never make a fine sward. Preparatory to laying down fresh stretches of lawns or verges the ground should be well levelled and trodden hard to prevent subsidence. If the soil be rich, a coating of sifted ashes or poor soil to the depth of from 1 to 1½ inch spread under the turf will prevent a too luxuriant growth, which is inimical to a close bottom. The sweeping and rolling of lawns must receive a due amount of attention when the weather is open. *W. M. Baillie, The Gardens, Luton Hoo.*

PEARS.

A SELECTED LIST OF ONE HUNDRED VARIETIES OF PEARS.

THE following list comprises those found suitable for general cultivation in the southern districts of the country arranged in five groups of twenty, according to season of ripening. It may prove useful to those in want of Pears for any particular season, although the time of ripening varies somewhat according to season, locality and treatment. For example, Marie Louise may sometimes be found ripe from October to December, and Easter Beurré is often ripe at Christmas. It may be noted here that this list, although including only about the sixth part of the names to be found in fruit lists, includes almost every variety worthy of cultivation.

JULY, AUGUST, AND SEPTEMBER.

1. Beacon.—Small, pretty; great cropper.
2. Beurré Giffard. — Extremely handsome, of medium size, good quality; indifferent cropper.—July.
3. Beurré d'Amanlis. — Large, handsome, somewhat watery flavour; great cropper; one of the most profitable sorts to grow.—September.
4. Beurré Boisbunel.—Small and pretty, sweet, pleasant; good cropper.—September.
5. Beurré de l'Assomption. — Large, somewhat unshapely, second quality, flavour musky.—September.
6. Bloodgood. — Small, first quality; sweet.—August.
7. Citron des Carmes.—Small and having little flavour; great cropper.—Ripe early in July.
8. Clapp's Favourite. — Large, handsome, good quality; resembles highly coloured Williams' Bon Chrétien.—September.
9. Dr. Jules Guyot.—Large, rather handsome; musky flavour, like Williams' Bon Chrétien.—September.
10. Doyenné d'Eté (fig. 7).—A pretty little Pear; great cropper—the earliest Pear to ripen.
11. Hessel.—Small, second quality; enormous cropper—the great market Pear.—September.
12. Jargonelle.—Long, handsome; of excellent quality in cool situations.
13. Madame Treyve.—Large, handsome; very rich and excellent—prolific; one of the best early Pears.—September.
14. Roche.—Medium; rather variable in quality; good cropper.
15. Souvenir de Congrès.—Large, handsome, good quality; musky flavour, like Williams' Bon Chrétien; crops well; a valuable Pear.
16. Summer Beurré d'Aremberg. — Rather too small; sweet and pleasant; resembles the old Beurré d'Aremberg.
17. Triomphe de Vienne.—Large; of moderately good quality.
18. Tyson.—Medium, extremely pleasant flavour; crops well; a nice Pear.

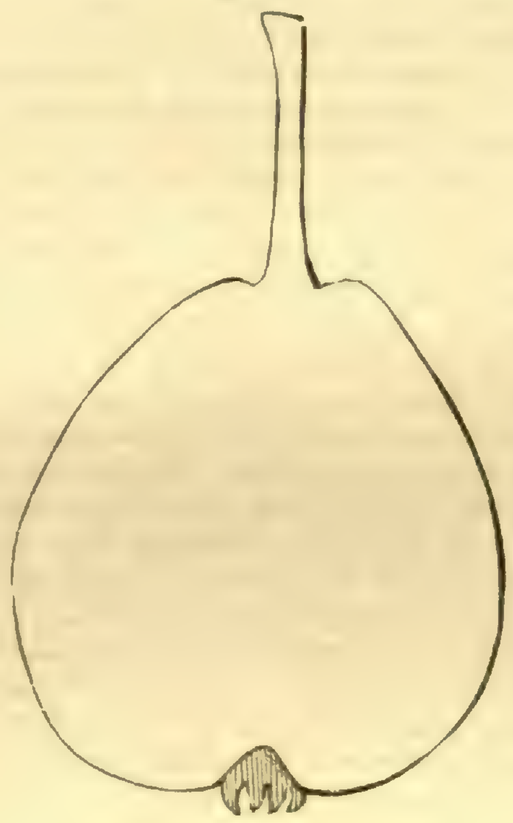

FIG. 7.—PEAR, DOYENNÉ D'ETÉ.

19. Williams' Bon Chrétien.—A well known sort—the leading Pear in its season.
20. Windsor.—An old variety, large and handsome; poor in quality, but a great cropper.

Note.—All the foregoing Pears should be gathered a few days before becoming ripe, and placed in the fruit-room to ripen. If gathered successionally—that is, a few at a time—their season may be greatly prolonged. *A. F. B.*

(To be continued.)

VINES.

VINE-GROWING AT MADRESFIELD COURT, MALVERN.

WHEN Mr. W. Crump took charge of the gardens at Madresfield Court a few years since he discovered that the Vines in the principal range of vineries, in five divisions, did not produce quite so good Grapes as he could wish to see them bear, therefore he set to work with a view to securing better results from them. The first step taken was to ascertain the condition of the Vines at the roots, the nature of the soil of the border, and the state of the drainage of the latter, which is an outside one; with the result that the Vines were found to have very few healthy roots, consequent on their being placed in a not over well drained border, consisting of a close, heavy loam. This fact led to the removal of a large quantity of the sour ungenial soil, which had to be carefully worked out from among the roots, and the placing on, in its stead, a like completment of a compost, consisting of loam, wood-ashes, lime-rubble, and half-inch bones in proportionate quantities, and into which the roots afterwards pushed freely, and, as a consequence, better fruit was secured the next year from the Vines. But, notwithstanding the marked improvement in the condition and produce of the Vines, as resulting from the work undertaken, Mr. Crump was determined to have better Grapes than were likely to be had from the Vines operated on; and to extend the culture of the Madresfield Court Grape; and made up his mind to establish a fresh batch of Vines in each of the five spacious vineries in this fine range, and in such a way, that the regular supply of Grapes would not suffer. With this object, having raised the required number of Vines from eyes at the beginning of 1886, and made a narrow border about 4 or 5 feet wide, measuring from the front wall on the inside of each vinery, the ample drainage being covered with turves grass side down. The compost which Mr. Crump finds best suited for Vines at Madresfield is two parts of the heavy loam of the district (turf cut very thinly, and ridged up for a few months, and which turns to clay when the fibre has decayed), one part burnt woodland refuse matter, and one part of old mortar-rubble, with a liberal admixture of half-inch bones and horn shavings—the whole having been well mixed before forming the borders with it in April or May last; and in the making of a border in July last a lot of rabbits' feet, cows' hoofs, and old rags (which could not be passed through the bone-mills) were used, and which ingredients, judging by the appearance of the Vines growing therein, are valuable additions to the composition of a Vine border. There are two other vineries besides those referred to above. The varieties grown are a few rods of Black Hamburgh for supplying Grapes about May 1; succeeding the Black Hamburghs are Madresfields and Muscat of Alexandria as long as they can be kept—as Earl Beauchamp requires no other Grape so long as the last-named two varieties can be obtained; Gros Colmar and Barbarossa, with Alicante and Lady Downe's for late bottling. The Vines thus planted, which have all made very satisfactory growth this year, are intended after a couple of years to take the place of those growing in the outside border, which will then be destroyed. A strip of the old border, about 5 feet wide, will be removed, the drainage re-arrange, and openings cut in the front wall of the various vineries to allow the roots of the Vines planted inside free access to the new border, which will then be made outside.

In the meantime the spurs will be cut clean away from the bottom part of the old Vines as far up as the young Vines, which are planted between them may require space for the development of lateral growth resulting from wood made in the previous year—that is, the spurs will be cut off the old Vines at pruning time each year as far up the individual rods as the points at which the young ones are shortened back to. Thus managed the vineries in question after next year (there being no occasion to crop the young Vines before then) will contain a full crop of Grapes from bottom to top summit. I think Mr. Crump intends doing away with the old Vines three years hence, by which time Grapes of the highest order may be expected at Madresfield Court, especially in the case of the excellent Grape of that name, inasmuch as three or four houses (all well heated and ventilated) are devoted to its culture.

In conclusion, I would strongly recommend that those readers of the *Gardeners' Chronicle* whose Vines are growing in outside borders, and which are not yielding such satisfactory crops of Grapes as could be desired, to adopt the method of procedure carried out with such promising results at Madresfield Court—a method of procedure which has everything to commend its adoption by gardeners situated as indicated, inasmuch, as already shown, as a set of

young Vines can be established in the same houses as those from which the regular supply of Grapes is obtained. This is a subject deserving of careful consideration on the part of many gardeners and amateurs, and Mr. Crump's method of refilling a vinery without lessening the Grape supply deserves much commendation. *H. W. W., December* 1, 1886.

HOME CORRESPONDENCE.

TRANSMISSION OF SEEDS FROM THE TROPICS.—Mr. Hart's note (p. 756, vol. xxvi.) goes a long way beyond the assertion of M. Thiery (see p. 497), the latter pointing out that in the tropics seeds of European plants lose their vitality much sooner than in Europe, which seems precisely what might be expected to happen, although the difference—as, for instance in the case of the seeds of Cabbage, viz. eight months in the tropics and eight or ten years in Europe, and Peas four months against four years—must be unusual.* Mr. Hart, however, seems to recommend hermetically sealed packages or packets for all seeds sent to the tropics, and condemns the paper bags generally used. Our experience at Kew is of course of a different nature from that of any one in the tropics, but we receive thousands of packages of seeds of all kinds annually from all parts of the world, and we send to the tropics almost as many. The safest and most successful method of packing to adopt for seeds sent from Kew to the tropics, and *vice versâ*, is therefore a matter of much interest here. Seeds badly harvested are not likely to stand a long journey, no matter how they are packed, but if gathered at the proper time, carefully dried and stored till ready for sending away, we believe the great majority of seeds travel best in paper packets, and these in a canvas bag, if to be sent by post. Large quantities of seeds may be sent in an ordinary box, but they should be stowed in a dry place on board ship. Seeds of an oily nature ought to be packed in damp soil as soon as they are ripe, and if the journey is not very long, they will grow when taken out of the soil and placed under favourable conditions. Even oily seeds will sometimes bear exposure to air and drought without suffering. We lately received from Demerara a quantity of seeds of Hevea Spruceana, which arrived quite dry, having been sent in an ordinary box; I believe every one of those seeds germinated, very much to our surprise. Palm seeds of all kinds, except, perhaps, Nipa fruticans, travel well if sent in ordinary canvas bags. The Right Hon. Sir M. E. Grant-Duff, late Governor of Madras, has forwarded thousands of packets of Indian seeds of all kinds to Kew within the last four years, and these were all packed dry, the packets (paper) being first bundled and enclosed in card-board to keep the seeds from being injured in the post, and then rolled in a canvas or paper wrapper. The bulk of these seeds have been sent on from Kew to the colonies, but almost every one of those kept at Kew germinated well. Sir F. von Mueller also sends many kinds of seeds from Australia, always in paper packets, and almost always successfully. Certainly at Kew we have every reason to prefer the paper packet and canvas bag to all other wrappers for use in the transmission of seeds generally to the tropics. With regard to the preservation of imported seeds, the circumstances here at Kew are the reverse of those referred to by M. Thiery and Mr. Hart. The difficulty of preserving tropical seeds in England must be less than that of preserving European seeds, such as Peas, Beans, &c., in the tropics. We do not require to keep many tropical seeds for any length of time, seldom more than a year, except in the case of Cucurbits and Cacti, but we do not find that seeds kept in paper packets in a drawer where the atmosphere is dry and the temperature about 60° in winter, lose their vitality within that time. Exceptional cases are of course excluded; there are many kinds of seeds which perish almost as soon as they get dry. The most important point of all in connection with the transmission and preservation of seeds is dryness without roasting, and a regular temperature at all times. For small packages of seeds the post is the safest and best means of transmitting them, and canvas bags or paper packets the best of all wrappers. How long a seed will remain good when kept in a seed-room depends on whether it is oily or starchy, oily seeds perishing in a short time, such being Tea, Coffee, Camellia, Theobroma, Walnuts, Brazil-nuts, &c. It is, however, impossible to draw a line between long-lived and short-lived seeds, as they are affected by many conditions perhaps not perceptible to us or altogether beyond our control. It is not pretended that the Kew method is the best possible, but so far as experience shows a better one has not been devised yet. I am afraid Mr. Hart's hermetically sealed packages would only add considerably to the labour and expense of seed packing without making any difference in the preservation of the seeds; on the contrary, we frequently find that seeds thus packed suffer much more than they would do if sent in bags of paper or canvas. *W. Watson, Kew.*

* Seeds of Kidney Beans, kept for two years in Jamaica, germinated freely when sown; Peas are supposed to retain vitality at least as long as these do in England, viz., three to five years.

PHASEOLUS CARACALLA.—I have read with much interest of the flowering of the above named creeper at Pendell Court Gardens, given by "J. F.," p. 791, vol. xxvi. of *Gardeners Chronicle*. The paragraph proved the more attractive to me, from having been a successful grower of the same species while serving as gardener to a lady in the South of England, and where I had the pleasure of seeing it flower about the year 1844 or 1845. I may mention that the seeds were brought from Rome by the lady herself, and giving them to me she expressed a wish to have them grown, at the same time explaining that the flowers resembled snails, and that the flowers only, instead of the beans, were cooked, and that they furnished a frequent dish at the hotel in Rome where she was staying. The cooking was done by simply dipping the flowers in boiling salad oil and serving them whole. The plant flowered with me the second year after raising it. The method I took was to plunge the pot in which it grew the first season up to the rim in a narrow border and train the growths up a rafter in the conservatory. It grew there to about 20 feet or more in length and produced its flower-racemes, about the end of September, near its top, when they proved a great attraction, for the edges of the flowers were sometimes suffused with a light blue colour, and were bold and attractive with a strong scent resembling that of a Hyacinth. The winter temperature was kept at

FIG. 8.—ZEBEL, TAURUS, FROM A SKETCH BY C. G. DANFORD, ESQ.; THE HOME OF CROCUS CANCELLATUS. (SEE P. 8.)

50° to 55°. It is a pity that so interesting a creeper is not found more generally in cultivation, forming as it does so very attractive an object amongst other creepers. *J. W.*

A LARGE GRAPE-BERRY.—I think it may seem to you worth while to record the appearance of a Grape-berry of, as I should judge, unexampled size. I reside at a country-house in Tuscany, and the berry in question was brought to me during the late vintage by one of the peasants belonging to the place, as being larger than any he had ever seen, although, as I understood, the Vine in question was apt to produce large single berries. The dimensions of the berry, carefully taken by myself, were as follows:—Placed on a table it stood in height 1 inch, in breadth 1¼ inch, in circumference 3¾ inches. Its shape, therefore, it will be seen, was neither oval nor round as Grapes generally are. It was an oblate-spheroid, suggesting that three large berries had cohered and grown into one [which was doubtless the case. ED.]. It had the appearance indeed of a small (black) Tomato, only its skin was not corrugated, but smooth. The kind of Vine which produced it is called here Giacomino. I have no means here of ascertaining the scientific name of the variety. It is reckoned among field Grapes that are used to make wine—not for the table; and the berries, as usual with wine Grapes, are small; but it is often used for the table, having a very good flavour and well-formed bunches. If my information be correct as to its tendency to produce large single berries, it might be worth the while of the scientific gardener to give it special cultivation, or to cross it with other kinds. The colour, I should mention, is dark. *T. B.*

THE POMEGRANATE. — Usually the Pomegranate (Punica granatum) is not considered sufficiently hardy for planting out-of-doors, even in the warmest parts of Britain; yet at Penrhyn Castle there is a fine plant about 5 feet square adorning a portion of the wall in the flower garden, and which has stood there uninjured through the frosts of several years. The flowers of the Pomegranate, the more commonly cultivated form, are scarlet, but there is likewise a white and yellow-flowered variety, as also a double-flowered, which, for ordinary decorative purposes, is far superior to any of the others. *A. D. Webster.*

THE CARNATION MAGGOT AT SLOUGH.—What may for present purposes be termed the Carnation maggot is working sad havoc both among Carnations and Picotees at Slough (see *Gardener's Chronicle*, p. 729, vol. xxvi.). It it is a small white maggot, something like in appearance that found within Apples, but decidedly smaller, and it would appear from present information that it works in a downward direction, entering the main stem of the plant at the top and working downwards through it; and by the time the soil level is reached the plant rots off at what florists term the "collar." In like manner it pierces the leaves, entering near the points and working along the midrib inside, leaving behind it a trail of corruption. Whence it came is a mystery. About three years ago a gentleman residing in Ealing took to Slough and submitted to Mr. Turner some plants of Souvenir de la Malmaison Carnation badly attacked by the maggot, and he lost the whole of them from this cause. The plants were not purchased at Slough, and there is no suspicion that it came to the Royal Nursery in this way; but it did soon after manifest its presence in the collection, but not in a way to cause concern. Last year it was in greater force; this season it is alarmingly so, and many plants are being lost through its ravages. It is more particularly noticed in the act of potting off the layers from the stock pots; consequently every plant has to be very carefully examined. It more particularly attacks Souvenir de la Malmaison: probably the thick fleshy leaves of this variety invite to a sumptuous repast. Whether the maggot is present in other collections remains to be seen, but if so, it will be interesting to know when it first appeared. *R. D.*

A RARE BRITISH PLANT.—Growing amongst the *débris* that has been removed from the lead mines in the woods at Gwydyr Castle, I have frequently seen the sweet little Thlaspi virens in abundance. Once in particular, and not many yards from where some fine tufts of the equally rare Forked Spleenwort (Asplenium septentrionale) grew, I noticed a whole eastern sloping bank of lead ore rubbish literally carpeted with the pretty white flowers of this interesting, pretty, but rather dubious species of Cress. I say doubtful species, for half our botanists consider the plant in question but a variety of T. alpestre; indeed, our greatest authority, the late Mr. Bentham, included it in his last British Flora as such. It is difficult to cultivate, as I know from experience, for every time I have the chance of procuring specimens I do so, although knowing well that they will not succeed. *A. D. Webster.*

GREEN FROGS.—In your Foreign Correspondence, Mr. Ross enquires if the remarkable adaptability of these pretty little tree frogs in varying their colour according to the plants or substances on which they rest has been noticed, I wish to mention that having kept these green frogs for some years, I have frequently observed the marked change of colour which they are capable of effecting. *J. T. Poë, Riverston.*

THE ONION.—From the article under this heading on p. 777 of vol. xxvi., three distinct varieties were, through an unfortunate oversight, omitted from notice. One of these is Danvers Yellow, an American variety introduced about 1849—50, of the type of the White Spanish, but of a more spherical form, when the typical character is represented; it is of good size when well grown, solid and heavy, early, and a remarkably good keeper. While a decidedly popular variety in the United States, and also in France, it does not appear to be so much grown in this country as its merits deserve. It should be sown in the spring, not in the autumn, as it is apt to run to seed in the spring without bulbing when sown at the latter time. When grown in this country it appears to take the flat form of the White Spanish, and be of a brownish-gold colour. The Trebons or Large Yellow Trebons, is a French variety, and was raised in the neighbourhood of Tarbes. It is an Onion of excellent quality, but apparently always more or less scarce, judging from the high price charged for it; and it does not appear to seed in this country. The bulbs are Pear-shaped, and attain to a large size; it is mild-flavoured and does not keep well. It can be sown either in the spring or autumn, and it can be strongly recommended for sowing in autumn, to grow for early summer exhibitions. The Giant Zittau is said to be a German variety, and it will be remembered that on the occasion of a trial of Onions at the Royal Horticultural Society's Gardens at Chiswick, a few years ago, it was awarded a First-class Certificate of Merit. It was represented by a large flat Onion, solid and heavy, and of a deep yellowish-brown colour. It is a good mid-season Onion when sown in spring, and it is a remarkably good keeper. It is said to succeed best on a light well-drained and well-manured soil. *Pisum.*

LOW-GROWING CROPS IN THE KITCHEN GARDEN.—There is, in gardens at this season, much difficulty in keeping up the supply of Spinach, Parsley, herbs, Sorrel, &c. Such things as admit of being sown or planted in beds of a size, that can be covered by glass-covered frames or hand-glasses, are better for the winter season than those sown in long lines; and this is especially true of Parsley and Spinach. Under the protection afforded by the glass, there is a little growth during the cold season, and moreover the produce is always comeatable; and even when snow is absent, frost can be kept out with the free use of straw mats or dry Fern. *G. C.*

TRANSPLANTING MACHINES.—My allusion was intended to convey the fact, that from the varied situations from which large trees were often required to be removed, it was almost impossible to make any machine suitable to all circumstances, hence the expression generally in use, the words being used in a relative, not in any individual sense. I am sure that the merits of Mr. Barron's machine will command for it a wide use, and I am glad to hear from him it is so; that, however, does not in any way alter the import of my communication. *C. S. F.*

FRUITS UNDER GLASS.

PINES.

THE temperatures of the house or pit containing plants which are intended to supply ripe fruit in June next should be raised to 65° at night, 70° by day with fire-heat, and 10° higher by sun-heat, at which point (80°) a little air should be given. The bottom-heat should range between 85° and 90°. Should any of the plants indicate dryness at the roots give sufficient tepid liquid manure to moisten the soil. Damp the pathways, walls, and plunging material more or less morning and afternoon on bright days with water the same temperature as the house; closing the latter sufficiently early to run the temperature up to 85°. Thus excited most of the plants if attended to as recommended in previous directions during the last six months, will show fruit by the third week in February.

SUCCESSIONAL PLANTS.

These should still be kept rather dry at the roots, giving water when necessary, and a night temperature of from 55° to 60°, 5° higher by fire-heat, during the day, running up 10° higher with sun-heat, and otherwise treat the house and plants as recommended above. Suckers also should be similarly treated, but the temperature may be two or three degrees less than that recommended for successions.

FRUITING PLANTS.

A night temperature of 70° should be maintained in the fruiting house, and 5° higher by day, with fire-heat, running it up 10° or 15° higher with sun-heat at closing time in the afternoon, when moisture should be distributed over the pathway, and plunging material between the plants. A low temperature and humid atmosphere, together with the soil being kept in a sloppy state at the roots, will not only cause the latter to perish, but the fruits to cease swelling, and ultimately to become black in the centre; therefore conditions so disastrous in their results as these must be rigorously guarded against.

MELONS.

In order to be able to cut ripe Melons at the end of April or early in May next, seeds of some approved variety—such as Blenheim Orange, Longleat Perfection, and Hero of Lockinge—should be sown singly in small pots in a mixture of finely sifted loam and leaf-mould, leaving room in the pots for top-dressing when the plants have made a couple of inches of growth, placing the pots in a hotbed, or over the hot-water pipes with a piece of glass over them until the seedlings appear, when they should be placed on a shelf near the glass, so as to prevent them from making a weakly growth.

CUCUMBERS.

Seeds of prolific, early kinds, should be sown forthwith and treated in the same way as advised for Melons until planting time arrives. *H. W. Ward, Longford Castle.*

FLORISTS' FLOWERS.

WINTER-FLOWERING TREE CARNATIONS.

A TWELVEMONTH ago a correspondent of yours sharply criticised a statement to the effect that certain named varieties were in flower at the Royal Nursery, Slough, during the months of November and December. Only a few days ago I had an opportunity of inspecting the collection growing in a good-sized and fully-exposed house in the nursery; and I found—in addition to a large number of seedlings that had been grown in the open air and were potted up in September and October—a goodly number of varieties, all blooming freely considering the season of the year. It should be stated that at the Royal Nursery there is a great demand for cut flowers during the winter, and, hence, as soon as a plant of a Tree Carnation gets well into bloom, it is sold or the flowers are cut. But among the varieties that can be denominated as autumn and mid-winter bloomers are the following:—Andalusia, primrose-yellow, fringed petals; A. Alegatière, bright red, medium-sized flowers, but very fine; Garibaldi, rosy-scarlet; Helena, bright rose; Indian Chief, dark maroon; Juliette, deep rose; La Florifère, pure white; Lord Rokeby, bright scarlet, very free; Miss Joliffe, pale pink, a universal favourite, and remarkably free; Mrs. Llewelyn, bright rose; excel-

lent habit; Seraph, deep rose, very fine, and Whipper-in, scarlet, with dark stripes, very free.

One secret of growing Tree Carnations into good plants and getting them into flower early in the winter, is to put in pipings as early as possible in March. As a matter of course, these Carnations are grown at Slough under the best conditions; they have a light airy house to themselves, and all the fire-heat that is given is just enough to keep them comfortable. It should be understood that they are not forced in the ordinary acceptation of the term; all that is done is to apply sufficient fire-heat to dispel damp and keep out frost, and where there is no frost air is plentifully given. The seedlings now blooming show wonderful constitutional vigour, and of those flowered for the first time this season a dozen or more have been selected for trial another year. Fully 95 per cent. of the seedlings are double flowers; but very few white or yellow varieties appear among them—yellows, in particular, being highly desirable. *R. D.*

HARDY FLOWERS: THE PANSY.

A very humble and easily grown plant, so much so that some persons may fancy it is not worth while writing about its culture. Plant out in ordinary garden soil a foot or more apart, and let the plants take care of themselves, may be the advice given. Alternate frosts and thaws throw the plants out of the ground, so that it is requisite they should be looked over after frosts, and pressed into the ground with the fingers. If any plants are eaten, slugs and the leather-coated grub may be suspected of the mischief, and should be watched for at night. The Pansy is not so well grown in pots as it ought to be; evidently its culture is not so well understood as it used to be a quarter of a century ago, or perhaps not so much care is bestowed on its culture. The soil ought now to be prepared for repotting—good loam, and a liberal portion of cow-manure and leaf-mould. Repotting may be performed any time before February 1; the plants ought now to be well established in large 60-sized pots. Three of these planted in an 8 or 9 inch pot will make grand specimens in May; but the plants should be kept in cold frames from which the lights are removed entirely whenever the weather is favourable.

THE ORCHID HOUSES.

ODONTOGLOSSUM VEXILLARIUM AND O. PULCHELLUM.

THESE two species of Orchids grow very well under similar treatment in a temperature during winter of from 55° to 60°, rising with sun-heat. The plants are placed on pots, the slate stage being covered with coal ashes, which are always kept damp. No Orchid will increase faster than O. vexillarium when in the right place; it will sometimes make three or four breaks from one growth of the previous year; and I have also observed fine specimens reduced to small plants after excessive flowering, the cause of this being in some cases attributed to leaving the bloom on for too long a time; but I think that a severe check in some way is more frequently the cause of mischief, by killing the roots at the same time that the plants have to support a large quantity of flowers. I think plants might get injured from various causes, such as a sudden change of the temperature of the house, or in the water supplied, or from the plants being taken from a warm to a cool-house. The best treatment is that in which all the changes of temperature should be as gradual as possible, even when the plants are grown in one house throughout the year. We have kept them in one house for some time past, and treated them to a little cooler temperature than the Cattleyas. Summer and winter, there are many Cypripediums that will grow well with O. vexillarium. There are growers who have no other convenience than the Cattleya and cool-houses in which to grow O. vexillarium, in that case it would be safer when the plants are placed in the latter; and to use the water from the Cattleya-house for a short time, and be careful not to let the temperature fall too low. I have tried to grow O. pulchellum in various cool houses, but never satisfactorily but when treated in the same way as O. vexillarium it makes fine pseudobulbs, and the flowers are also finer in size. The cool Odontoglossums will now have plenty of spikes showing, those from the strong plants or any that have not flowered before, should have a piece of cotton wool placed around their base to prevent slugs from damaging the flower-spikes. Strong plants of O. Halli and the O. luteo-purpureum section will sometimes, as soon as the growth has made up, start a new one. This often prevents them flowering, but if they be kept rather dry for two or three weeks it will induce them to throw up flower-spikes. Take care not to let the pseudobulbs shrivel or the foliage turn yellow. Odontoglossum nebulosum will be found to grow well at the warmest end of the cool-house placed in a light position. It should not be kept too wet at this season and never be watered over the new growth. Those who admire little gems as much as the larger and showier flowers will be pleased with Epidendrum Endresii. This Orchid has been flowering here in the Cattleya-house through December. I should say strong plants of this would flower more than once in the year, collectors having found it in bloom at different seasons—Mr. Endres gathered it in December, Mr. Lehmann in April. *C. Woolford, Downside.*

SCOTLAND.

NATURAL HISTORY SOCIETY OF ABERDEEN.

THIS Society met in Marischal College, Aberdeen, on Tuesday evening, December 21. Professor J. H. Trail, the President, occupied the chair. Dr. Trail thanked the members for having again elected him President, and expressed the pleasure it would give him to continue any services that he could render the Society. Professor Pirie, Mr. W. F. Webster, and Mr. George Tough, were admitted members of the Society. The President then proceeded to speak on the season's work, mentioning as one of the most interesting events of the year the visit of the Cryptogamic Society of Scotland to Aberdeen. Speaking of his work among new fungi, he said that of the specimens he had worked out between December 1 last year and October 27 of this year, 173 were new to the district, 100 were new to Scotland, and twelve were new specimens altogether. On the motion of Mr. Roy, the Secretary, a cordial vote of thanks was awarded to Dr. Trail for his communication. The Secretary then read a communication of the excursions of the Perthshire Society of Natural Science, and incidentally advocated that, like their Perthshire friends, they should have numerous excursions. Before the meeting separated it was resolved to hold an exhibition of specimens in Aberdeen, in the month of February.

SCOTTISH ARBORICULTURAL SOCIETY.

At a meeting of the Council of the Scottish Arboricultural Society on Dec. 23, it was announced that Her Majesty had given permission to the Society to visit the woods and forests at Balmoral during the first week of August, 1887.

A note was also read from Mr. John Michie, forester, Balmoral, one of the members of the Council of the Society, stating that he should be glad to assist in the carrying out of the excursion so far as may be in his power.

After consideration it was agreed that the competition essay list for next year should be as follows:—

Class I.—For Open Competion:—

1. The best and most complete original plan, accompanied with specifications and estimate, for the erection of a forester's cottage.

2. Essay on the comparative value of the newer Coniferæ, as ornamental or timber trees, in Britain, with date of introduction.

3. Report on the effects of the great gales of the last twenty-five years on the woods and forests of Britain. The report to give the date of gale and statistics of trees destroyed.

4. The history and details of management of the plantations on an estate for a period of not less than twenty years, giving the acreage, annual receipts and expenditure per acre.

6. Report on the comparative value of the different timber trees grown for profit in Britain, with rate of growth of each species in a given time.

7. Report on the plantations of which the competitor is forester. A medal to be awarded for the best report from England, Scotland, and Ireland, and competition to be confined to each country. Reporter to state the extent of plantations, the kinds of timber grown, soil, situation, age, management, &c.

8. Essay on the present state and future prospects of arboriculture in the county in which the competitor resides.

9. Essay on the best system of managing Oak plantations and Oak coppice.

10. Essay on best method of rearing underwood for game coverts in high forest.

11. Report on Coniferæ produced from home seed as compared with plants from foreign seed.

12. On the natural reproduction (by self-sowing) of forest trees.

13. Essays on the advantages of forming belts plantations on hill, pasture land; the proper width, the best system of draining and fencing, and the most suitable varieties of trees to be given.

14. Essay or report on an arboretum, with plan.

15. Report on the old or remarkable trees on the estate where the competitor resides, giving correct measurements of the circumference of the trunk at 3 feet and 5 feet from the ground; the height of the bole, the total height of the tree, and its cubic contents to 8 inches in diameter. Photographs or drawing to accompany the report.

16. Report on timber grown in Scotland and its uses. The writer to state the principal markets for the various classes of timbers, and the use to which such timber is generally put, with other details.

17. Essay on the best methods of utilising small-wood in the manufacture of fancy-wood articles, turnery, &c.

18. Essay on the best method of seasoning different timbers.

19. Essay on any disease incidental to forest trees.

20. Report (from personal knowledge) on the forests of any British colony.

21. Report (from personal knowledge) on the forests of the United States of America.

22. Report on the system of forest management in any foreign country.

23. Essay or report on any other subject connected with arboriculture.

24. For a new invention or a marked improvement on any of the implements used in forestry (models or implements to be accompanied by a report).

Class II.—For Assistant Foresters only:—

1. Essay on the formation of plantations. The writer to describe all operations necessary for laying out, planting, and managing plantations for the first twelve years.

2. Essay or report on the best method of renovating overgrown shrubberies. The writer to state the treatment required for the various species of plants.

3. Report on the management of a home nursery.

4. Essay on the best size of plants, and method of planting to produce the best results in different soils and situations.

5. Essay on the formation and management of live fences.

6. Essay on the best dead fence (iron, wire, wood, or stone), taking into consideration economy, efficiency, and durability, and detailing the method of erection and cost.

7. Essay on the peeling and harvesting of different kinds of British bark used in tanning.

8. For the best and approved model in rustic work or in ornamental woodwork of any subject designed

and executed by the competitor. Model not to exceed 6 feet in height.

9. For an essay or report on any other subject connected with arboriculture.

The prizes offered in each case are gold, silver, and bronze medals, or their value in money, ranging from £5 to 10s.

In connection with No. 7, Class II., a remark was made by the Chairman, that foresters were greatly handicapped in this country in preserving their bark by the weather. Mr. D. F. Mackenzie, Morton Hall, said there was no doubt that the tannin was washed out of the bark when it was exposed to the rain. The Chairman said that the bark should be dried under cover. A tanner had said to him that more Scottish bark would be used if that were done. The Americans had tried sending over the tannin extracted from the bark in barrels, but it had been found not to work so well. *Scotsman, December* 24, 1886.

ABERDEEN SEED TRADE.

The *conversazione* of the members of the seed trade, held at the Albert Hall, Aberdeen, on December 23, was a brilliant success. Friendly gossip, a formal address from the Chairman, Mr. Cocker, a concert, a recitation, a ball, and of course a supper formed a pretty complete programme. The Chairman alluded to the success of the Association, which is henceforth to be extended so as to include the nursery as well as the seed trade; and intimated that, in spite of trade depression, the seedsmen had not suffered so much as some other traders. The hall and its approaches were profusely decorated with plants and flowers from the local nurserymen. Among those present were Councillor Lyon, Councilor Byres, Major Crombie, Mr. George Bruce, Mr. D. C. Darling (Cardno & Darling), Mr. C. W. Duthie (Leslie & Duthie), Mr. William Reid, Mr. William Gordon, Mr. Alexander Hay (Benjamin Reid & Co.), Mr. A. Robson (Smith & Son), Mr. James Connon, &c.

SOCIETIES.

ROYAL HORTICULTURAL.

THE following is a complete list of gentlemen appointed to sit on the various Committees in 1887:—

SCIENTIFIC COMMITTEE.

Chairman.—Sir Joseph Dalton Hooker, K.C.S.I., M.D., C.B., F.R.S., V.P.L.S., The Camp, Sunningdale.

Vice-Chairmen.—F. Du Cane Godman, F.R.S., 10, Chandos Street, Cavendish Square; Maxwell T. Masters, M.D., F.R.S., Mount Avenue, Ealing, W.; Rev. M. J. Berkeley, F.R.S., Sibbertoft, Market Harborough.

Hon. Secretary.—Rev. Professor G. Henslow, M.A., F.L.S., F.G.S., Drayton House, Ealing.

Bennett, Alfred W., M.A., B.Sc., F.L.S., 6, Park Village East, W.
Boulger, G. S., F.L.S., 9, Norfolk Terrace, Bayswater, W.
Burbidge, F. W., F.L.S., Trinity College Gardens, Dublin.
Church, A. H., F.C.S, Royston House, Kew.
Dod, Rev. C. Wolley, Edge Hall, Malpas, Cheshire.
Ellacombe, Rev. Canon, Bitton.
Fream, Professor William, College of Agriculture, Downton, Salisbury.
Gardiner, Professor Walter, Clare College, Cambridge.
Glaisher, James, F.R.S., Dartmouth Place, Blackheath.
Houston, D., F.L.S., 179, Mayall Road, Herne Hill, S.E.
Lowe, Dr. Wm. Hy., Woodcote, Inner Park Road, Wimbledon.
Llewelyn, J. T. D., F.L.S., Penllergare, Swansea.
Lynch, R. Irwin, A.L.S., Botanic Gardens, Cambridge.
Maw, Geo., F.L.S., Benthall, Kenley, Surrey.
McLachlan, R., F.R.S., Westview, Clarendon Road, Lewisham.
Michael, Albert D., F.L.S., Cadogan Mansions, Sloane Square, S.W.
Morris, D., F.L.S., Assistant Director, Royal Gardens, Kew.
Murray, G., F.L.S., Natural History Museum, South Kensington, S.W.
O'Brien, James, Harrow-on-the-Hill.
Pascoe, F. P., F.L.S., 1, Burlington Road, Westbourne Park, W.
Plowright, C., F.L.S., 7, King Street, King's Lynn.
Ridley, Henry N., B.A., F.L.S., Natural History Museum, South Kensington, S.W.
Smee, A. H., The Grange, Wallington, Surrey.
Smith, Worthington G., F.L.S., High Street, Dunstable.
Ward, Professor Marshall, The Laurels, Englefield Green, Staines.
Wilson, A. Stephen, North Kinmundy, Summerhill, Aberdeen.

FRUIT COMMITTEE.

Chairman.—Robert Hogg, LL.D., F.L.S., 99, St. George's Road, S.W.

Vice-Chairmen.—John E. Lane, Berkhampstead; T. F. Rivers, Sawbridgworth; Arthur W. Sutton, Reading.

Secretary.—Archibald F. Barron, Royal Horticultural Society, Chiswick, W.

Barr, Peter, 12, King Street, Covent Garden.
Blackmore, R. D., Teddington.
Bunyard, George, The Old Nurseries, Maidstone.
Burnett, J., The Gardens, Deepdene, Dorking.
Crowley, Philip, Waddon House, Croydon.
Denning, W., The Gardens, Londesborough Lodge, Norbiton, Surrey.
Fitt, Joseph, Cashiobury Park Gardens, Watford.
Ford, Sidney, The Gardens, Leonardslee, Horsham.
Goldsmith, G., The Gardens, Floore House, Weedon.
Haywood, T. B., Woodhatch Lodge, Reigate.
Lee, John, 78, Warwick Gardens, W.
Miles, George T., The Gardens, Wycombe Abbey, High Wycombe.
Myers, Jonathan, The Grove, Watford.
Norman, G., Hatfield House Gardens, Hatfield.
Paul, William, Waltham Cross, N.
Pearson, Alfred H., The Nurseries, Chilwell, Notts.
Roberts, J., The Gardens, Gunnersbury Park, Acton.
Ross, Chas., The Gardens, Welford Park, Newbury.
Rutland, F., The Gardens, Goodwood, Chichester.
Saltmarsh, T. J., The Nurseries, Chelmsford.
Smith, James, The Gardens, Mentmore, Leighton Buzzard.
Veitch, H. J., F.L.S., Royal Exotic Nursery, Chelsea, S.W.
Warren, W., Worton Gardens, Isleworth.
Weir, Harrison, Hinwick, Lansdowne Road, Tunbridge Wells.
Willard, Jesse, Holly Lodge Gardens, Highgate, N.
Woodbridge, John, The Gardens, Syon House, Brentford.

FLORAL COMMITTEE.

Chairman.—Geo. F. Wilson, F.R.S., Heatherbank, Weybridge Heath.

Vice-Chairmen.—J. Shirley Hibberd, 1, Priory Road, The Green, Kew; Rev. W. Wilks, Shirley Vicarage, Croydon; Major Lendy, F.G.S., F.L.S., Sunbury-on-Thames.

Secretary.—Archibald F. Barron, Royal Horticultural Society, Chiswick, W.

Baines, Thomas, Fern Cottage, Palmers Green, N.
Ballantine, H., The Dell Gardens, Egham.
Bennett, H., Shepperton, Walton-on-Thames.
Bradshaw, A., Waddesden Manor Gardens, Aylesbury.
Dean, R., Ranelagh Road, Ealing.
Dominy, John, 11, Tadema Road, Chelsea, S.W.
Douglas, J., The Gardens, Great Gearies, Ilford, E.
Duffield, G., The Gardens, Bramford Lodge, Winchmore Hill, N.
Fraser, John, Lea Bridge Road, Leytonstone.
Goldring, Wm., 52, Gloucester Road, Kew.
Herbst, H., Kew Road, Richmond, Surrey.
Hill, E., The Gardens, Tring Park, Tring.
Holmes, W., Frampton Park Nurseries, Hackney.
Hudson, James, The Gardens, Gunnersbury House, Acton.
Lowe, Dr. W. H., Woodcote, Inner Pard Road, Wimbledon.
Masters, Maxwell T., M.D., F.R.S., Mount Avenue, Ealing.
Maw, George, F.L.S., Benthall, Kenley, Surrey.
Noble, C., Sunningdale Nursery, Bagshot.
O'Brien, James, West Street, Harrow-on-the-Hill.
Paul, George, "Old" Nurseries, Cheshunt, N.
Perry, Amos Isaac, Stamford Road, Page Green, Tottenham.
Pilcher, Charles, 84, Ringford Road, West Hill, Wandsworth.
Pollett, H. M., Fernside, Bickley, Kent.
Turner, Harry, Royal Nursery, Slough.
Walker, J., Whitton, Middlesex.
Wynne, Brian, 17, Catherine Street, Strand, W.C.

Obituary.

MR. H. M. JENKINS, F.G.S., the popular Secretary of the Royal Agricultural Society of England, who began life as a geologist, died recently at his residence at New Barnet, after a severe illness which had for some days caused his friends considerable anxiety. Our regret (*Times*) at making this announcement will be shared by the general body of agriculturists in this country and many on the Continent, by whom, and especially by the 10,000 members of the Society which he so well represented, his death will be regarded as a serious loss, and one that cannot be easily replaced. Notwithstanding the many duties belonging to his official position, his energies found vent in the performance of useful public service in many directions, not the least important of which was in connection with the Royal Commission on Agricultural Depression, presided over by the Duke of Richmond and Gordon. Mr. Jenkins was specially deputed by the Commissioners to collect evidence relating to the agriculture of the north-west of France and the Netherlands, and his reports thereon abound with information, often quoted in the agricultural Press, and greatly prized by British farmers. The same remark applies to Mr. Jenkins' reports on agricultural education to his colleagues on the Royal Commission on Technical Instruction, while the annual *Journals* of the Royal Agricultural Society bear ample evidence to his untiring industry.

MARSHALL WILDER.—We regret to have to announce the death of our venerable friend and correspondent, the Hon. Marshall Pinckney Wilder, of Boston, U.S., who died on December 17, in his 89th year. After a successful career in business, he devoted himself specially to Horticulture and Agriculture, being one of the founders of the Massachusetts Horticultural Society and often its President. He also held for many years the office of President of the American Pomological Society, a vast Association which may well excite our envy from the completeness of its organisation. His services to Agriculture were no less marked and constant, and we read of him as the founder of societies, colleges, and other institutions, destined to benefit cultural science and practice. Marshall Wilder also took much interest in military matters and few things gave him greater pleasure than the establishment of friendly relationships with the Hon. Artillery Company of London and that of Boston. Col. Wilder nominated as honorary members of the Boston Corps the Prince Consort, and (on the fiftieth anniversary of his own membership) the Prince of Wales. His devotion to literary and genealogical pursuits was scarcely less remarkable. Here again we find him acting as founder or President, or in some other capacity demanding administrative ability and sympathy with men as well as with the objects of the society. In matters horticultural he was the determined advocate of progress, and emphatic in urging that that progress must be effected by the improved education of gardeners of all degrees and by the practical application of scientific knowledge. Hence his oft re-iterated injunction to his hearers to make constant experiments in hybridisation, in selection, and in planting under various circumstances. His numerous addresses were marked by great eloquence and felicity of diction, and to the end were characterised by a deep sense of gratitude for the past, and a hopeful confident spirit for the future, such as is not always found in a man of his years. Our last letter from him was in March last, when he mentions himself as "still living, and con-

tinuing to stir up the soil to see what it will produce." This phrase was eminently characteristic of the man. Colonel Wilder was a foreign member of our Horticultural Society, and on the occasion of his eighty-eighth birthday a congratulatory letter was despatched to him from the Scientific Committee. A portrait of the deceased gentleman will be found in our columns at p. 463, 1872.

NOTICES TO CORRESPONDENTS.

TO THE TRADE.—Members of the Trade will oblige by sending notes of matters of Trade interest, Cultural or Commercial. Short notes of daily experience are what are most useful.

INTELLIGENT READERS, DO PLEASE NOTE.—*Letters relating to* ADVERTISEMENTS, *or to the supply of the Paper, should be addressed to the* PUBLISHER, *and not to the Editor.*

ADDENDA.—PREHISTORIC WHEAT: The illustration in our last number, fig. 156, p. 808, was a photographic reproduction from Nature direct on to the wood block, so executed that the comparative sizes of the grains might be shown with perfect accuracy.

CALLITRIS.—*E. C. L.* The tree in question belongs to the Cypress division of Conifers, and is nearly allied to the true Cypresses and to Thuyas. The species you mention is a native of Algeria, and supplies very handsome timber, supposed to have supplied the Citron wood so highly prized by the Romans that Horace suggests that a temple should be constructed from it to enshrine a marble statue of Venus.

NAMES OF FRUITS: *Thos. Dennw. Arple:* King of the Pippins. *Pear:* Bergamotte d'Esperen.—*James and Jno. Foster.* Green Pear is Beurré Bachelier; 1, Dr. Trousseau.

NAMES OF PLANTS: *J. McL.* Lælia albida bella. L. acuminata.—*P. & S.* Odontoglossum tripudians, —*X.* Saccolabium giganteum.

OVERBLOWN CONIFERS: *G. L.* Where these have attained a height of 6 to 10 feet, and have been overturned by the weight of the snow falling on them, they can be put into an erect position again by carefully lifting the stem (which may, for greater security, have a stout rod of Hazel or Ash tied to it for its whole length), and making it fast with several straw ties or loops to three stout stakes driven deeply into the soil at points equidistant from each other, and 1 foot from the stem. Larger trees, when overturned, have their roots uplifted on one side; in which case the soil must be thrown out of the hole made on the raised side, so as to admit of the roots being placed in their former position without using force. When that is effected and the ground made firm, if not so wet as to prevent that being done, three stumps of hard-wood must be driven into the ground opposite the extremities of the branches, and after placing a stout band of leather or carpet tightly round the stem at two-thirds its height, round which stout iron wire can be attached, and made fast to the stumps. Great care must be taken to prevent abrasion of the stem, or movement of the stumps.

SNOW ON EVERGREEN SHRUBS AND TREES.—*S. C.* The loss of branches would be greatly lessened if the gardeners turned out at intervals during a snow fall, and with long, forked sticks, to which some soft rag was bound in the fork to prevent barking of the branches, swayed and shook the heavily-laden portions of the trees and shrubs. Junipers, Thuias, Irish Yews, and bushy evergreens of large size and weak growth should have stakes fixed around them, and be drawn together slightly by means of a straw band or stout cord passed round, and fastened to the stakes.

THE SPARY FUND: The following sums have been received up to the present moment, and forwarded by Mr. H. Cannell, of Swanley, to Mr. Spary:—7*s.* 6*d.*, to which Mr. Cannell added 5*s.*; and 10*s.* from Mr. Eckford, to which Mr. Cannell also added 5*s.*

*** All communications intended for publication should be addressed to the "*Editor.*" Such communications should be *written on one side only of the paper* and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

CATALOGUES RECEIVED.

CHARLES SHARPE & Co., Sleaford—Wholesale Seed List.
IRELAND & THOMSON, 81, Princes Street, Edinburgh, N.B.—Vegetable and Flower Seeds.
F. SANDER & Co., St. Alban's—Wholesale Seed Catalogue.
ALEX. DICKSON & SONS, 55, Royal Avenue, Belfast —Vegetable and Flower Seeds.
ALFRED LEGERTON, 5, Aldgate, London, E.—Trade Seed Catalogue.
THOMAS BUTCHER, Station Road, South Norwood.—Garden Seeds.
THOMAS METHVEN & SONS, 15, Princes Street, Edinburgh, N.B.—Garden and Agricultural Seeds.
STUART & MEIN, Kelso, N.B.—Spring Catalogue.
WATKINS & SIMPSON, Exeter Street, Strand, London, W.C.—Wholesale Seed Catalogue.
E. P. DIXON, Hull—Garden and Farm Seeds.

COMMUNICATIONS RECEIVED.—J. W. (we have forwarded your letter to Mr. C., and will publish his answer).—Thos. Matheson (many thanks).—A. D.—G. A., Earlswood (please send full name.—W. E.—J. H. H.—P. L. S.—W. P.—R. J. L.—*Journal of Horticulture* (too late).—J. D. M., Boston, U.S.—W. R., Aberdeen.—G. N.—P. T. I.—J. C.—H. Correvon, Geneva.—G. N.—G. H.—W. K.—J. W.—T. W.—G. M.

THE WEATHER.

AVERAGE MEAN TEMPERATURE OBSERVED AT CHISWICK FOR THE WEEK ENDING, JANUARY 8.

January 2	36°.7	January 6	36°.4
„ 3	36°.6	„ 7	36°.3
„ 4	36°.5	„ 8	36°.3
„ 5	36°.4	Mean for the week ...	36°.4

THE PAST WEEK.

The following summary record of the weather for the week ending December 27, is furnished from the Meteorological Office:—

"The Weather has been in a cold and unsettled condition over the whole kingdom. During the earlier part of the period falls of rain, sleet, or snow were frequent, but during Sunday steady rain, followed by extremely heavy and continuous snow, set in over all the more southern parts of the kingdom.

"*Temperature* has been below the mean in all districts. In the 'Channel Islands' the deficit was only 1°, but in the other districts it was as much as from 3° to 5°. The highest of the maxima, which were recorded on the 21st at most of the western and northern stations, and on the 24th, in most other localities, ranged from 42° in 'England N.E,' and 'England E.' to 52°, in 'Ireland S.' The lowest of the minima, which were generally registered on the 21st, varied between 10° and 13° in most of the 'grazing' districts, and between 12° and 19° in the 'wheat-producing' districts.

"*Rainfall* has been more than the mean in all districts except England, N.E.; over southern England the excess (consisting chiefly of melted snow) has been very large. The largest amounts reported at any individual stations for the rain and snow-fall of the 26th, were 2.88 inches at Southampton (in nineteen hours), and 2.46 inches at Stowell. At the latter station, as much as 1.96 inches was yielded by the melted snow alone. At Plymouth 1.8 inches of rain fell between noon and 6 P.M. during a gale from the north-eastward.

"*Bright sunshine* shows a general decrease, the percentages of the possible amount of duration ranging from 16 in 'Ireland, N.,' to 32 in 'England, S.W.'

"*Depressions observed.*—As the period commenced a depression was approaching our north-west coasts from the Atlantic. By 8 A.M. on the 22d its centre lay over northern Ireland, where it broke into two parts, one of which disappeared to the northward of Scotland, and the other, after moving south-eastwards to Holland, passed away in a north-easterly direction to the Baltic. The winds caused by this system were generally strong from the south-westward, and in many places they attained the force of a gale. On the 24th a depression was shown near the Shetlands and some subsidiary disturbances over England and Scotland. As these passed away the barometer rose briskly, but during the 26th the centre of a deep depression travelled quickly up the Channel, bringing very strong winds or gales to all the more southern parts of the kingdom—from the southward or south-eastward as the disturbance advanced, and from the westward or north-eastward in its rear."

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 42° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	Temperature. Above or below the Mean for the week ending Dec. 27.	Accumulated. Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Dec. 29, 1885.	Below 42° difference from Mean since Dec. 29, 1885.
Principal Wheat producing Districts.		Day-deg.	Day-deg.	Day-deg.	Day-deg.
0. SCOTLAND, N. ...	5 below	0	51	− 140	+ 118
1. SCOTLAND, E. ...	5 below	0	60	− 60	+ 130
2. ENGLAND, N.E. ...	4 below	0	54	− 46	+ 169
3. ENGLAND, E. ...	5 below	0	61	+ 79	+ 209
4. MIDLAND COS. ...	3 below	0	48	+ 33	+ 144
5. ENGLAND, S. ...	4 below	1	44	+ 97	+ 171
Principal Grazing, &c., Districts.					
6. SCOTLAND, W. ...	3 below	0	34	− 207	+ 129
7. ENGLAND, N.W. ...	4 below	0	37	− 74	+ 182
8. ENGLAND, S.W. ...	3 below	11	39	− 99	+ 273
9. IRELAND, N. ...	4 below	0	37	− 150	+ 109
10. IRELAND, S. ...	4 below	8	42	− 113	+ 139
— CHANNEL ISLANDS	1 below	26	7	+ 33	+ 93

DISTRICTS.	Rainfall. More or less than the Mean for the Week.	No. of Rainy Days since Dec. 29, 1885.	Total Fall since Dec. 29, 1885.	Bright Sunshine. Percentage of possible duration for the Week.	Percentage of possible Duration since Dec. 29, 1885.
Principal Wheat-producing Districts.	Tenths of Inch.		Ins.		
0. SCOTLAND, N. ...	3 more	257	37.9	20	29
1. SCOTLAND, E. ...	1 more	201	25.2	17	31
2. ENGLAND, N.E. ...	0 (aver.)	195	29.0	28	27
3. ENGLAND, E. ...	9 more	189	25.8	17	34
4. MIDLAND COS. ...	7 more	198	32.7	31	29
5. ENGLAND, S. ...	18 more	192	32.3	26	34
Principal Grazing, &c., Districts.					
6. SCOTLAND, W. ...	6 more	213	45.9	17	28
7. ENGLAND, N.W. ...	3 more	210	42.8	26	28
8. ENGLAND, S.W. ...	10 more	215	45.8	32	33
9. IRELAND, N. ...	7 more	228	42.0	16	26
10. IRELAND, S. ...	5 more	222	45.2	26	29
— CHANNEL ISLANDS	11 more	246	37.6	30	41

MARKETS.

COVENT GARDEN, December 30.

SINCE the holidays business has been at a standstill, there being few arrivals on our market. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apple, ½-sieve	1 6– 3 6	Lemons, per case ...	12 0–21 0
— Nova Scotia, brl.	8 0–12 0	Pears, per dozen ...	2 0– 4 0
Grapes, per lb. ...	1 0– 2 6	Pine-apples, Eng., lb.	1 0– 1 6
Kent Cobs, 100 lb. ...	65 0 70 0	— St. Michael. each	1 6– 6 0

VEGETABLES—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, per doz...	4 0– ...	Mushrooms, punnet	1 6– 2 6
Beans, Kidney, lb. ...	1 0– ...	Mustard and Cress, punnet	0 4– ...
Beet, red, per dozen	1 0– 2 0	Onions, per bushel ...	3 0– ...
Brussels Sprouts, lb.	0 3– ...	Parsley, dozen bunch	4 0– ...
Carrots, per bunch...	0 6– ...	Potatos, per cwt. ...	4 0– 5 0
Cauliflowers, per doz.	3 0– ...	,, kidney, per cwt.	4 0– 5 0
Celery, per bundle ...	1 6– 2 0	Seakale, per punnet	2 6– ...
Cucumbers, each ...	0 6– 1 0	Shallots, per lb. ...	0 3– ...
Endive, per dozen ...	1 0– 2 0	Spinach, per bushel...	5 0– ...
Green Mint, bunch...	1 3– ...	Sprue, bundle ...	1 0– ...
Herbs, per bunch ...	0 4– ...	Tomatos, pet lb. ...	1 0– 1 6
Leeks, per bunch ...	0 3– ...	Turnips, bunch ...	0 4– ...
Lettuce, per dozen ...	1 0– 1 6		

POTATOS.—Regents, 80s. to 100s.; Magnums, 70s. to 90s. per ton.

PLANTS IN POTS.—AVERVGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz.	6 0–18 0	Ficus elastica, each .	1 6– 7 0
Arum Lilies, dozen...	18 0–24 0	Ferns, in variety, per dozen	4 0–18 0
Azaleas, per dozen...	24 0–42 0	Foliage plants, various, each	2 0–10 0
Begonias, per dozen	6 0–12 0	Hyacinths, 12 pots...	9 0–12 0
Bouvardias, doz. ...	9 0–12 0	Marguerite Daisy, per dozen	6 0–12 0
Cyclamens, dozen ...	12 0–24 0	Myrtles, per dozen...	6 0–12 0
Cyperus, per dozen .	4 0–12 0	Palms, in var., each	2 6–21 0
Dracæna terminalis, per dozen ...	30 0–60 0	Pelargoniums, scarlet, per doz. ...	3 0– 6 0
— viridis, per doz.	12 0–24 0	Poinsettias, dozen ...	12 0–18 0
Epiphyllum, dozen...	18 0–30 0	Primula sinensis, per dozen	4 0– 6 0
Erica gracilis, doz....	9 0–12 0	Solanums, per dozen	9 0–12 0
— hyemalis, doz. ...	12 0–24 0	Spiræa, per dozen ...	12 0–24 0
— regerminans, doz.	8 0–12 0	Tulips, 12 pots ...	6 0– 8 0
— various, dozen ...	9 0–24 0		
Euonymus, in var., per dozen	6 0–18 0		
Evergreens, in var., per dozen	6 0–24 0		

CUT FLOWES.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Arum Lilies, 12 blms.	6 0– 9 0	Pelargoniums, per 12 trusses	1 0– 1 6
Azaleas, 12 sprays ...	0 9– 1 6	— scarlet, 12 trusses	6 0–12 0
Bouvardias, per bun.	0 6– 1 0	Primulas, single, 12 bunches	4 0– 6 0
Camellias, 12 blooms	2 0– 4 0	Roses, Tea, per doz.	1 0– 3 0
Carnations, 12 blms.	1 0– 3 0	— red, per dozen ...	1 0– 2 0
Chrysanth., 12 blms.	0 6– 2 0	— red, French, doz.	1 6– 2 0
— 12 bunches ...	4 0–12 0	— Saffrano, Fr. doz.	0 6– 2 0
Eucharis, per dozen	4 0– 8 0	Stephanotis, 12 spr.	6 0–12 0
Gardenias. 12 blooms	6 0–12 0	Tropæolums, 12 bun.	1 0– 2 0
Heliotrope, 12 spr.	0 6– 1 0	Tuberoses, 12 blms....	1 0– 2 0
Jasmine, white, bun.	0 6– 0 9	Violets, 12 bunches...	1 6– 2 0
Lapageria, red, 12 blooms	1 0– 2 0	— Parme, French, per bunch	6 0– 7 6
— white, 12 blooms	2 0– 4 0	— Czar, Fr., bunch	2 0– 2 6
Marguerites, per 12 bunches	3 0– 6 0		
Mignonette, 12 bun.	1 0– 3 0		

SEEDS.

LONDON: *Dec.* 29, 1886.—Messrs. John Shaw and Sons, Seed Merchants, of 37, Mark Lane, E.C., write that the Seed Market to-day presented quite a holiday appearance. Quotations of all descriptions are consequently nominal. With a resumption of business, a good trade in seeds is anticipated. Stocks are moderate, and prices exceedingly low. No overwhelming supply of Cloverseed can come from America, and English country seedsmen have yet to lay in their supplies. There is no change to be noted in regard to Birdseeds. Blue Boiling Peas and Haricot Beans realise former terms.

FRUIT AND VEGETABLE.

COLUMBIA (EAST LONDON): *Dec.* 29.—There were fairly good supplies, with a moderate demand at the following rates:—Cauliflowers, 2s. to 4s. per dozen; Cabbages, 2s. to 4s. per tally; Savoys, 2s. to 3s. do.; Spinach, 2s. 6d. to 4s. per sieve; Brussels Sprouts, 2s. 6d. to 4s. per bushel; greens, 3s. to 5s. per dozen bunches; Turnips, 2s. to 3s. do.; Carrots, 1s. 6d. to 2s. do.; Onions. 4s. to 4s. 6d. per cwt; Carrots, 19s. to 25s. per ton; Mangels, 15s. to 16s. do.; Apples, 4s. 6d. to 7s. 6d. per bushel; Pears, 5s. to 10s. do.; stewing ditto, 2s. 6d. to 5s. do.

STRATFORD: *Dec.* 28.—The market has been well supplied with all kinds of produce during the past week, and a fair trade has been done at the undermentioned quotations:—Savoys, 4s. to 5s. per tally; Turnips, 2s. to 2s. 6d. per dozen bunches; ditto, 30s. to 40s. per ton; Carrots, household, 30s. to 35s. do.; Parsnips, 9d. to 1s. per score; Mangels, 14s. to 17s. 6d. per ton; Swedes, 15s. to 23s. do.; Watereress, 6d. per dozen; Celery, 9s. to 11s. per dozen rolls; Mistleto, 10s. per crate; Holly. 1s. to 1s. 6s. per bale; Horseradish, 9d. to 1s. per bale; Laurel, 6d. per bunch; Sprouts, 1s. 9d. to 2s. per half-sieve.

POTATOES.

BOROUGH AND SPITALFIELDS: *Dec.* 28.—Adequate supplies and slack trade. Regents, 70s. to 110s.; Magnum Bonums, 50s. to 95s. per ton.

STRATFORD: *Dec.* 28.—Quotations: Best Magnums, 65s. to 75s.; Fenland, 50s. to 60s.; Champions, 50s. to 65s. per ton.

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,, mixed colours, 3s. to 6s. per doz. CATALOGUES gratis.
JOHN LAING AND CO., Nurseries, Forest Hill, S.E.

WINTER FLOWERING PLANTS.
ERICA SCABRIUSCULA, in flower, 12s. per dozen.
,, HYEMALIS, in flower, 12s. to 18s. per dozen.
,, WILMOREANA, full of flower-bud, 12s. to 18s. per doz.
,, SINDRYANA, full of flower-bud, 12s. per dozen.
GARDENIA, bushy and well budded, 18s. per dozen.
AZALEA INDICA, in variety. full of bud, 18s. per dozen.
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Full LIST on application.
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(Established 1841)

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REPORTS of EXHIBITIONS, REVIEWS of BOOKS, and

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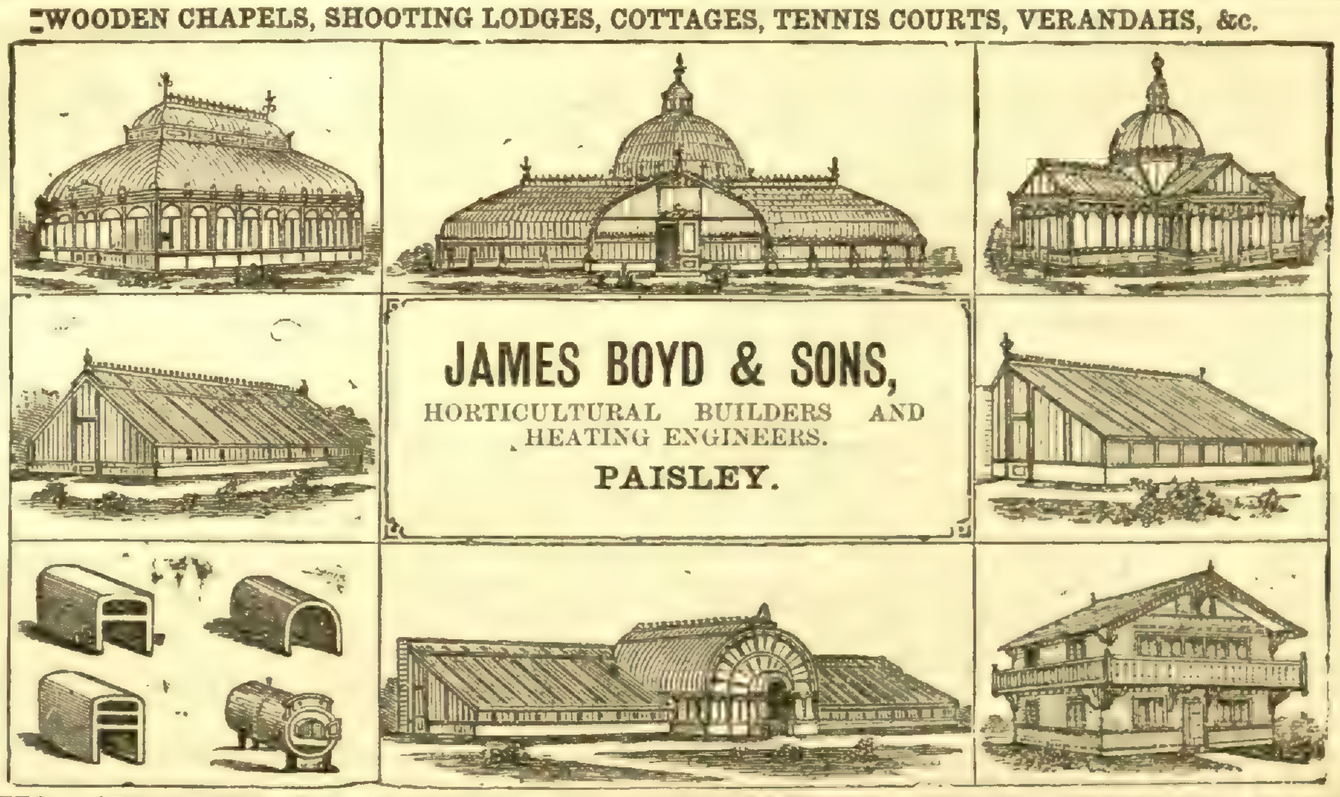

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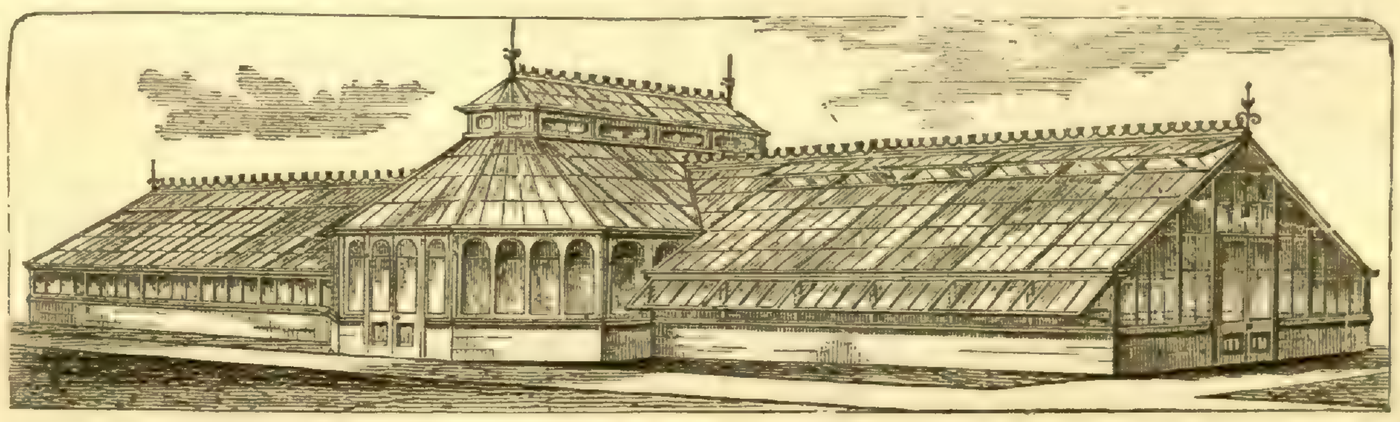

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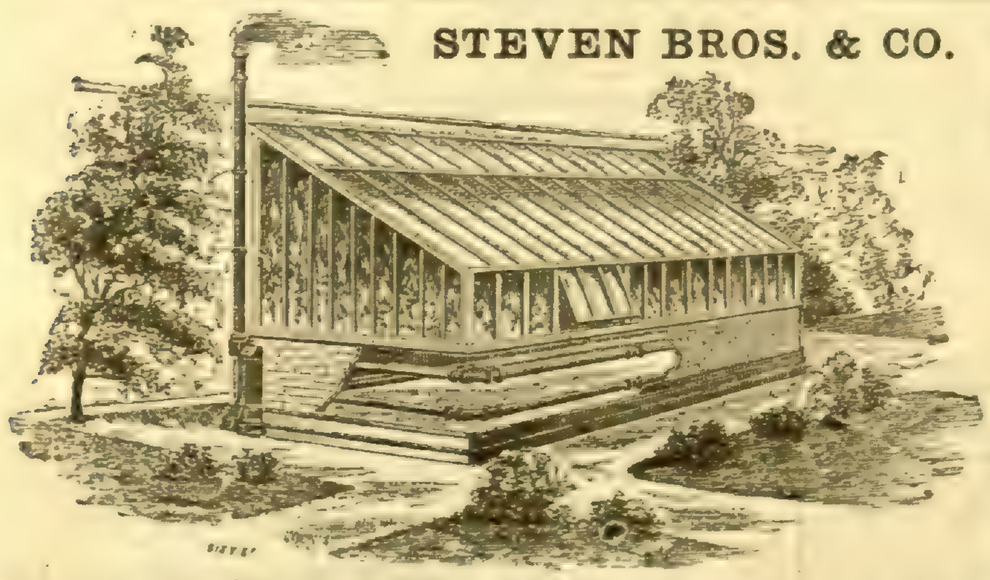

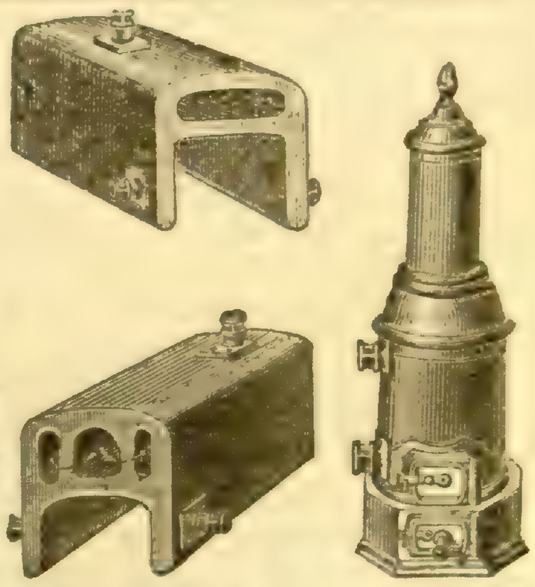

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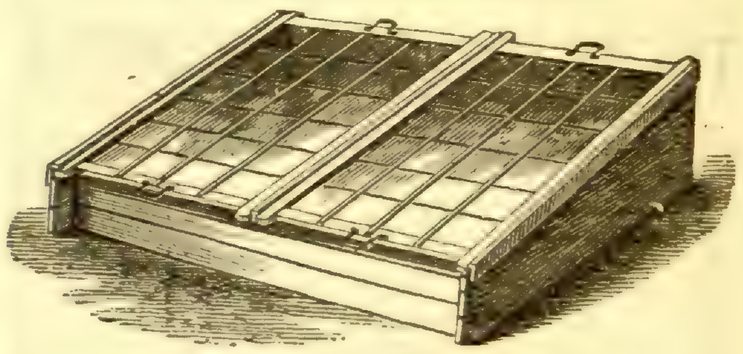

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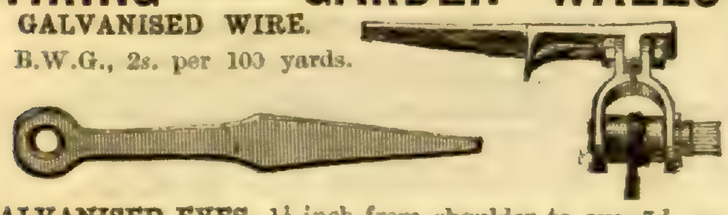

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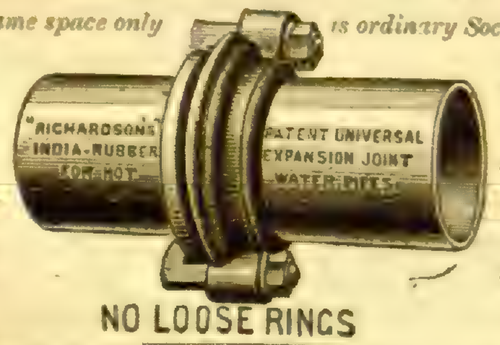

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SADDLE BOILERS, With WATERWAY BACKS and WELDED BOILERS, any of which are specially adapted for Heating Greenhouses, Conservatories, Churches, Chapels, Schools, Public Buildings, Entrance Halls, Warehouses, Workshops, &c. They are the neatest, cheapest, most effective, and durable of any extant.

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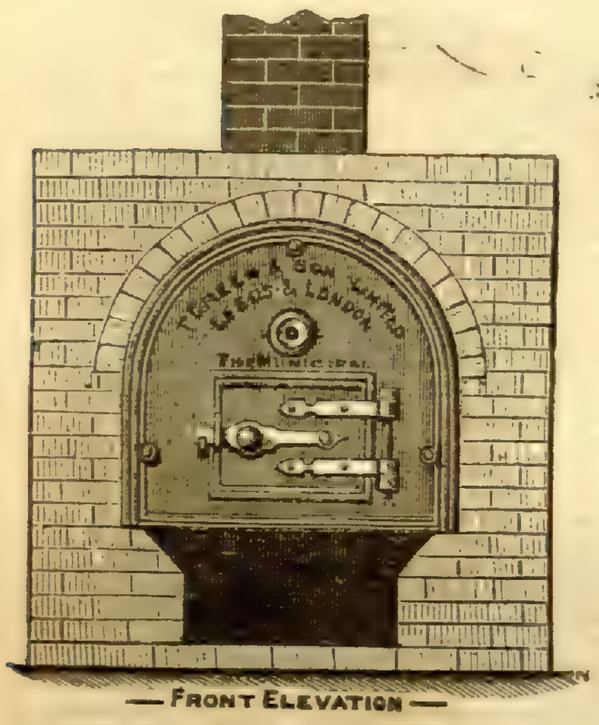

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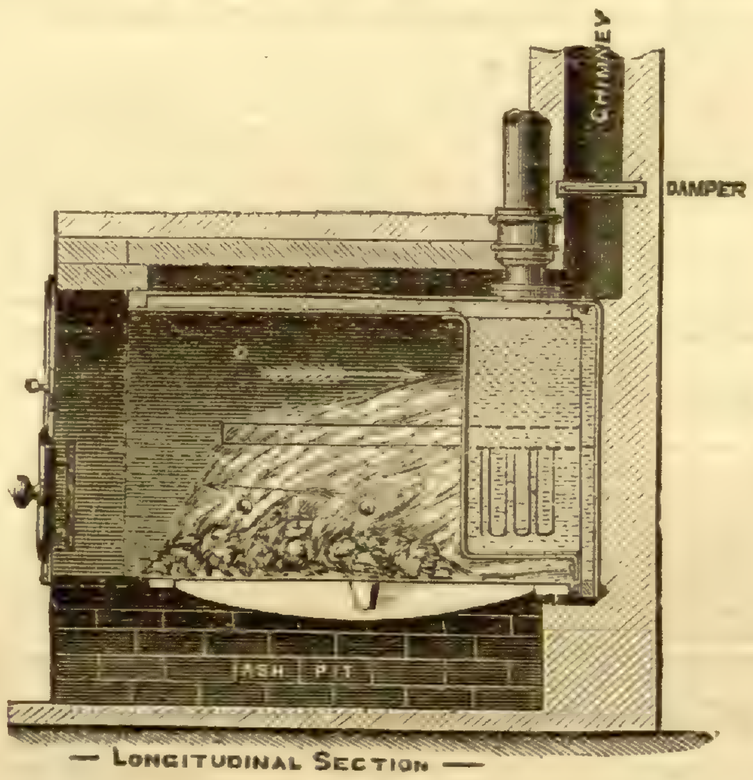

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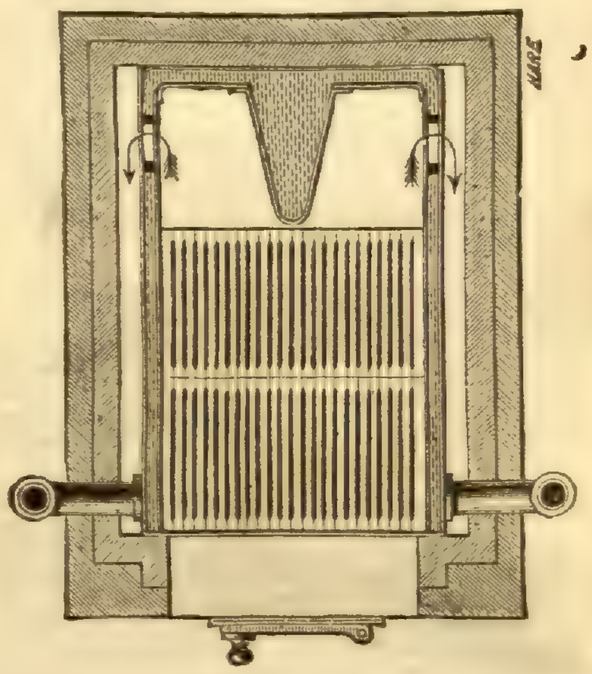

SECTIONAL PLAN.

The longitudinal section gives a view of the fire-box, water space, flues, &c. The cross section gives a view of the fire-box water space and V-shaped back.
The front elevation shows it set in *brickwork, which is necessary for this class of boiler.*

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M B 1	3 ft.	2 in.	long by	2 ft.	0 in.	wide by	2 ft.	0 in.	deep	Calculated to heat 4-in. piping as follows :—	650 ft.	Price £15	0	0
M B 2	4	0	,, by	2	0	,, by	2	0	,,		800	,, 21	0	0
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TESTIMONIAL.

MESSRS. THOS. GREEN AND SON, LTD., NORTH STREET, LEEDS.

Borough Engineer's Office, Municipal Buidings, Leeds.
January 9, 1886.

Re HEATING APPARATUS.

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Two of your Patent Municipal Pattern Boilers, No. 4, work the whole of this piping easily, although we have three of them fixed. They are very powerful and economical in the consumption of fuel, and I am pleased to be able to report of them and the apparatus so favourably.

I am, Gentlemen, yours truly,
THOS. HEWSON, Borough Engineer.

HUNDREDS OF OTHER REFERENCES CAN BE GIVEN IF REQUIRED.

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(TWO HUNDRED AND FIFTY-SIXTH THOUSAND.)

By the late SIR JOSEPH PAXTON, M.P. Reprinted from the *Gardeners' Chronicle.*

Price 3d., Post-free 3½d.;

Twenty-five Copies, 5s.; fifty, 10s.; and one hundred, 20s.

Parcels of not less than twenty-five delivered, Carriage Free, in *London* only.
Not less than one hundred Carriage Paid to any part of Great Britain.

W. RICHARDS, 41, WELLINGTON STREET, STRAND, LONDON, W.C.

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CONTENTS.

Adiantums, a decade of new ... 41
Agricultural stations, American ... 50
Alpine garden, the ... 47
Amateurs' notes ... 43
Angræcum avicularium ... 40
Aristolochia hians ... 40
Asparagus, forcing ... 54
Books, notices of:—
Handbuch der Pflanzenkrankheiten ... 51
Brassavola Digbyana ... 50
Calanthe Veitchii × ... 45
Carnation maggot ... 53
Cattleya × Sororia ... 40
Chrysanthemum frutescens ... 52
Coombe Warren ... 39
Cultural Memoranda ... 47
Cypripedium plunerum ... 40
Florists' Flowers ... 43
Flower garden, the ... 42
Foreign correspondence ... 47
Forestry ... 51
Fruits under glass ... 44
Gardening appointments ... 62
Hardy fruit garden, the ... 45
Heaths ... 44
Herbaceous border ... 55
Ireland ... 54
Kitchen garden, the ... 55
Market plants ... 52
Moore, Mr. T., the late ... 48
Novelties of 1886 ... 42
Orchid notes ... 45, 50
Palm, a new ... 50
Pears ... 52
Plants and their culture ... 46
Potatos, heavy crops of ... 54
Rock garden, the ... 52
Rosery at Torquay, Messrs. Curtis, Sandford & Co.'s 43
Royal Horticultural Society's Committees ... 46
Snowstorm, effects of the late ... 54
Societies:—
National Chrysanthemum ... 55
National Rose ... 50
Stephanophysum Herbstii 44
Sugar and rainfall ... 51
Tapeinanthus humilis ... 53
Trees and shrubs ... 54
Variation in plants, laws of 46
of ... 46
Vines, grafting and inarching ... 55
Weather, the ... 55

ILLUSTRATIONS.

Calanthe, striped, a ... 45
Coombe Warren flower-garden, the ... 41
,, ,, the garden front. See Supplement.
Flower-cup, a new ... 44
Marguerite leaf miner ... 57
Moore, Mr. T., the late ... 49
Tapeinanthus humilis ... 53

ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W.
NOTICE!—COMMITTEE MEETINGS: Scientific, at 1 P.M., in the Lindley Library; Fruit and Floral, at 11 A.M., in the Conservatory, on TUESDAY NEXT, January 11.
N.B.—Entrances, N.E. Orchard House, Exhibition Road; and Exhibitors' Entrance, east side of Royal Albert Hall.

NATIONAL CHRYSANTHEMUM SOCIETY, Royal Aquarium, Westminster.
The MID-WINTER EXHIBITION will be held on WEDNESDAY and THURSDAY, January 12 and 13. CHRYSANTHEMUMS, CYCLAMEN, PRIMULAS, SOLANUMS, &c. Schedules and all particulars (free) at Mr. WILLIAM HOLMES, Frampton Park Nurseries, Hackney, E.
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FIDLER'S READING CONQUEROR PEA.—New variety of special merit. One of the best Garden Peas ever offered to the Public. Is a very heavy cropper, and produces large pods containing from ten to twelve Peas. When cooked is of a dark green colour, and of excellent flavour.

FIDLER'S CLIPPER POTATO.—New round variety, was awarded the Silver Medal at the recent Tercentenary Exhibition for the best Seedling Potato. The very best Early Round variety now before the Public.

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ANTHONY WATERER, Knap Hill Nursery, Woking, Surrey.

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Please state Price to PUBLISHER, *Gardeners' Chronicle*, 41, Wellington Street, Strand, W.C.

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HARRISON AND SONS' GENERAL SEED CATALOGUE has now been posted to all their Customers. If not received, another copy will be sent post-free on application.
HARRISON AND SONS, Seed Growers, Leicester.

LILIUM AURATUM.—Good, plump, sound Bulbs, 6s., 9s., 12s., 18s., and 24s. per dozen; extra strong, 20s. and 42s. per dozen. All other good LILIES at equally low prices.
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ROSES in extra strong Dwarf Plants of leading varieties at 20s. per 100, £8 10s. per 1000, own selection. List sent.
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No. 81. Our SPECIAL LIST of ORCHIDS.
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JOHN CRANSTON begs to announce that, having PURCHASED THE BUSINESS, together with the most valuable portion of the stock, from "Cranston's Nursery and Seed Company Limited," these Old-established Nurseries will, on and after NOVEMBER 2, 1886, be carried on by him under the name of
"JOHN CRANSTON AND CO."
King's Acre, Hereford.—October 1, 1886.

FRUIT TREES.—Standard two-year and Maiden PLUMS, Standard two-year and Farleigh DAMSONS, Dwarf-trained PEACHES, APRICOTS, and Morello CHERRIES, &c. Price on application to
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MESSRS. GREGORY AND EVANS, NURSERYMEN, Sidcup, and 285, 286, 287, 288, Flower Market, Covent Garden, W.C., are open to RECEIVE CONSIGNMENTS of Choice CUT FLOWERS in any quantity for their Commission Department. Boxes and Labels supplied.
Telegraph Address—"COMMISSION, SIDCUP."

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SPIRÆA JAPONICA, fine Imported Clumps, 12s. 6d. per 100.
Low offers per 1000 on application.
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WATKINS AND SIMPSON have now Published their WHOLESALE CATALOGUE of VEGETABLE and FLOWER SEEDS, &c., for the coming season. Copies may be had on application. Any Customer not having received one will oblige by letting us know, when another shall at once be posted.
Exeter Street, Strand, W.C.

There is but one
CLEMATIS, WHITE JACKMANNI, and Charles Noble is its Raiser.
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CHARLES NOBLE, Bagshot.

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The ANNUAL CATALOGUE of AGRICULTURAL SEEDS will be published later on; meanwhile Special Offers will be made upon application.

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T. L. MAYOS, Highfield Nurseries, Hereford.

Kent, the Garden of England.
FRUIT TREES, true to name. The largest and best Stock in Britain.
GEORGE BUNYARD AND CO., Maidstone.
P.S.—Send direct: no Agents.

SALES BY AUCTION.

Wednesday and Saturday next.

LILIUM AURATUM from Japan, 600 standard and dwarf ROSES, English-grown LILIES in variety, BARR'S DAFFODILS, LILY of the VALLEY, CARNATIONS, hardy BULBS, and an assortment of PLANTS for the Freenhouse.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on WEDNESDAY NEXT, January 12, at 12.30 o'clock precisely, and on SATURDAY NEXT, January 15, at half-past 11 o'clock precisely.

On view morning of Sale, and Catalogues had.

Wednesday Next.

5000 LILIUM AURATUM.

Splendid Bulbs, just received from Japan.

MESSRS. PROTHEROE AND MORRIS will include the above in their SALE on WEDNESDAY NEXT, January 12.

On view morning of Sale, and Catalogues had.

Friday Next.—Most Superb Novelties.

UTRICULARIA HUMBOLDTI.

CATTLEYA MOSSIÆ MATUTINA.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, January 14, at half-past 12 o'Clock precisely, a very fine importation of UTRICULARIA HUMBOLDTI.

This is a most extraordinary species; the flowers are blue, centre white. 3 inches in diameter, up to fourteen flowers in upright very thick stem. This species was discovered by Richard Schomburgh on the Roraima Mountain in 1838. All our efforts to get it home hitherto were unsuccessful, but Mr. Kramer has been fortunate in getting the plants offered home alive. Schomburgh's original drawing is in the possession of the British Museum, and we have been able, through the kindness of Mr. Carruthers, to obtain a *fac-simile* of this drawing, which will be on view.

Also CATTLEYA MOSSIÆ MATUTINA, a simply grand Cattleya. This Mossiæ differs from the ordinary type in flowering much earlier. The flowers are much larger, and simply grand. The habit of the plant is totally distinct, both bulb and leaf resembling C. Trianæ. The leaves are very big, always upright, and of rigid growth. A finer Cattleya cannot possibly be offered.

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White variety of EPIDENDRUM SCHOMBURGKII, CATTLEYA PERCIVALIANA, ONCIDIUM LANCEANUM, ZYGOPETALUM BURKEI, CATTLEYA SUPERBA, EPIDENDRUM SCHOMBURGKI, ONCIDIUM NIGRATUM, PERISTERIA species, BRASSAVOLA ANGUSTATA, BIFRENARIA AURANTIACA, SCUTICARIA species, SCHOMBURGKIA species, SOBRALIA SESSILIS.

MESSRS. PROTHEROE AND MORRIS will include in their SALE on FRIDAY NEXT, January 14, splendid importations in the finest order, of the above and other ORCHIDS.

On view morning of Sale, and Catalogues had.

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WHITE LÆLIA ANCEPS in FLOWER.

MESSRS. PROTHEROE AND MORRIS will include in their SALE on FRIDAY NEXT, January 14, a splendid Mass of a White LÆLIA ANCEPS in Flower; also a plant (the only one received) of a CATTLEYA with very extraordinary bulbs.

On view morning of Sale, and Catalogues had.

Sunbury.

UNRESERVED CLEARANCE SALE.

By order of Mr. H. Willmer, who is absolutely relinquishing the Business.

ALTERATION of DATE to TUESDAY, February 1, 1887.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, The Springfield Nursery, Sunbury (close to the Railway Station), on TUESDAY, February 1, at 12 o'Clock precisely, the whole of the well-grown NURSERY STOCK, in capital condition for removal, including 1500 Common Laurels, 2 to 4 feet; 500 Green Hollies, 2 to 6 feet; very fine Horse Chestnuts, 6 to 18 feet: 500 Lombardy Poplars, 3 to 16 feet: Aucubas, Spruce Fir, Conifers in variety; 1000 Tritoma Uvaria; 1500 Gentiana acaulis, and other stock.

May be viewed one week prior to the Sale. Catalogues may be had on the premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C., and Leytonstone.

N.B.—The GLASS ERECTIONS and GREENHOUSE PLANTS will be SOLD IN THE SPRING.

Orchids in Flower.—Special Sale.

MESSRS. PROTHEROE AND MORRIS beg to announce that their NEXT SPECIAL SALE of the above will take place on TUESDAY, January 25, for which they will be glad to receive NOTICE of ENTRIES as soon as possible.

Wednesday and Saturday Next.

HARDY PLANTS and BULBS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., at half-past 12 o'Clock precisely each day, First-class Standard and Dwarf ROSES to name, FRUIT TREES, SHRUBS, and CONIFERS, BORDER PLANTS, BARR'S DAFFODILS, GLADIOLI, LILIUMS, and a variety of other BULBS. On view mornings of Sale, and Catalogues had.

Thursday Next—(Sale No. 7321).

Six Cases of ARAUCARIA EXCELSA just received in fine condition.

MR. J. C. STEVENS will include the above in his SALE by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, January 13. On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7319.)

Importations from Japan, ORCHIDS, &c., 5000 LILIUM AURATUM (grand bulbs), 500 L. KRAMERI, 500 L. LONGIFLORUM, and 250 L. SPECIOSUM ROSEUM, just received from Japan, in splendid condition, also a small consignment of LÆLIA PURPURATA, CATTLEYAS, EPIDENDRUMS, and other ORCHIDS, 5000 South African TUBEROSES, Home-grown LILIES, AMARYLLIS, and other BULBS and ROOTS in variety, &c.

MR. J. C. STEVENS will SELL the above by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, January 13, at half past 12 o'Clock precisely.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7321.)

SPECIAL SALE of ORCHIDS in FLOWER and BUD.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, January 13, at half-past 12 o'Clock precisely, a fine COLLECTION of ORCHIDS in Flower and Bud, comprising fine forms of Odontoglossum Alexandræ, O. Rossii majus and aspersum, Cattleya Percivaliana, C. Trianæ, and C. Dolosa, Lælia anceps, Lycastes, Dendrobiums, &c.

On view morning of Sale, and Catalogues had.

ORCHIDS—ORCHIDS.

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(JOHN COWAN), Limited,

THE VINEYARD and NURSERIES, GARSTON, NEAR LIVERPOOL,

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TO BE SOLD, by Private Treaty, the LEASEHOLD interest in a SMALL NURSERY of about 3 Acres, near to a County Town, with 8 Greenhouses thereon, belonging to the Lessee, and removable, also the Stock-in-Trade and Goodwill, &c. Price very moderate. An excellent opportunity. Lease about ten years to run.

Apply to NURSERY, Nutting & Sons, 106, Southwark Street, London, S.E.

Middlesex.

TO CUT-FLOWER GROWERS.

TO BE SOLD, at a sacrifice, a well-known MARKET NURSERY, with 25 Greenhouses, 10 Pits, &c., containing about 15,000 feet of Glass. Moderate Rent (£47 nett.)

Full particulars and terms on application to Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, E.C.

FOR SALE.—An old-established NURSERY GARDEN BUSINESS in the South of London. Over 3 Acres; nearly Twenty Greenhouses, with Open Sheds, Pits, Stables, and Residence. Lease, 12½ years to run. Rent, £31 2*s*. 6*d*. Valuation of Lease, Plant, Greenhouses, Stock, &c., over £1300.

Apply Messrs. BARNARD AND CO., 47, Lincoln's Inn Fields, W.C.

TO BE SOLD, that fine large NEW ZEALAND CONSERVATORY, now standing at the Colonial Exhibition, South Kensington, containing about 10,000 feet of Victoria Dry Glazing, easily removable, for re-fixing—would make a splendid Vinery—160 feet long, 34 feet wide, 24 feet high. Value £500. Also, the NATAL CONSERVATORY, complete with Boiler and Hot-water Pipes, 44 feet long, 25 feet wide and 19 feet high, containing about 3,000 feet of Victoria Dry Glazing, easily removable. Value £300.

See CATALOGUE of GENERAL SALE for January 19, 1887.

DEARD, Harlow.

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Highgate Nurseries, London, N.

To Nurserymen and Others.

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200 LIMES.

The Trees must be suitable for planting, have been already moved, and must be of the diameter of at least 2¼ inches measured 1 foot above ground.

Tenders marked "Trees" to be sent under Seal to Mr. A. W. CONQUEST, Borough Engineer, not later than SATURDAY, the 15th January inst.

The person whose Tender is accepted will be required to deliver all the Trees at the Shorncliffe Railway Station within two weeks from date of acceptance of Tender.

No pledge is given that the lowest or any Tender will be accepted. By Order,

W. G. S. HARRISON, Town Clerk.

Folkestone, January 6, 1887.

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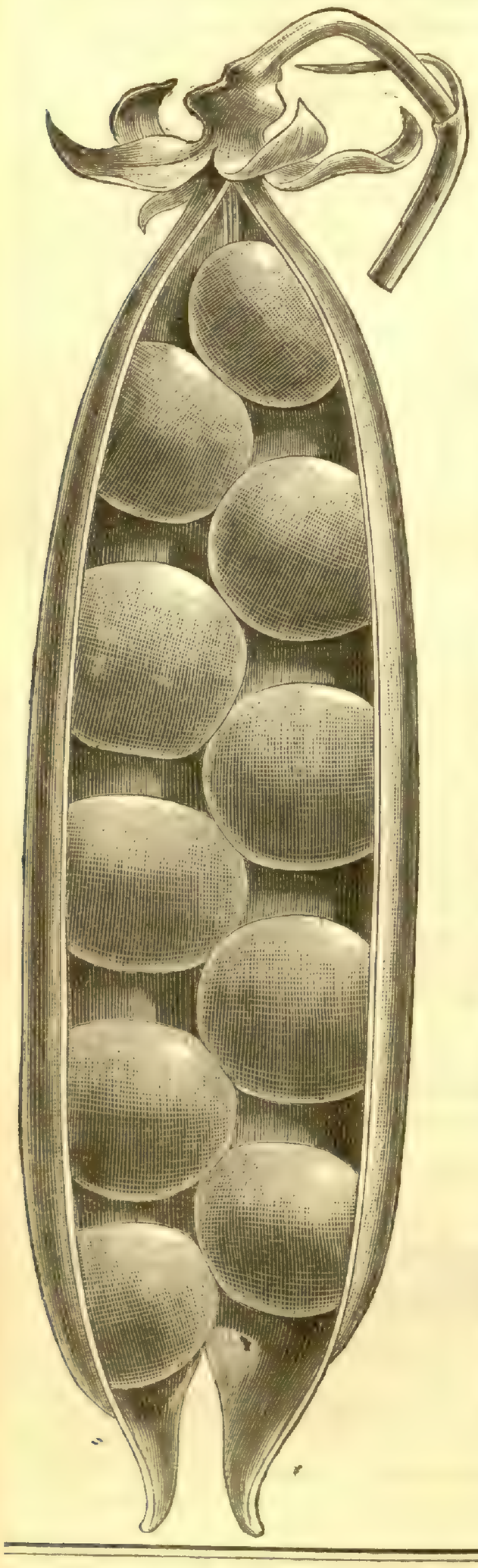

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The QUEEN is a Blue Wrinkled Marrow Pea, about 2 to 2½ feet in height, of a sturdy branching habit; it requires to be sown thinly, as the pods are produced from the very bottom of the plant to the top. The pods are large, green, slightly curved, and so filled with Peas that when open it would appear impossible they could be contained in the pod. The Peas are large, oval, deep-green, and of a delicious flavour when cooked. We feel we cannot say too much in its praise, and are confident our Customers will agree with us, it is the very best Pea ever sent out.

Price, 2s. per Half-pint,

SEALED PACKETS.

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MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. SANDER to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, January 14, at half-past 12 o'Clock precisely, a very fine importation of

UTRICULARIA HUMBOLDTI.—This is a most extraordinary species. The flowers are blue, centre white, 3 inches in diameter, up to fourteen flowers in upright very thick stem. This species was discovered by RICHARD SCHOMBURGH, on the Roraima Mountain, in 1838. All our efforts to get it home hitherto were unsuccessful, but Mr. KRAMER has been fortunate in getting the plants offered home alive. Schomburgh's original drawing is in the possession of the British Museum, and we have been able, through the kindness of Mr. Carruthers, to obtain a *fac simile* of this drawing, which will be on view.

Also **CATTLEYA MOSSIÆ MATUTINA**, a simply grand Cattleya. This Mossiæ differs from the ordinary type in flowering much earlier. The flowers are much larger, and simply grand. The habit of the plant is totally distinct, both bulb and leaf resembling C. Trianæ. The leaves are very big, always upright, and of rigid growth. A finer Cattleya cannot possibly be offered.

The same Sale will contain the finest importation of **ANGULOA RUCKERI** and its variety **SANGUINEA** ever offered. The masses of this magnificent Orchid are exceedingly fine.

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FIFTY JERSEY ROSES for 21s.

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Good Seed is offered at the following price for cash:—1000 seeds for 25 francs (£1), 10,000 seeds, for 200 francs (£8).
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New Chrysanthemum.
"MR. RALPH BROCKLEBANK."
A beautiful bright Primrose-Yellow Sport from Meg Merrilies. Awarded Eight F.C.C., including one from N.C.S.
T. WINKWORTH is now booking orders for this truly grand variety. Plants 5s. each; cuttings, 4s. each, post-free. Orders will be executed in strict rotation and must be accompanied by Postal Orders or P.O.O. payable in Liverpool.
THOMAS WINKWORTH,
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RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Special Offer.
ISAAC MATTHEWS AND SON have for Sale 500,000 RHODODENDRONS, varying in size from 4 to 6 inches up to 2 to 3 feet—Cunningham's White, Jacksoni, caucasicum, pictum, Seedling Hybrids, Hybrid ponticum, and named varieties; good bushy plants. HOLLIES, CONIFERS, FOREST TREES in large quantities; AUCUBAS, YEWS, and other Nursery Stock. CATALOGUES now ready, and may be had, gratis and post-free, on application to the Nurseries, Milton, Stoke-on-Trent.
Our Nurserier are 110 acres.

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H. AND F. SHARPE are now prepared to give special quotations of all the principal varieties of VEGETABLE and FIELD SEEDS raised on their own Seed Farms this season from the choicest selected stocks. The quality is unusually fine, and the prices very low. Samples may be had on application.
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AZALEA INDICA, full of flower-buds, 15s., 21s., and 30s. per dozen.
CAMELLIAS, full of flower-buds, 18s., 24s., to 36s. per dozen; specimens, 5s. to 15s. each.
RHODODENDRONS, finest named, 18s. to 30s. per dozen.
DEUTZIA GRACILIS, extra strong, 6s. per dozen.
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LILY of the VALLEY, extra strong Berlin Crowns, 6s. per 100.
TUBEROSES, Double African and American Pearl. Largest and cheapest stock in the Trade. See Special LIST. Trade Supplied.
MORLE AND CO., 1 and 2, Fenchurch Street; and at Child's Hill Farm Nursery, Finchley Road, N.W.

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THE

Gardeners' Chronicle.

SATURDAY, JANUARY 8, 1887.

COOMBE WARREN.

[SEE SUPPLEMENTARY SHEET.]

COOMBE WOOD is one of the pleasantest spots to be found within ten miles of London, and around it are dotted many beautiful gardens, of which Coombe Warren, the residence of B. W. Currie, Esq., certainly is not the least delightful. Situated on a commanding elevation with a southern aspect, and looking towards the downs of Epsom, and a broad and interesting range of country below, it is within easy reach of the centre of the metropolis, and yet is pleasantly rural. The extent of the grounds barely exceeds 20 acres, but within that area great variety of scenic effect has been secured, whilst the landscape-garden arrangements have been so contrived as to convey the idea of much larger extent than really exists.

The house is a somewhat quaint agglomeration of old English and Elizabethan architecture. One portion, built of red brick, although now largely covered with climbers, shows its modern origin, whilst another part seems to have been cut out of "Old London" at the Indo-Colonial Exhibition. This has its gabled fronts overhanging the basement floor, the wall of which is most effectively covered with climbers and various shrubs, such as Berberis, Magnolias, Wistarias, Roses, Figs, Euonymuses, &c. This has a south-east aspect, and with the south front looks upon a broad grassy terrace, at the western end of which are planted pyramids of Ivy-leaved Pelargoniums and of Heliotropes alternately. There are six of these, the former rich in magenta and cerise flowers, very beautiful indeed, and the latter sombre in hue but rich in perfume. We described the method of training young plants, and planting and furnishing these pyramids last year, and need hardly go over that ground again. It is enough to say they are admirably done and are singularly effective. Mr. Currie displays a strong *penchant* for pyramidal plants and shrubs, and these are found in considerable profusion all about the place. Immediately beside the south front of the house runs a broad gravel walk terminating in a Grecian temple, in the centre of which stands a finely executed bust of Mr. Gladstone.

Standing on the margin of the lawn, beyond the path, is a row of pyramidal shrubs in big boxes —fine Bays, golden Euonymuses, the silvery Eurya califolia, and handsome standard Portugal Laurels; these may be said to balance the planted pyramids on the farther side of the lawn. At the eastern end is a small Dutch garden, in which, in addition to fine pyramid shrubs, are also large pyramid Fuchsias and big Hydrangeas profusely blooming; then, just beyond, on the same aspect, a few steps lead up to a small parterre garden, enclosed on two sides by a low stone balustrade, and in which there are some very neat and effective foliage-beds. For background there is on one side a wall covered with single Ivy-leaf Pelargoniums and Heliotropes, in rich bloom, and very beautiful; whilst on the other is a tunnel-like archway of Lime trees, which, trained over the path on either side, leads with much quaintness on to the higher lawn beyond. It is very obvious that interesting features such as these can hardly be described in such terms as they merit, as in so many ways they differ from what is usually seen elsewhere. From the front of the broad terrace lawn the lower pleasure-grounds are looked out upon, the least striking things being some massive clumps of pyramids in tubs of scarlet Pelargoniums; but beyond are good Coniferæ, bold masses of shrubs, beautiful grassy glades, clumps of Pampas-grass, and an abundance of well-foliaged overhanging trees. Climbers are specially well cared for, and many portions of the house exhibit Ivies, Wistarias, Jessamines, &c., in rich profusion. The entrance courtyard is remarkably clothed with foliage, as also are the numerous gables and projections of the house on that side. No trouble seems to be spared to clothe walls everywhere with luxuriant foliage, Magnolias especially doing grandly in various aspects.

In a back garden, wall coverings consist of half-pyramids of Heliotrope and scarlet Pelargoniums. These are some 8 feet in height, and 4 to 5 feet broad at the base, and perfectly filled. Between these, of which there are six, are a dozen panels, flatly trained, of Ivy-leaved Pelargoniums and Heliotropes; these panels are about 4 feet in width, and are admirably filled. This wall all through the summer presents a very gay appearance, and effort is being made to fill in the interstices between the pyramids and panels with Ampelopsis Veitchii, as presenting a distinctive hue of greenery. An enclosed fruit garden, through which runs a broad footway paved with coloured tiles and bordered on either side by a broad belting of turf, is in two divisions, the quarters in the upper garden being devoted to Apples on dwarfing stocks, the fruit being wondrously fine and richly coloured—indeed, selection seems specially to have been directed to the production of colour, such sorts as Worcester Pearmain, Cox's Pomona, Hollandbury, Fearn's and Cellini Pippins, coming in the front row of trees; and behind are Alfriston, Winter Hawthornden, Lord Suffield, Peasgood's Nonsuch, Ecklinville Seedling, and Emperor Alexander—all producing grand fruits. In the lower garden are Pears and Plums, the latter chiefly finely fruited; and whilst on the north wall are Morello Cherries—a wonderful crop—on the south wall Peaches do finely, producing really splendid crops of such kinds as Lord Palmerston, Prince of Wales, Princess of Wales, Condor, Violette Hâtive, and Walburton Admirable. It is thus noticeable that a garden possessing such charming floral and scenic effects is not wholly devoted to such purposes, and fruits and plants are both largely and well grown.

A large kitchen garden is placed south of the house, and below the Kingston road, where, too, everything seems to be admirably done.

Charming as the grounds are now, they will improve yearly, as trees and shrubs develope. A considerable expanse of the pleasure-grounds has been but newly laid out and planted, but progress in growth is rapid. Mr. Currie is well served by his gardener, Mr. G. Profit, whose regard for Coombe Warren seems almost enthusiastic, although now largely removed from its active supervision, having also charge of the fine estate of Minley Manor.

SAFFRON.

THE following stories of Saffron in Egypt were probably invented to bear out the untenable derivation of some Greek lexicographers of κροκόδειλος from κροκός and δειλος:—"The sovereign power of genuine Saffron is plainly proved by the antipathy of the crocodile thereunto, for the crocodile's tears are never true save when he is forced where Saffron groweth, whence he hath his name of κροκόδειλος, or the Saffron-fearer, knowing himself to be all poison, and it all antidote." Thos. Fuller, *Worthies of England*, about 1661, vol. i., p. 336, reprint of 1811. "For which cause those among the Egyptians that had the charge to look to the bees in their gardens were wont to smear their bee-hives with Saffron, which as soon as the crocodile perceived he would presently run away." Tom Coryat's *Crudities, hastily Gobbled up in Five Months Travels*, 1611, p. 182, as quoted by Mr. Maw in his *A Monograph of the Genus Crocus*.

PLANTS NEW OR NOTEWORTHY.

ARISTOLOCHIA HIANS.*

THIS would appear to be either a rare or a local species, since it is but poorly represented in herbaria, and has not previously been recorded as a garden plant. It is, however, now in cultivation at Kew, where it flowered in September last, and a drawing of it has been prepared for the *Botanical Magazine*. In habit and foliage it is almost the same as A. brasiliensis (A. ornithocephala), but the leaves are less glaucous and more finely pitted—reticulate beneath; the flowers, however, are quite distinct in colour and in the proportions of their lobes, although in form they are very similar.

The leaves are roundish in outline, deeply cordate at the base, and very obtusely rounded at the apex, glabrous on both sides, bright green above, much paler and pitted—reticulate beneath. The stipules are of the same form as the leaves, and about 1 inch in diameter, with wavy margins. The flower is of the same form as that of A. brasiliensis, but the beak-like lobe is very much longer than the broad reniform lobe, which is also smaller than the corresponding lobe of A. brasiliensis, being only 3—3½ inches broad. The outside of the flower is of a nearly uniform bronzy-green, with the veins and margin of the beak light yellowish-green. The inside of the broad lobe is dull yellowish-green veined and spotted with dull purple-brown. The inside of the beak is thickly covered with straight, stiffish, brownish-purple hairs; and the inside of the inflated tube is pale greenish, covered with woolly hairs and spotted with dark purple-brown in the upper half, and having the lower half nearly glabrous and unspotted, but with a few very fine cobwebby hairs just around the base, where there is a dark brownish-purple ring. Stigmas six. Anthers yellow. A native of Venezuela. *N. E. Brown, Kew.*

CATTLEYA × SORORIA, *hybr.*

This was kindly sent me by Mr. B. S. Williams, who informs me it was introduced from Brazil, and that it has the growth of Cattleya bicolor. I hope to be forgiven for my keenness in declaring it a hybrid, which, indeed, is a guess.

The flower looks like a good extra strong flower of Cattleya Harrisoniæ, and has greenish-yellow tips to the sepals. There are small, very much darker spots on the petals, more numerous inside than outside. The lip suggests undoubtedly the impression of that of Cattleya Walkeriana. The side laciniæ are cut in a similar manner, and do not fully cover the rather broad column. They project into a short stalk, narrower in front and the anterior lacinia is triangular retuse emarginate (or trapezoid), with small lobules at the sides. It is white, with the lightest purple at the margin, and a few dark purple lines at the base; there are also some purple spots on the stalk. There is an accumulation of asperities on the disc of the anterior lacinia, which reminds one of Cattleya guttata. Column strong, white, with some purple lines in front and some yellow at the base.

I cannot help thinking of Cattleya Walkeriana from the appearance of the lip, and then of Cattleya guttata. Mr. B. S. Williams has sent me several times fine varieties of the first species, so that he has command of a hunting ground whence to obtain it. It is none of those numerous novelties raised at the Royal Exotic Nursery of Messrs. Veitch & Sons, by Messrs. Dominy and Seden. Only Cattleya Brabantiæ is comparable to it in its lip. *H. G. Rchb. f.*

CYPRIPEDIUM PLUNERUM, *nov. hybr.*

This comes from Mr. Norman Cookson, who is celebrated for his rich stores of new hybrids. I got it from my indefatigable correspondent, Mr. F. Sander, who states that it is asserted to come from Cypripedium venustum (?) and villosum. As to me I doubt this.

Leaves shaped nearly as in Cypripedium venustum, light green with few and distant darker scattered hieroglyphical signs on the upper side. Peduncle reddish-brown with very short mauve hairs. Bract much shorter than the stalked ovary. Upper sepal nearly triangular yet rounded on both sides, whitish, with remarkably dark green nerves (seventeen). Lateral sepals forming a much smaller body, white, with seven long green nerves and a few short ones. Petals broader at the point, blunt acute, superior part with ten green conspicuous nerves, the mid nerve nearly blackish, the anterior part of the lip mauve-brown purple. There are some black spots on the margin from the base to the centre, and similar small black spots on the basilar part of the mid nerve. Lip shaped as in Cypripedium purpuratum, having a well-marked horn-like apiculus on each side; the retuse anterior mouth of the shoe deep brown, superior part and anterior margin ochre-coloured, the superior part with dark spots. Staminode forcipate, with an apiculus between the two great protruded shanks, ochre, with some dark green nervations.

My reason for not believing in Cypripedium villosum as one of the parents is that there is nowhere a vestige of that species. Hybrids of that species show more or less its staminode. There is no varnish on the flower. The sepals and petals have no undulation.

Can it be a fresh form of barbatum Hookeræ like the patens raised by Mr. Seden for Messrs. James Veitch & Sons? Ah, we must be ready for such surprises, which may accumulate till one day we shall admit, with hopeless resignation, that our powers of discrimination in those mules are exhausted. Or is it a marmorophyllum (Hookeræ-barbatum) that has nearly lost its marble? Very likely so. *H. G. Rchb. f.*

ANGRÆCUM AVICULARIUM, *n. sp.**

This Angræcum was kindly sent me by Sir Trevor Lawrence, Bart., M.P., P.R.H.S. It is probably of tropical African origin, and may have been imported by Mr. F. Sander. The leaves are short and broad, cuneate, oblong-elliptical, bilobed at the point, nearly 4 inches long, by 2½ wide at the widest diameter. The peduncle is more than a span in length, and bears fifteen snow-white flowers, which are smaller by a

* *Aristolochia hians*, Willdenow, in *Mem. de la Soc. d. Natur de Moscow*, vol. ii., p. 100; DC., *Prod.*, vol. xv., part 1, p. 472.

* *Angræcum avicularium*, n. sp.—Foliis cuneato-oblongo, ellipticis apice, contracto obtuse bilobis; racemo multifloro subsecundo, laxiusculo; bracteis scariosis triangulis ovarii pedicellati quartam æquantibus; sepalis tepalisque lanceis aristatis; labello a basi angustiori oblongo dilatato cuspidato, calcari filiformi ovarium pedicellatum quinquies superante; anthera obtusissima obtuse obscureque medio apiculata, rostelli processu lineari producto; pollinaria probo Angræci veri. Misit ill. Eq. Trevor Lawrence. *H. G. Rchb. f.*

third than those of Angræcum aviculatum, to which it is no doubt nearly allied. The filiform spur is the chief part of the flower, measuring 4—5 inches in length. The sepals and petals are lanceolate-cuspidate. The lip is narrow at the base, oblong, cuspidate. The column bears a fine rostellar beak, peeping out under the blunt apiculate anther, and bearing the caudicula. This supplies a resemblance to a bird's head, as was happily suggested by Sir Trevor. *H. G. Rchb. f.*

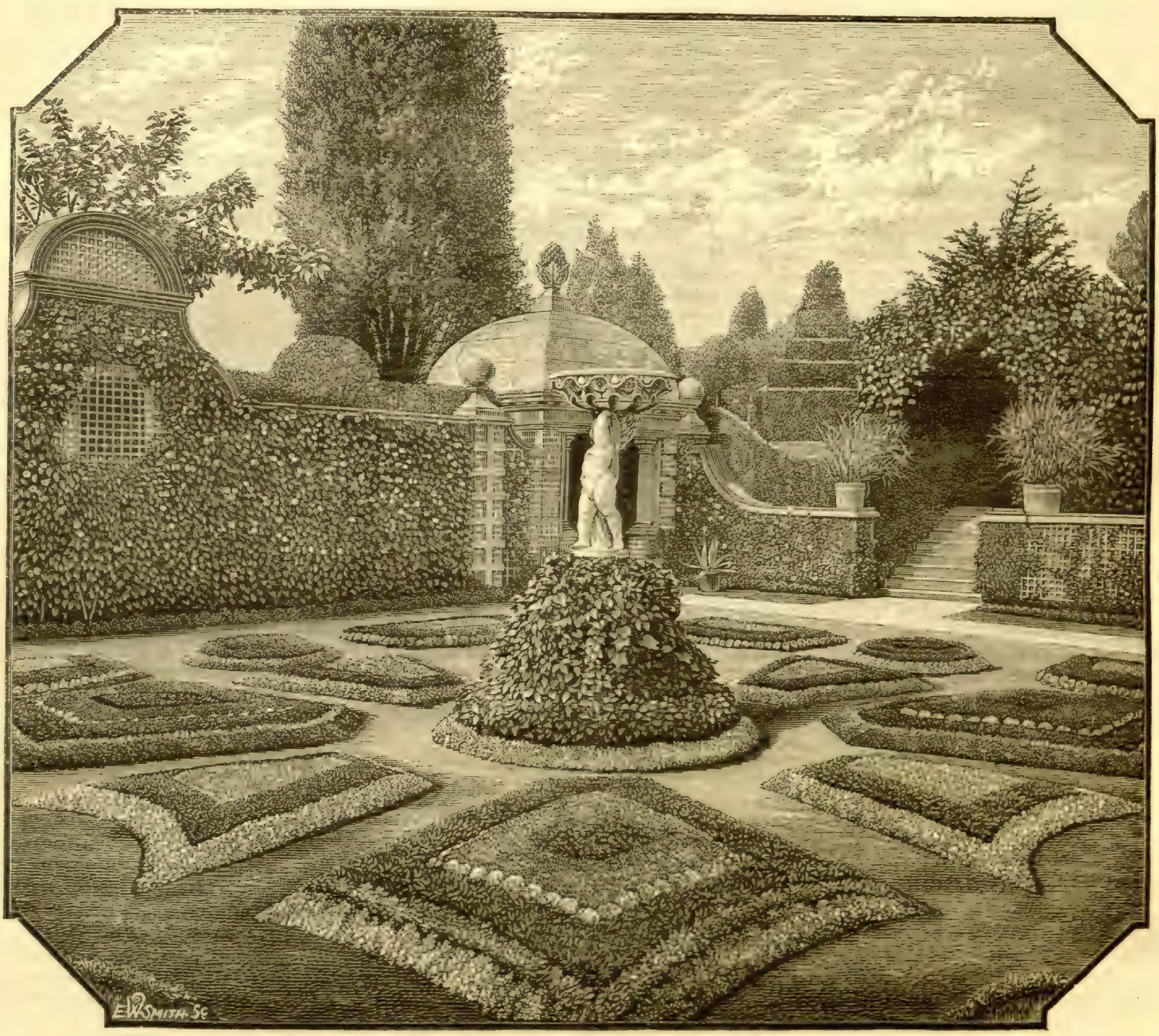

FIG. 9.—THE FLOWER GARDEN AT COOMBE WARREN. (SEE P. 40.)

A DECADE OF NEW ADIANTUMS.

[THIS descriptive account of some new Ferns is invested with peculiar interest as the last production from the pen of Mr, Thomas Moore, it having been sent to us only a short time before his death. ED.]

The so-called hybrids of this popular genus of Ferns (and there seem to be good reasons for believing some of them to be hybrids, that is, the result of the intercrossing of two dissimilar kinds), are becoming so numerous, that it appears to be desirable to record such of them as have come under our notice, in order to prevent, as far as possible, any mistakes or misconceptions hereafter. Adiantum cuneatum has proved to be one of the most prolific of mothers, and the number of varieties to which it has given rise (not included in these notes) is astonishing. Many of them are probably sports, the majority of its real crosses have apparently been with A. amabile (Moorei). Several of those here noted are supposed to have had this origin. Scarcely any difference can be pointed out in regard to their value as decorative plants—all being good in their way.

Adiantum hians, n. sp.—Fronds triangular-ovate, glabrous, thin in texture, tripinnate; pinnæ ovate, the lower ones stalked, the upper ones almost sessile; pinnules pedicellate, various in form—roundish, balloon-shaped, transversely oblong, or rhomboidal with the free end rounded, bearing one or two, rarely more, large gaping sori, the sterile portions of the margin indistinctly toothed, and the posterior base and inner side even, so that the pinnules appear entire except where the sori are placed; veins rather distant, dichotomously forked, venules free; sori large, placed towards the apex or on the anterior edge of the pinnules, oblong-reniform, forming a broad, gaping, concave hollow, or sinus, in the otherwise thin edge of the pinnule, often solitary, rarely more than two on each pinnule; stipes and rachides ebeneous, glossy.—Habitat, South Pacific Isles.

This elegant species of Maidenhair, which is quite dissimilar from any other known to us, was sent from Australia by Mr. Herbert, with the information that it was a native of New Caledonia, a second specimen being labelled as from the Fiji Islands. Mr. Herbert describes its growth as resembling that of A. assimile; and it has the same delicate texture and absence of lobing, but the broad open sinus which is occupied by each sorus, and which is often as much as 2 lines across, is very peculiar, and the evenly-rounded sides of the pinnules, especially of the terminal balloon-shaped ones, catches the eye as a distinct and characteristic feature. The largest frond in our possession is about ten inches high, besides the stipes, the lower portion of which is broken away, and the breadth is about 10 inches, the larger pinnules being about 4 lines long. In a smaller frond, marked from Fiji, the pinnules are fully six lines long, and appear of a bolder character, the transversely oblong terminal pinnules produced here and there being fully eight lines broad. We are not

aware that the plant has reached this country in a living state, but it is in cultivation in Australia.

Adiantum Daddsii, n. hyb.—Fronds deltoid, decompound, evergreen, glabrous; pinnæ triangular-ovate, stipitate, furnished with numerous but not crowded pinnules; ultimate segments very numerous, quite small, distinct from each other, everywhere pedicellate, the pedicels very slender, the terminal segments cuneate with 2—3 lobes at the apex, the intermediate ones rhomboid-cuneate more or less deeply lobate on the anterior side, the basal ones roundish or obovate in outline, symmetrically and equally narrowed into the pedicel; veins dichotomous, venules free; sori roundish reniform, situated in a notch at the apex of the marginal lobes, and covered by similarly shaped indusia which are smooth and entire; stipes and rachides glossy, ebeneous.

This very charming Fern is characterised by the small size of its distinctly set ultimate segments—pinnules or pinnulets, according to their position. These segments are very numerous, and being attached by fine hair-like pedicels seem at first sight to have no definite connection with each other. The frond is rather over 1 foot in height, and about 1½ foot across the base, to which a stipes of about 8 inches has to be added. The basal pinnæ are some 7½ inches long by 8 inches broad, and are widely spreading. This large expansion, together with the very small size of the pinnulets gives to the fronds a peculiar character of airy elegance, which we believe is nowhere surpassed. Some idea of the minuteness of the parts may be formed from the following measurements:—The terminal cuneate segments average 2 lines in length, the rhomboid intermediate ones reach an average of 2½ to 3 lines, and the basal obovate ones are 1½ to 2 lines in length. The fronds are fertile throughout, every small segment carrying from two to four or more, rarely five, of the plump sori, which, with their investing indusia, become very conspicuous.

This is one of two exceedingly handsome Ferns of supposed hybrid origin recently sent to us by Mr. J. Dadds, of Langleigh, Ilfracombe. The spores sown were those of A. cuneatum crossed with A. amabile. The rhizome, we are informed, is like that of A. cuneatum, but the plant is much more graceful, and of stronger more sturdy growth; it is now about a year and a half old, "and hangs over the side of the pot in a lovely manner." Compared with A. cuneatum it presents a totally dissimilar aspect, the open ramification and the small roundish distant pinnules being unlike anything seen in that species. Mr. Dadds, whose name is familiar as a British pteridologist, must be congratulated on having raised so fine a novelty, which we hope soon to see put in the hands of cultivators. *T. M.*

(To be continued.)

THE FLOWER GARDEN.

BOX LAYING.

The laying of Box and all other live edging should be pushed forward in mild weather; the levels should be determined from each end, and the intermediate pegs set by the use of the rods. This is only necessary with one side, as the opposite level is easily adjusted by means of a straight-edge and spirit-level. The edgings should afterwards be made up, well-trodden, beaten hard, and a trench cut with the spade about 6 inches deep, and almost perpendicular on the side next to the line. The Box should be pulled to pieces, the rough stems and tops trimmed off with the knife. Proceed to lay the young plants against the face of the trench, keeping the tops about an inch above the ground level; steady the plants with the back of the left hand, and with the right draw the soil up against the face. Always try to keep the plants of uniform height and width. Replace the remainder of the soil, tread firm with the foot, and cut off the surplus soil about 2 inches from the Box, and throw this on the border or bed.

WALKS.

If the walks are to be re-made a drain should be run down the centre with inlets from the sides to receive all the water as it falls on the walk. Not less than 6 inches of of rough material for the securing of perfect drainage, should be placed in the bottom, leaving room for a couple of inches of fine gravel. This should be well watered, swept and rolled, until it becomes quite smooth and firm. When snow and frost prevent the ordinary work from proceeding an ample supply of gravel should be secured for the purpose of resurfacing walks and carriage drives. If a river be near at hand, good material can be had with but little trouble. This does not set so rapidly as pit gravel, but it will be found much cleaner to walk upon, and freer from weeds than the other. It is a good plan to sift the sand from either, and then pass the residue through a three-quarter inch riddle. Nothing larger ought to be used for walks than will pass through such.

LAYERING.

The layering of rare, and scarce trees and shrubs, should now receive attention. A mound of sharp rich soil should be placed at convenient points underneath the subjects to be operated upon. The branch should then be brought down on to this, and secured to the ground by means of a short peg. A slanting cut up towards the point of the branch should be made with a knife. This is a delicate operation, and must be performed with exceeding caution. A spadeful of the compost should be placed over the top and around the incision, to keep out the air and steady the shoot. Many subjects will root quite freely if the soil be placed over the branches without incision, viz., Rhododendrons, Ericas, Gaultheria, &c. The latter family are capital subjects for the rock garden. Layering is a system of propagation which should not be resorted to unless seeds and other methods are difficult, as layered plants seldom make fine specimen trees. Large shoots, when layered, should be fastened to a strong stake, as when cut the wind is apt to break them off.

ROSES.

See that Roses are securely fastened to their stakes, also all newly transplanted trees and shrubs. All newly planted subjects will be all the better of having some protection spread over their roots, to exclude frost, which would seriously injure the young roots if left without. Some dry Fern leaves and Fir branches will secure them against injury. *Wm. M. Baillie, Luton Hoo.*

THE NOVELTIES OF 1886.

(Continued from p. 15.)

The Ferns and Lycopods.—Of these we have some elegant and useful additions. Two of the finest, perhaps, are Davallia retusa, with massive arching foliage, something like a large pinnuled D. Mooreana, and Nephrolepis rufescens tripinnatifida, with elegant plumes of frondage, much tasselled and fringed; both these were from Messrs. Jas. Veitch & Son, and the same firm introduced Todea grandipinnula, an elegant Filmy Fern and a supposed hybrid, and Pteris tremula foliosa, which will perhaps be one of the best decorative and market Ferns extant. Mr. Jas. Naylor, of Harrow, received a First-class Certificate for his superbly crested strain of Pteris serrulata; Mr. May, for his of P. cretica; while Mr. Wm. Bull introduced a very fine shiny green-fronded Fern in Davallia solida major. Of Maidenhairs we have acquired three, all good in their classes. A. Capillus-veneris imbricatum, approaching in beauty A. Farleyense; A. cuneatum, Phillips' var., with very tall and elegant frondage; and A. fragrantissimum, which may be a cross with A. amabile. Gymnogramma schizophylla gloriosa was certificated to three exhibitors. As a free-growing, finely-cut fronded Fern, either for basket or pot, it is not to be easily beaten. Of Filmy and hardy Ferns Messrs. Jas. Backhouse & Sons, of York, received certificates at the Liverpool show for some very elegant things, viz.:—Trichomanes neriifolium, with beautifully divided fronds; Hymenophyllum picturatum, in which the nerves are very prettily displayed; Polypodium vulgare trichomanoides and Asplenium marinum plumosum, both finely cut and resembling Filmy Ferns. At the same time Mr. Jas. Birkenhead received certificates for Lastrea montana coronaria, a fine-crested hardy Fern; and Nephrodium Sangevelli, a good ornamental greenhouse Fern. There were but two Selaginellas new certificated of 1886—S. gracilis of Messrs. Veitch, and S. tessellata—and both are distinct so far as their present growth will permit of judgment.

The Foliage and Flowering Indoor Plants.

Under this heading may be brought the fine Amaryllis of Messrs. Veitch, of which it is sufficient to say that in them they have surpassed all their former efforts; and the same may be said of the greenhouse Rhododendrons, of which they are well worthy to retain the monopoly of the new things, so long as they continue to improve them as they now do. Eight new varieties of greenhouse Rhododendron were certificated to this firm, and none to any other Mr. B. S. Williams and Mr. Jas. Douglas also received acknowledgment for some very fine Amaryllis; and Mr. Laing, Mr. Cannell, and Mr. Owen succeeded in passing a few Begonias, but the already known kinds are so fine that a tuberous Begonia must have extraordinary merit to pass muster now. Impatiens Hawkeri of Mr. Wm. Bull will prove a real boon to plant lovers, giving them a plant as easily grown and propagated as a Pelargonium, and a profusion of very large rich crimson flowers; his Aphelandra chrysops, with foliage prettily marked in the way of A. Leopoldi, will also prove a good decorative plant. The Cespedezia discolor from the same establishment, too, is a very handsome spreading foliage plant, but will probably not prove free to propagate. Phrynium jucundum of Messrs. Veitch is a great beauty, with oblong ovate leaf-blades which are about half white and half green quaintly and beautifully mixed. Among the flowering indoor plants certificated this year, too, I call to mind three very old plants which sets one longing for something new of equal merit, viz., Beaumontia grandiflora, with large Datura-like flowers, sent by Mr. Ruffett from Earl Cowper's garden (see *Gardeners' Chronicle*, vol. xxv., p. 593); Clerodendron nutans, with long drooping sprays of white flowers (figured in the *Gardeners Chronicle*, p. 689, vol. xxvi.), sent by Mr. Head from the Crystal Palace; and Bignonia Chamberlayne, from Mr. C. R. S. Dickens. Certainly these examples were from very old-established plants, so it is hardly fair perhaps to expect our recent acquisitions to come up to them yet. Only one Dracæna—D. nobilissima (Williams), and two Crotons—C. Aigburthensis and C. Newmanni (R. P. Ker), were honoured with certificates—the two Crotons being beautiful enough to gain over any despisers.

Hardy Plants.

Cratægus pinnatifida major (Messrs. Veitch) furnishes a shrub with handsome flowers succeeded by fine large scarlet berries, and that, too, with handsome foliage. It is very hardy, and it should be extensively planted. Ulmus Pitteursii pendula, certificated to W. Paul & Son, also brings us a desirable new ornamental tree; and the Crinum Powelli, certificated from Burford Lodge on September 21, proves to be the stateliest and most beautiful white or blush-flowered hardy bulb we have. 1886 has been marked by what was called the revival of the Hollyhock and that fine garden flower was shown clean and well bloomed by several exhibitors at South Kensington—Messrs. Webb & Brand, Mr. Chater, and Mr. Blundell, bringing a few deemed worthy of certificates. The Pyrethums and Gladioli of Kelway, the Narcissi of Mr. Barr and others, the Carnations and Picotees of Mr. Douglas, and, for summer decoration, the Dahlias of Cannell, Ware, Keynes, Turner and Rawlings, furnish good account in new things for the year.

But now, at the finish, I come to a class I should like to see better represented in certificated plants, viz., that which is commonly called hardy herbaceous and

alpine plants. Mr. Ware has, during the past year, received certificates for a few good things; and in his Primula capitata major and P. Reidi, G. F. Wilson, Esq., Heatherbank, Weybridge, introduces to notice two really fine and distinct plants. The former is a bold tall-scaped plant with fine heads of violet coloured flowers, and the latter a neat white and delightfully fragrant highland Indian species, and quite a novelty to growers. I cannot, however, help thinking that more might be done for these "everybody's" plants, if growers would but exhibit them more frequently.

Add to the good things enumerated some fine new Chrysanthemums, and many other desirable odd things, and I think we must conclude that the work of improvement and addition to our known and proved plants was satisfactorily done in 1886. *J. O'B.*

FLORISTS' FLOWERS.

HERBACEOUS CALCEOLARIAS.

THE earliest batch of these will require more room, as they are now making free growths, repot the second and late successions; the late grown ones should also be potted off, and the whole stock should be kept steadily growing. No place suits them better than shallow, cold pits, where the surroundings are always moist, and the temperature steady at about 45°.

PRIMULAS.

Plants for late blooming should at once receive their final shift, using a good rich soil, consisting of loam and leaf-mould in equal proportions, some old Mushroom-bed material, sifted through a ¼-inch mesh sieve, with an addition of silver-sand. Clear manure-water should be given to plants which are throwing up their flowers, also to those that are bearing seed. Whenever water is applied to Primulas care should be taken not to wet the centre part, as it is apt to cause canker and decay.

CINERARIAS.

Those which were potted early will now be coming into bloom; if any are required early they may be placed in a little warmth, and although they are impatient of much artificial heat, they will bear a little gentle forcing. The potting on of late successions should no longer be delayed, for if once the roots get pot-bound the plants are thrown prematurely into flower.

PELARGONIUMS

which have been tied out should now be examined, taking out weakly shoots, and stopping and regulating the strong shoots. Admit all the light possible. Plants of both show and fancy kinds should now be in airy positions and near the glass. Spot is sometimes troublesome at this season if the temperature is too cool and other conditions are favourable; but in a temperature ranging from 45° to 55° the plants can be kept in perfect health. Pelargoniums will now be at a standstill as regards growth for about six weeks, careful watering must therefore be practised until the days lengthen.

CARNATIONS

which were under the protection of pits will by this time have finished flowering, and should be removed to a cooler pit or frame, and their places filled with others, so as to keep up a regular supply. All those which are coming into flower should have frequent waterings with liquid manure. *A. Evans.*

ANEMONES AND RANUNCULUSES.

As regards our collection of named varieties of the Anemone, they have been planted out where they are to flower. This was done early in December. Maddock and some of the old fanciers used to plant six weeks earlier than this, so that the tubers had a chance to lay hold of the ground before sharp frosts set in. I have learned from experience that a great deal depends upon the quality of the soil. I planted four years ago a collection of fifty of the best varieties in heavy loam, and although the ground was well drained many died, and the others were poor. Now they are planted in much lighter loam, and the planting is done in this way:—A drill is drawn as for Peas, and the tubers are set out 3 or 4 inches apart; when this is done the drill is filled up with a compost of loam, leaf-mould, and sand in equal proportions. The bed in which they are to be planted should be deeply trenched and well enriched with decayed stable manure. Ranunculus roots are not planted until the middle of February or later; but in order that they may have a chance to do well, it is very desirable that the bed or border should be prepared for them. The old plan of clearing out the bed to the depth of 18 inches or 2 feet and filling it up with turfy loam ought to give wonderful results, but we have no time to spare for such extravagances. However, we do trench the ground, and manure it well. When the time to plant arrives, we are sure to find it wet, probably frozen—if the latter, wait for a thaw. If it is merely wet, and there is a supply of fine dry peat available, or the siftings from the Orchid-houses, 3 inches of this spread on the surface and worked in with a fork will make it in capital condition to receive the tubers. Peat is suitable for the growth of Ranunculuses, and is a good medium in which to place the tubers, the fibres going down into the rich loam and manure beneath. *J. Douglas.*

WHAT IS A PICOTEE?

Having recently found the word "Picotee" in a standard work spelt with two c's, I tried to discover its derivation as well as its definition. In Robinson's *English Flower Garden* we are simply told that it is "from the French *piquoté*," but I can find no such word referred to a flower in any French Lexicon. On the other hand, Vilmorin (*Les Fleurs de pleine terre*, ed. iii., p. 763) calls picotés "*Œillets de fantaisie à fond blanc, ou Œillets Anglais.*" Two Dictionaries on gardening state that Picotees have a white ground spotted with red. I can find no nearer or more probable derivation than the French *picoté*, "marked with the small-pox." This is hardly complimentary to the flower. Can any one suggest a better origin? *C. Wolley Dod, Edge Hall.*

MESSRS. CURTIS, SANDFORD & CO.'S ROSERY, TORQUAY.

ONE of the most remarkable features in the development of the new township of Cockington is the extension of the grounds of the Devon Rosery. Twenty-five years ago Mr. Henry Curtis took on lease 8 acres of land for Rose growing from Mr. C. H. Mallock. The commencement was an unpretentious one, for only one small greenhouse was put up. At the present time there are 25 acres in cultivation, and about twenty hothouses, greenhouses, pits, &c., having in all a total length of more than 1000 feet; some of these are lofty span-roof structures of an ornamental character. For many years the special feature of the firm was the cultivation of the Rose, in which, from his large and varied experience, Mr. Curtis is a practical authority. The firm, however, soon directed its attention to other branches of horticulture and floriculture, and although Rose-growing is still a specialty, every branch of an extensive and well-appointed nursery is carried on under the capable superintendence of Mr. Sanford and the other partners of the firm. The rosery possesses exceptional advantages in soil and situation; for besides adjoining the railway, it lies in one of the most beautiful and sheltered valleys of Torquay, commanding a lovely view of Torbay.

The new offices and seed stores which have just been erected have, when viewed from a short distance, a semi-ecclesiastical appearance. The building has a lofty and bold elevation, and is built of indurated red sandstone, obtained from the Paignton quarries. On the ground floor are the offices, seed, bulb, and garden implement store rooms, 40 feet long; strong room, lavatory, &c.; next to this is the flower arranging and packing room. On the upper floors are the private office and three large store-rooms, communicating with the lower floor by means of a lift. Every part is perfectly ventilated by means of shafts. There is no plaster on the interior walls, the whole of which, with the ceilings, are boarded with varnished red deal. It is altogether a substantial building, and indicates no little enterprise on the part of the firm.

AMATEURS' NOTES.

LÆLIA ANCEPS HILLIANA.

IN reply to "An Amateur's" note on this plant upon p. 11 of January 1, 1887, I can inform him that my plant is "fragrant," but has not a strong perfume equal to scenting the house like some L. autumnalis, but is very sweet indeed. It may also interest him to know its origin; it came from Sander's importation of January, 1881, sold at Stevens' Rooms.

THE NEW VARIETIES OF WHITE LÆLIA ANCEPS.

L. a. virginalis seems to be equal to L. a. alba, and the distinction on paper seems but small. It would be interesting to know if "Amateur" flowered it out of the great importations of 1885 and 1886. These new white anceps have still refused to bloom with us, though they improve in size of bulb, and leaf and root, and really some are now nearly as large as their imported bulbs. We grew them in the Cattleya-house, which is a curvilinear span running east and west, exposed to full south sun (but in shade, with only one thickness of "cotton shading"), and their quarters are on the north side stage, standing on inverted pots on a shingle bed, on which Panicum and Tradescantia grow. We tried some in baskets and one on cork: these have proved that that is not the way to grow them. Our potted plants are best. Some we tried in the cool house have done well (as also the typical L. anceps now blooming there), but they were poor bits to start with, hence a fair comparison cannot be made.

ODONTOGLOSSUM HYBRID (ROSSII?)

I have just bloomed this, which rather puzzles me. Only one flower has come, or I would send a specimen. The sepals and petals are white, with a shade of green; the bars and blotches as in O. R. adspersum, the lip is pure white, very bluntly cordate; and here comes the anomaly—the crest is as white as that of O. Ehrenbergii rubescens, which I have in bloom; it seems to me to be a white segmental adspermum having a white crest. It came from the importations of John Cowan (Limited), so those who have plants should look forward to equally good things. My plant has some sixty bulbs and ten leads, so doubtless it has left a "family" somewhere. *De B. Crawshay.*

ESTABLISHING CATTLEYAS IMPORTED IN THE AUTUMN SEASON.

The wonderful and perfect condition of the recent plants of C. Lawrenceana imported by Mr. Maw, and sold by Messrs. Protheroe & Morris, was the theme of general remark: the bulbs looked as fresh, the leaves as green, and the eyes as prominent, though quiescent, as if growing in their native habitat of Roraima, and the public showed its full appreciation of their excellent condition by buying them liberally.

But, alas! there is one factor in the calculation which neither skilful collection, careful packing, nor experienced treatment can eliminate—our English autumn weather, and the two dreary months for all vegetation yet to come. Nature will not be ignored; she asserts herself, and claims a respect for her ways which, willingly or not, we must concede.

These beautiful leaves are all falling, first shrivelling in places, then going off in colour, and finally dropping, so that in most instances the plants will break with bare poles, instead of the attractive foliage they brought with them, and this though all care be taken. A genial, growing atmosphere, ranging 53° at night to 65° by day, plants potted in

crock, or blocked and kept dry rather than wet at the roots, with just enough moisture to keep the bulbs plump, has produced the above results. Nor have others been more fortunate with colder treatment. In truth, no reproach can be laid to the gardeners, but the fact remains—it is unsatisfatory always, and unsafe generally, to try and establish these plants at the fall of the year, when all Nature is in decadence or at rest.

When will importers learn this, or growers protect themselves by abstaining from these experiments, when failure stares them in the face? So long as the latter are foolish enough to spend their money at such seasons of the year, the demand will create the supply. Is there not spirit enough to insist on a "close time" for imported Orchids, when importation involves death? *An Amateur.*

FRUITS UNDER GLASS.

PEACHES.

THE trees in the early house should be damped over with tepid water twice a day during bright sunshiny weather—in the morning after the temperature has risen a few degrees, and when closing the house in the afternoon. The night temperature should be from 40° to 45°, and 10° higher by day, with fire-heat and sunshine combined, when a little fresh air may be admitted. When the trees come into flower, a drier and more airy atmosphere must be maintained, and to secure a good set the flowers should have a camel's-hair pencil passed over them every day at about 11 o'clock with that intent. Where there are several heated houses for Peach-growing, a second house should be kept close now, and treated as indicated above. If not already done, the trees in the late houses should be pruned and trained, the houses cleaned, and the borders top-dressed, as recommended at p. 559, last volume.

FIGS.

The fruit on the trees treated as advised on p. 623, vol. xxvi., n.s., will now be swelling, therefore extra care must be exercised in giving warm water at the roots, because, if the trees be subjected to a check while in this stage of growth, either by too much or too little water, or insufficient heat, the fruit will turn yellow and drop. Let the night temperature range between 55° and 60°; and that by day, with fire-heat, from 65° to 70°, and 80° by sun-heat, putting a chink of air on, however, when the thermometer registers 75°. Damp the trees, pathway, &c., both morning and afternoon. Trees for yielding a successional supply of fruit should be started forthwith, giving them temperatures 5° less all round than those just mentioned, and the same treatment as regards atmospheric moisture. *H. W. Ward, Longford Castle, Salisbury.*

RUELLIA HERBSTII.

THE ever-changing names of garden plants are productive of great annoyance to gardeners, who dislike synonyms and aliases. The subject of the present note is figured in the *Botanical Magazine*, t. 5156, under the name of Dipteracanthus, and the genus Stephanophysum itself is now referred to Ruellia. The whole order Acanthaceæ is in a state of great confusion, and will probably remain so for many generations to come. This must be accounted for by the great similarity of many of the genera. Under whatever name botanists may decide to place the above subject, it will never detract from the handsome appearance presented by the plant. Apart altogether from its own intrinsic merit, its flowering in midwinter must be taken into consideration. Any one who has seen a tolerably well flowered plant must be surprised that it should have suffered such neglect in gardens since it first flowered in this country in 1859. It was originally sent from Brazil, and may be seen at present in the Begonia-house at Kew. It is of sub-shrubby habit, and if somewhat inclined to be leggy—a fault that applies to many of the order—a stock of young plants can always be kept. The flowers are abundantly produced in axillary clusters terminating the stems, or, in other words, forming a leafy inflorescence. The corolla is furnished with a long, slender, pale purple tube, above which it is abruptly bent, somewhat widened and deeper in colour, terminated by a short reflexed white lamina. Altogether the flower is comparatively large, and its peculiar conformation, coupled with the lively contrast of colours, constitutes a subject worthy of the attention of cultivators for winter flowering. Grown in quantity in light rich loam, after the manner of Justicias or Ruellias, it could not fail to be of great service for stove or warm conservatory decorative purposes. *J. F.*

NEW FLOWER HOLDERS.

THESE useful little holders (fig. 10) for cut flowers, and especially Chrysanthemums, at exhibitions, are the invention of Mr. Benjamin Field, of Swan Place, Old Kent Road. The chief advantage is that the smaller of the two is intended to hold the flower, and slides tightly into the larger tube, which is the water-holder, by which means the flower can be cut with a long stalk and fixed at varying heights, and

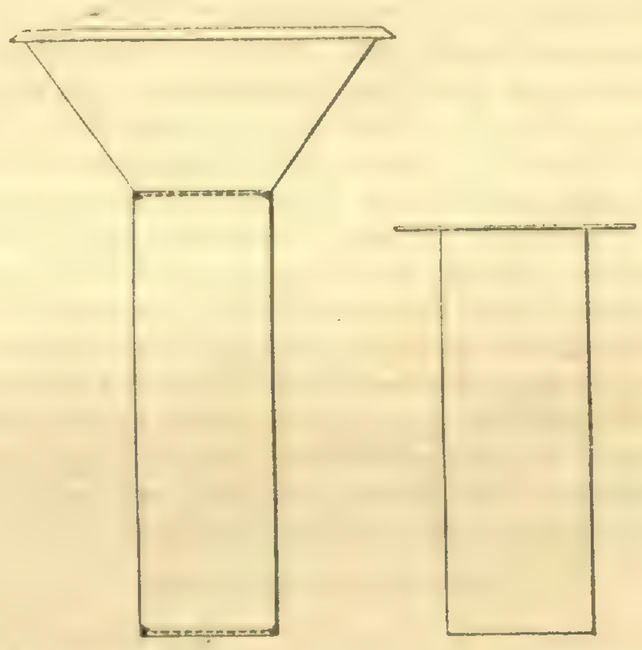

FIG. 10.—FLOWER HOLDER.

withal held steadily in position. The holders are made in three sizes and shapes to suit incurved and reflexed or Japanese varieties.

HEATHS.

THE SOIL AND POTS.

THE soil should be the best hard brown fibrous peat, which should be broken up fine by the hand, and have every particle of woody matter and Fern stems carefully picked out in the process of handling it. To this add a liberal allowance of sharp clean sand, and mix it thoroughly by frequent turnings and shakings. When properly broken and mixed it will present the appearance of being a very sandy mass, and there should not be larger lumps in it than would pass easily through a half-inch riddle.

The best size of pot for beginners is that of 5 inches diameter; it will take a 4-inch bell-glass within the rim, and accommodate many cuttings. About an inch and a half of the bottom must be filled with rather roughly-broken crocks, and protected by a thin layer of the compost. The compost may then be filled up to within half an inch of the level of the rim, making it compact and firm by the free pressure of the thumb, and finishing perfectly smooth and level. A layer of half an inch of sharp silver-sand will bring the contents of the pot about level with the rim, and a good watering will fully prepare it for the reception of the cuttings.

PREPARING AND INSERTING THE CUTTINGS.

Everything should be in readiness to receive the cuttings before they are taken from the plant. They must on no account be allowed to lie exposed to draughts either before or after they are made. As already said, small cuttings are relatively preferable to large ones; those an inch in length are better than those that are twice that length. In preparing them, clear the leaves on the lower half of the shoot away with a small scissors, and clean the base by cutting it straight across with a sharp knife on the nail of the thumb in the same way as that in which the nib of a quill pen is formed. They are then ready for insertion in the pot. Before proceeding to insert them, place the bell-glass on the top of the pot and press it so that it will leave an impression of its rim on the sand, then with a fine pointed dibble place the first cutting in the centre of the circle, and arrange the others in circles around it closely and regularly, but not so closely as to touch and overlap each other's foliage. Arrange them thus to within half an inch of the impression made by the bell-glass; give a slight dewing with a fine-rose water-can to settle the sand firmly around each cutting, and when the foliage has somewhat dried place the glass over them, and put the pots in the position they are to occupy till the process of rooting is accomplished. The foregoing small details may appear rather tedious in reading, but they will not prove so in the performance to those who take an interest in the work. There is ample scope for the exercise of skill and dexterity in manipulation and taste, and precision, even in the insertion of cuttings—every point should be done well.

THE AFTER-MANAGEMENT OF THE CUTTINGS.

The time required to strike root by hardwood Erica cuttings varies much with individual sorts, but the variation will range from three months with the quicker rooting sorts to six or seven months with those that are slower. Nothing should be done to hasten them in any case, any attempt to do so being certain to lead to disaster. We have already indicated the temperature in which they should be kept and the position in which they should stand as regards light. Never allow strong light to fall upon them; ten or twenty minutes of direct sunlight would ruin them, especially in the early stages, but subdued light is essential, and they should have all that is possible of that, especially during the dark winter months during which chiefly they will be forming callus and roots. Throughout the whole course the glasses should be removed for a short time, say ten or twenty minutes, according to the weather and the state of the light during the morning, leaving them off the shorter period when bright weather prevails, and they must be wiped clean and dry at the same time. Watering, when required, should be done at the same time. I prefer watering by immersion to surface watering, the pots when found dry being immersed for a very short time to the depth of about 3½ inches in water. During prolonged bright weather, especially in spring, it will be beneficial to give them a slight dewing overhead in the morning, when the glasses are removed. Continue this treatment closely till the cuttings show by their dense green colour that they are doing something towards establishing themselves, when a little more may be added to the breathing time or period of exposure to the air in the morning; but let this be done by degrees and with caution.

Damping off and mildew are the only enemies that may be anticipated. The former must be checked chiefly by timely careful removal of the affected parts, and a little more ventilation in the morning; and if the attack is persistent the glass may be tilted a little during the night also, or constantly, if the case appears to require it. Dusting the affected spots with finely powdered charcoal will often prove effectual in arresting damp when nothing else will. Mildew must be treated with sulphur, and if taken in time will never prove troublesome.

When the cuttings begin to form roots—a point which will be ascertained by a visible change in their

appearance, much more easily comprehended by the practised eye than described by even the most facile pen—it will be necessary to give more air. But every change in treatment must be initiated with caution and in a gradual way, so as to be almost imperceptible to the subjects, and the operator must be keenly on the alert to detect any adverse effects of his treatment. The cuttings may be induced by too much warmth to make growth before there are any roots formed—an undesirable evidence of progress at the wrong end, which will probably dry up the callus and put an end to any chance of roots being formed at all. Equable coolness of temperature is the best, the only preventive of such a contingency as this.

There should be no haste in the desire to pot off after rooting has become assured. Let the plants be thoroughly established and make their first growth in the cutting pot. It may be desirable to let them stand over winter in the cutting pot if their growth has been made so late in the season as to render doubtful the chance of their establishing themselves in separate pots before winter. Potting off later than the beginning of September should not be attempted by beginners; if it cannot be done earlier in the summer than that it had better be left over to the following spring. Small pots—thimbles—should be used for potting off, and the compost should be similar to that, in the cutting pot. The plants will require to be shaded and kept close for a few days after potting till they recover the shock of removal, after which gradually inure them to the treatment required by established plants. *W. S.*

THE HARDY FRUIT GARDEN.

In pruning wall trees, where the spurs are of great length, a few should be entirely removed annually, till by degrees all the fruit-bearing shoots have been reduced to moderate length, and thereby become more protected by the wall, as well as neater looking. Pyramidal-trained Pears and Apples of weak growth should be pruned in accordance with their requirements, and may be cut in much harder than those of stronger growth.

The pruning of Gooseberries and Currants should now be pushed on with in mild weather, but where the birds are troublesome, and destroy the buds of the Gooseberries during early spring, it would be well to delay the pruning of these till a later period. As the work proceeds, shoots suitable for the making of cuttings should be saved, tied in bundles, and the butt-ends of the same put into the ground until the time arrives for preparing and planting them in the nursery. Orchard trees should receive a little timely pruning annually by thinning out the middle growths of the crown, the intercrossing branches, and cutting out of the dead shoots. Nut bushes should also receive attention by thinning out some of the older branches, shortening back the tips of the shoots later when the male blossoms appear. In pruning Morello Cherries, some of the oldest of the branches should be removed annually, in order to allow a good quantity of young bearing wood to be laid in.

The training of Morello Cherries should now be nearly completed, as this is the most tiresome work of all, the whole of the tree having to be unfastened from the wall to allow of its being properly regulated. The training of other trees on walls can be regulated according to the state of the weather, those on north and east walls being done during the warmer parts of the day, and the others in the early morning and late in the afternoon. Cast nails should be used. For Morellos cast-iron nails of 1 inch are best and 1¼-inch nails for most other fruiting trees. Willow shoots are excellent material for tying the strong branches of Pears and other fruit trees, and these will last for two years, but require cast studs to fasten them to. In all gardens there should be a small bed of the finer growing, tough Basford Willows, as in the bad weather handy men can be employed in making fruit and vegetable baskets, and the finer shoots come in useful for fastening fruit trees, Raspberries, Roses, &c. Where Cherries are trained to wires on walls, small twine is the best tying material, taking care that the ties will allow for the swelling of the branches: especially is this so with Mayduke and other dessert varieties.

The fruit-room should receive attention every few days, and all decaying fruit removed. We are now using the last of the Marie Louise and Knight's Monarch Pears; one of the next to succeed these is Winter Nelis, fruits of which are now ripening. Of Apples in use at the present time for the dessert, we have King of the Pippins, Cox's Orange, and Blenheim Orange Pippins; and Stirling Castle for culinary purposes. *Edward Ward, Hewell, Bromsgrove.*

ORCHID NOTES AND GLEANINGS.

CALANTHE VEITCHII ×.

A striped form of Calanthe Veitchii has been kindly sent us by Messrs. Veitch, who tell us that it has also been exhibited at Ghent by M. D'Haene. We figure one of the flowers (fig. 11) in which the distribution of the colour is tolerably symmetrical, one

Fig. 11.—striped calanthe.

half of each segment being rose-pink, as in Limatodes rosea, the other half cream-coloured, as in Calanthe vestita; but in other flowers on the same raceme the two colours were very unequally apportioned. It will be remembered that Calanthe Veitchii × is a hybrid raised by Mr. Dominy between Calanthe rosea (= Limatodes rosea) and C. vestita. Now, after the fashion of hybrids, it shows a tendency to dissociate its heretofore blended characteristics. The question arises whether this dissociation will continue till the plant reverts completely to the state of one or other of its parents. If it were propagated from seed it probably would do so, but pseudobulbs may be expected to throw these parti-coloured flowers, somewhat as Cytisus Adami does. But in the case of such erratic creatures there is no telling what they will do. *M. T. M.*

A New Bi-generic Hybrid.

At the present time there is flowering in one of Messrs. Veitch's houses at Chelsea a very interesting hybrid raised in their establishment by Mr. Seden. It is the issue of Phaius grandifolius by Calanthe Veitchii, itself a hybrid production. This "Phaio-Calanthe" is in habit intermediate between the two parents, and the flowers also are intermediate in form and colour. The blossoms are nearly 3 inches across, triangular in outline, with sepals and petals spreading, and with the lip projecting. The sepals are lanceolate, ivory-white, flushed on the inner side with pale primrose-yellow, and with six or seven nerves. The lateral petals are ascending, somewhat smaller than the sepals, and recurved at the margins. The lip is more like that of a Phaius than of a Calanthe, except in the spur. It exceeds the other segments in size, and is confluent with the margins of the column at its base; the lateral lobes are upturned, obtuse or rounded, the anterior lobe divided from the lateral ones by a deep sinus, projects more or less horizontally, transversely oblong and divided at the apex by a shallow notch into two rounded lobes. All the lobes of the lip have a pale rosy flush, the central portion or disc being yellow and marked by prominent yellow keels, and prolonged into a short slender curved spur as in Calanthe. The column resembles that of a Calanthe. It is oblong obtuse, inclined forward, hooded at the top, bearing the distinctly two-lobed anther in front. Pollinia eight, compressed, wedge-shaped, tapering by slender stalks into two groups of four each. Ovary downy, slender, elongated, curved. In the more essential floral characters, then, the hybrid resembles the Calanthes rather than the Phaius. The flower differs considerably from that of Phaius irroratus × (*Gardeners' Chronicle*, 1867, p. 264, with fig.), a hybrid between Phaius grandifolius and Calanthe vestita, not only in the absence of spots but in the form of the lip.

Doubtless this interesting novelty will in due time be transmitted to Professor Reichenbach, from whom, therefore, we may expect in the future a full account and a name, while in general appearance the reverse holds good. *M. T. M.*

Dendrobium inauditum, *Rchb. f.*

According to the figure in the *Lindenia*, t. 66, this is assuredly an astonishing Orchid—not, indeed, one that one would put in comparison with a flaunting Cattleya or an elegant Odontoglot, but one that one would be included in that museum of wonderful curiosities to which the Orchids furnish so many specimens. Truly this Dendrobe—we take Professor Reichenbach's assurance that it is a Dendrobe—has the foliage and inflorescence of a Pleurothallis, and the flowers of a Brassia—anything superficially more unlike a Dendrobe can hardly be imagined. From the apex of an elongated ovoid pseudobulb is prolonged, according to the drawing, a long slender stalk like a leaf-stalk 4 to 5 inches long, and bearing at its extremity an elliptic leaf-blade. In flowering specimens the short cyme is borne on the top of the leaf-stalk. The flowers measure 3 inches or more in longest diameter, and consist of linear yellow segments with a broad base; the lip is much shorter, broad based, with a short blunt spur and the anterior lobe prolonged into a sharp point. The plant is a native of New Guinea.

Phaius Humbloti, *Rchb. f.*

This handsome species, described in our columns, December 25, p. 812, was discovered in Madagascar by M. Léon Humblot. The habit is that of other species of the genus, but the oblong flowers are of a lilac colour; the posterior part of the lip is brownish-purple, the anterior lobe lilac. The plant grows naturally in damp, comparatively shady places. It is figured in the last number of the *Reichenbachia*, t. 17.

Zygopetalum rostratum.

An old Demerara species, rarely seen now-a-days. It is an epiphyte with broad oblanceolate plicate leaves; flowers nearly 4 inches across in the long diameter, with lanceolate segments, coloured almost like those of a Phaius, and with a large white convex lip, marked with a few pink stripes near the base; the thick hooded column is also white. *Lindenia*, t. 68.

Chysis bractescens.

The flowers of this Orchid form a five-pointed star, with thick, broad, obtuse, white sepals and petals, and a three-lobed lip, the two lateral lobes ascending, the central lobe spreading, ovate-acute, with 5—7 prominent longitudinal ridges. It is

found in the forests of Mexico growing on trees at the foot of the mountains in a temperature ranging from 70° to 80° Fahr. It should be grown in a well-ventilated part of the East Indian-house, in a basket near the glass, but shaded from the direct sunlight. Abundance of water should be given during the growing season, but in the resting season the plant must be placed in a cooler and drier atmosphere. It flowers in May. *Reichenbachia*, t. 18.

Cattleya speciosissima var. Buchananiana.

A form of C. speciosissima which flowers at the end of September when Orchid flowers are scarce. Its broad petals and magenta-coloured lip with a yellow blotch encircling the upper part of the tube render it very showy. It requires the same treatment as C. labiata and C. Mossiæ. Moderate water supply, free drainage, plenty of light with little shading, and a moderate temperature are the principal requirements in its culture. *Orchid Album*, t. 261.

Lycaste Deppei punctatissima.

A form of this species remarkable for the multitude of small pink spots with which its flowers are besprinkled. It is a winter-flowering form, and lasts in beauty for several weeks. They should be grown in a cool house and given abundance of water during growth. *Orchid Album*, t. 262.

THE COMMITTEES OF THE ROYAL HORTICULTURAL SOCIETY.

With the close of the year 1886 the Fruit Committee of the Royal Horticultural Society completed the twenty-ninth year of its existence. The Council of the Royal Horticultural Society having announced, in March, 1858, their intention to form a permanent Fruit Committee, the first meeting appears to have been held on July 5 in that year, in the old offices of the Society in St. Martin's Place, and the sittings have continued uninterruptedly ever since. At the time of the formation of the permanent Fruit Committee the British Pomological Society was still in existence, having been founded in 1854, and it commenced its operations at the end of that year. It continued to meet up to and through 1859, and then ceased to exist, finding itself superseded by the Fruit Committee of the Royal Horticultural Society. It was not until 1859 that the Floral Committee was formed. The old National Floricultural Society, which was established in 1851, was, up to the commencement of 1859, the tribunal to whose decisions were submitted the new plants and flowers of the year; but the Royal Botanic Society, having at the end of 1858, or early in 1859, announced their intention to hold "extra meetings, for the purpose of awarding prizes to seedling plants, both species and varieties," the National Floricultural Society was dissolved on March 3, 1859. Then was founded the Floral Committee of the Royal Horticultural Society, and the first meeting was held on July 28, 1859, the late Rev. Joshua Dix being nominated the first Chairman.

For some years the two committees were permanent bodies, and the practice of revising the committees appears then to have been in this wise:—At the close of the year the record of the attendance of each member was read out; the names of three or four, or more of the members who had been least frequent in their attendance were omitted, and the committee nominated others to take their places, subject to the approval of the Council, which body rarely, if ever, over-ruled the nominations of the committees. That this practice acted harshly in the case of some members who resided at a distance from London there could be no doubt; but it placed in the hands of the committee a power properly theirs, seeing that the members gave valuable time and experience to the service of the Society, without fee or reward. It also ensured their independence of the Council to a certain extent, and inspired confidence in their deliberations and awards.

About 1869 or 1870 all this was changed, the Floral and Fruit Committees henceforth ceased to exist at the end of the year, and were reconstructed by a committee of the Council, while the privilege of nominating was also taken away from the committees: this was not done without protest on the part of certain influential members of the committees, but nothing came of it. The members of the three committees are therefore now the nominees of the Council. Whether that body is well adapted to constitute an important and representative committee of this character is probably open to doubt, because the work of revision is certain to be undertaken by some one or two prominent members of the Council, and thus an opportunity afforded for the exercise of personal likes and dislikes, The best man should be appointed quite apart from considerations of this character.

The lists just published show that each of these two committees consists of thirty members. Is not this number too large for satisfactory deliberative purposes? To the credit of members of both bodies be it said that the average attendance is a very high one; those who live at a distance, and to whom the matter of getting to London is, in not a few cases, one of expense, invariably put in an appearance when the presence of subjects in which they take a special interest may be expected. More than this can scarcely be required of them unless they are men of means. But the average attendance is so large, that it entails upon the Chairmen of both bodies—and especially so in the case of the Chairman of the Floral Committee—an amount of labour that severely taxes his physical powers and good humour. There is observable (by way of illustration) a tendency on the part of some, who have a *penchant* for a particular class of flower, to group themselves together and hold little conferences among themselves when anything is on the table in which they do not take a special interest. What can be more distracting to a Chairman when he is endeavouring to concentrate the attention of the committee on a particular object than to observe a coterie examining a box of blossoms some one has brought in his pocket, and with which the committee have nothing whatever to do?

Sometimes a member is held in converse by an outsider in reference to matters altogether foreign to the particular business of the committee, his attention is abstracted, and then anything like a needful general deliberation cannot occur. The Chairman can scarcely reprove a member of the committee openly, as a teacher would do an inattentive schoolboy. It should be the earnest endeavour of each member of the committees so to act as to give the Chairman the support necessary to an adequate discharge of his duties, so that the work shall move forward smoothly, unitedly, and thoroughly; and this can only be done by the heartiest co-operation all round. *X.*

[With reference to the nomination of new members of the committees, we believe the fault lies with the members of the committees themselves. We remember, only a year or two ago, when this question was last publicly discussed, that some member or members of Council attended the Floral Committee and expressly stated that it was the desire of the Council to receive suggestions of this character from the committee. If this matter were placed on the Chairmen's agenda sheet, say at the last meeting in November, as a matter for discussion, and again at the first meeting in December, for definite proposals, no doubt the Council would gladly listen to the suggestions made. Ed.]

PLANTS AND THEIR CULTURE.

TEMPERATURES.

Upon the preservation of suitable temperatures the welfare of the subjects grown greatly depends, and at no other time is attention to this matter more necessary than during frosty weather, when minimum temperatures have to be kept, so that plants are not excited to start into premature growth. At present the night temperature for stove plants should be kept near 60° Fahr., and may fall a few degrees lower for a short time rather than that excessive firing, which would unduly parch the atmosphere, should be persisted in. The day temperature should range 5° or so higher by artificial means, and such damping of surfaces should be done as will counteract the injurious influence of artificial heat. The intermediate-house should have a night warmth of 50° to 55°, with a corresponding rise by day. This house suits a variety of plants that will not succeed satisfactorily in any other. True greenhouse subjects may be kept at from 40° to 45° at night, and 45° to 50° by day. Cape Heaths and kindred plants should have only such artificial heat as will preserve them from frost and damp. No favourable opportunity to give air to these should be missed, but cold draughts would be hurtful.

Forced Plants.

In order to keep up a regular supply of these, it will be necessary to introduce some at short intervals into the forcing-house, which should be provided with a bed of warm leaves in which to plunge those that are benefited by bottom-heat. Space should be made by drafting those that are advanced into an intermediate temperature, where the plants can be gradually hardened so as to endure the treatment they will be exposed to at a later date. Those to be placed in heat now may consist of Charles X. and Persian Lilacs, Deutzias, Spiræas, Azalea amœna, A. mollis, A. Fielder's White, and A. Deutsche Perle; Hyacinths, Tulips, Narcissus, Lily of the Valley, Staphylea colchica, &c. A few Amaryllis and Callas, if gently forced now, will prove admirable early decorative plants. The Lilacs should have been prepared for this purpose by being lifted and potted in the autumn, but if neglected, this may yet be attended to, as they are very accommodating in this respect, and yield an abundance of blossom for little labour. *T. Coomber, Hendre Gardens, Monmouth.*

VARIATION IN PLANTS.

In spite of the assertion, by De Candolle and other authors, that "a cultivated species varies chiefly in those parts for which it is cultivated," we find great degrees of variation affecting different organs, and often extending to other parts of the plant structure. This statement applies both to plants in a wild state and to those under the care of man, when in the latter case the conditions may be considered more or less artificial. The reasons for this similarity of variation, both in a wild and cultivated state, will be obvious when we consider that a plant must originally vary spontaneously, before man can in any way affect it, at least by selection. This is especially the case where we have obtained by selection in the course of many generations a number of distinct races, descendants of one species, as in the Apple, Pear, Chrysanthemum, and others. It simply comes to this, that man cannot so far alter the conditions, as to cause plants to abandon their natural tendencies, nor to vary except in accordance with natural laws. Therefore in spite of the fact that man desires to select seedlings presenting the requisite variation in one organ or set of organs only, it very frequently happens that there is a correlation between the homologous parts of plants causing them all to vary more or less evidently in a similar manner. Cases of albinism will serve to illustrate this point.

Plants producing red, pink, purple, yellow, or even blue flowers normally, often both in a wild or cultivated state, give birth to seedlings with pure white flowers. Some authors would describe this as a case of reversion. The converse more rarely happens, but Lychnis vespertina, sometimes producing red flowers, and Primulas belonging to different species, are cases in point, both in a state of Nature and under cultivation. In connection with albinos amongst plants, not only are the flowers white, but the foliage and the whole aspect of the plant bears an unmistakably pallid hue, and such plants can often be recognised in the absence of flowers. This paleness in the colour of the foliage does not owe its

existence to man's selection, but is more often an undesirable feature than otherwise. This correlation of homologous parts is exemplified in white-flowered varieties of Lychnis chalcedonica, L. diurna, Silene armeria, Linaria cymbalaria, Campanula rotundifolia, Thymus Serpyllum, and Dianthus deltoides. The same may be said of Impatiens flaccida, which has dark foliage and stems more or less striped with purple, but in the white-flowered variety has pale foliage and pale green unstriped stems. White-flowered varieties of Primula sinensis have pale foliage, and dark-flowered forms are characterised by foliage of a similar tint, more especially evident in the petioles, the midrib, principal nerves, and the under side of the leaf generally. There is also a correlation between the colours of the under side of the leaf and that of the flowers in Senecio cruentus and other species.

The tuberous roots of the Dahlia afford another striking instance of the variability of plants even in the parts that are not specially selected either for the benefit or pleasure of man. Some have large, or even short, thick and very succulent tubers, while in other cases the individual tubers are elongated and spindle-shaped, or long, slender, gradually tapering to a point, and radiating or projecting in all directions. Nor is this variation confined to form, but in a collection of any extent, considerable variety of colouring is found to prevail, such as yellow, white and purple, or violet. This is frequently unnoticed because of no interest to the general cultivator, nor presenting anything valuable either for economical or ornamental purposes. There is also a more or less evident correlation between these colours and that of the flowers. Uncared for and generally unimportant though frequent and considerable variation extends to the foliage, stems, and flowers of different individuals.

What applies to the Dahlia applies still more forcibly to the Potato, notwithstanding the fact that the tubers form the only part specially selected. This is the more remarkable, considering the number of varieties in cultivation at an early period of their history even in this country. In the northern parts of Britain, before the ravages of the Potato murrain became so severe, numerous favourite and valuable sorts enjoyed an extensive cultivation, ranging over wide districts. Now these sorts were so distinct both in the subterranean and aërial parts, that any one possessed to an ordinary degree of the faculties of observation, could tell to a nicety by the stems and leaves alone what particular variety would be found on digging up the plant. Of the twelve to eighteen varieties coming under my observation, and mostly cultivated in the field, I could readily distinguish at sight all, except those which were mere sports from other varieties, differing in the stripes, flakes or markings of the tubers, but having stems and foliage perfectly similar. This fact amply testifies to the amount of variation in the aërial parts of Potatos, notwithstanding that they have not been selected on that account, nor particularly desired for such. Between the stems and tubers there was generally a more or less pronounced correlation in colour. This is the less remarkable when we consider that stems and tubers in this instance consist of homologous parts modified to perform each their own particular functions. Excepting chlorophyll, or the green colouring matter of plants, the other colours are much less affected by light or its absence, so that the relation between stems and tubers of Potatos becomes more apparent, rendering their correlative variation a matter of common and expected occurrence. In striking contrast to the deep purple, almost black, tubers and purplish stems of some varieties may be mentioned their white flowers, while other sorts with white tubers have pink or purple flowers. *J. F.*

—— **Spider Silk.**—Mr. Duthie, Superintendent of the Saharunpur Botanic Garden, reports that he caused to be collected spider's web to be used for weaving purposes. The total weight collected in the season was only 10 lb., and the cost of collection will probably prove too great to render the material of any commercial importance.

The Alpine Garden.

SAXIFRAGA MEDIA VAR. FRIDERICI AUGUSTI

Is the name given to a charming dwarf-growing Saxifrage recently received from the Continent, and which we believe is already in the hands of our leading alpine plant dealers. When ready for general distribution (which we hope will be soon), it will be welcomed as an acquisition by all growers who love these tiny little cushioned alpines. The leaves and general arrangement seem to suggest S. sancta rather than S. media, but the structure of the flowers, &c., brings it closer to the latter, where it has been placed in Dr. Engler's monograph of the genus. It forms little bright green rosettes of narrow lanceolate leaves, the flowers about as large as media, yellowish, borne profusely on short leafy stalks. It is a native of Dalmatia, Montenegro, &c. Its close ally, S. Burseriana, of which there are now a few good varieties in general cultivation, is now showing flowers under the protection of a cold frame. It is a truly charming spring flower, crowning the dense tufts of leaves with its large clear white blooms "before the swallow dares," and lasting until our dearth of outdoor flowers is nigh gone. The varieties major and grandiflora are both desirable additions as well as the var. Boydi, raised in Edinburgh, and of more than ordinary merit.

Aster pyrenæus.

"When we had reached a height of 5400 feet one of our party enthusiastically exclaimed, 'Voilà la plus rare plante des Pyrénées!' while he triumphantly held it in his hand. I went up to him to scan it well, and heard its name, viz., the Pyrenæan Aster." The above is an extract from a botanical excursion in the Pyrenees, and, although it may not be now the rarest plant to be found, there are few surpass it as a subject for the mixed border or rock garden, where it does well. With the exception, indeed, of Aster amellus, its varieties, and A. spectabilis, few others in this large family of Michaelmas Daisies can be at all compared to the above either for beauty or usefulness. Its neat compact habit—the whole plant rarely exceeding 2 feet in height—and the large heads of well-sized lilac-blue star-like flowers, with deep yellow disc, leave nothing to be desired. It flowers earlier than the American kinds, and thrives well in ordinary garden soil. It does not seem to mind a semi-shady position, although it seems sturdier and the flowers better coloured when grown in exposed places. It may be increased readily by division of the roots or by seeds. *D.*

Foreign Correspondence.

VEGETABLE PRODUCTS IN CRETE.

In a report on the trade of Crete for the year 1885, dated Crete, October, 1886, referring to the Olive crop, it is stated as a rule, that a year of abundant Olives—which is the staple product of the island—alternates with one, very seldom with two, of failure. The value of the Olive oil manufactured therefrom varies in the former case from £600,000 to £800,000; in the second, from £60,000 to £80,000; but there are years when it does not reach to £40,000, and exceptionally bad seasons when it hardly attains half that sum. Allowing for all irregularities, the yearly average may be set down at £450,000. It being reckoned that the 86,000 families forming the population of the island consume yearly about 100,000 cwt., which represent £150,000, there remains a balance of £300,000 for exportation in kind or in manufactured soap. The vegetable products of Crete which find their way to the United Kingdom are Olive oil, Locust Beans or Carobs (Ceratonia siliqua), Valonia, and a few raisins. The quantity of Olive oil forwarded to Great Britain in 1886 was 800 tons, representing, at £31 10s. per ton, £25,200, against 1159 tons, at £30 per ton—£34,770—in 1884. The exportation to other countries was 5192 tons, of a value of £150,817. Only 1000 tons of Carobs, of the value of £3120, were forwarded to this country; the only other countries to which Locust Beans were shipped for much higher values were Italy and Russia, amounting together to £17,000. Valonia is only shipped at Rethymo, which is the central district where it is produced. Raisins have begun to be forwarded to Great Britain within the last two or three years, and represent as yet an insignificant value, but it is probable that as they become better known in the British markets the trade may attain a considerable importance. They are grown and prepared on an increased scale from year to year and represented, in 1885, 133,000 cwts., of the value of £22,365. *J. R. J.*

Cultural Memoranda.

Winter-flowering Heaths.

These beautiful winter-flowering plants will succeed in any light structure having a dry, airy, atmospheric temperature of from 35° to 45°. Great care and judgment should be exercised in watering these plants, inasmuch as the soil is made very firm in potting. Therefore, when a plant requires water at the roots it should be watered two or three times in close succession, so as to thoroughly moisten the soil, afterwards allowing it to become moderately dry before again giving water. The most useful variety of Heath to grow is Erica hyemalis.

Pergularia odoratissima.

This stove climbing plant should be included in every collection on account of the trusses of yellow and beautifully scented flowers, which, when grown in a compost consisting of rather more than three parts good fibry loam and the remaining portion of leaf-mould, sand, and small charcoal, and the shoots trained thinly to a trellis fixed near to the glass, are produced from the axil of its pale green leaves. Good drainage should be provided.

Cuttings of Euphorbia jacquiniflora.

These should be inserted singly in 3-inch pots early this month and placed under a handlight in a stove, and stopped twice before shifting the plants into 32 and 24-sized pots; they will make nice useful plants by next November, if they are attended to in the way of watering, and be grown on in heat near the glass during the interval. The long racemes of bright orange flowers, fringed with long narrow green leaves, are much appreciated for decorative purposes during the winter months. *H. W. W.*

Euphordia jacquiniflora.

During the month of January cuttings should be put in of this useful plant. To make a good display, from four to six cuttings may be put into a 48-sized pot, placing the cuttings under a hand-glass (*cloche*) in the propagating-house. If required for flowering late next autumn or early winter the plants may be stopped twice, and then shifted into larger pots. Small shifts are best, and a suitable compost is composed of three-fourths peat with some finely sifted loam and leaf-mould, with a liberal addition of silver-sand. *J. D.*

Gardenias.

These plants should be minutely looked over for the least trace of mealy-bug, and the foliage sponged before the plants come into bloom; for when this work is deferred some of the bloom-buds get damaged. Increase the amount of moisture, both at the roots and in the air. Plants of Tabernæmontana coronaria should have similar treatment if flowers are looked for early in the spring, but when not, they may be kept much drier for the present. *A. Evans.*

Allium album (neapolitanum).

This is a very desirable plant to grow, especially for cut flowers. It is adapted for conservatory decoration, being easily grown and flowered. I imagine this species produces the large quantities of cut flowers of the kind so abundantly imported into this country early each spring, and sold throughout the metropolis and other large towns.

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APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

TUESDAY, JAN. 11 — Royal Horticultural Society: Council, and Scientific, Fruit, and Floral Committees. National Rose Society: General Committee Meeting.

WEDNESDAY, JAN. 12—Royal Microscopical Society.

SHOW.

WEDNESDAY, JAN. 12 / THURSDAY, JAN. 13 — National Chrysanthemum Society: Mid-Winter Show.

SALES.

WEDNESDAY, JAN. 12 — Roses, Fruit Trees, Shrubs, Border Plants, Bulbs, &c., at Stevens' Rooms. 5000 Lilium auratum, Roses, Plants, &c., at Protheroe & Morris' Rooms.

THURSDAY, JAN. 13 — 5000 Lilium auratum and other Bulbs from Japan, Imported Orchids, &c., at Stevens' Rooms.

FRIDAY, JAN. 14 — Imported Orchids, at Protheroe & Morris' Rooms.

SATURDAY, JAN. 15 — Roses, Fruit Trees, Shrubs, Border Plants, Bulbs, &c., at Stevens' Rooms. Miscellaneous Bulbs and Plants, at Protheroe & Morris' Rooms.

Thomas Moore.

To many of our older readers, the announcement of the death of THOMAS MOORE will be received with feelings of sympathy for his family, of regret for his loss, and of gratitude for the manifold services he rendered to Horticulture and Botany. To some of our newer friends, however, THOMAS MOORE will be little more than a name, as, for the last three or four years, he had been incapacitated by failing health from taking that active part in the discharge of which for many years, he was so eminently conspicuous.

THOMAS MOORE was born near Guildford, on May 21, 1821. In early life he held, we believe, various subordinate situations as a gardener, and afterwards served some time at Mr. FRASER's Lee Bridge Nursery and in the Botanic Gardens, Regent's Park, where he acted as assistant to Mr. MARNOCK. Through the influence of Dr. LINDLEY, MOORE was appointed, in 1848, Curator to the Botanic Garden of the Society of Apothecaries at Chelsea, in succession to ROBERT FORTUNE, and here he resided until his death. It is but a short time since we published an illustrated account of this garden (see *Gardeners' Chronicle*, vol. xxvi., p. 336), and gave a brief account of its chequered history. The duties of this office were comparatively light, and afforded opportunity for MOORE to engage in other occupations, notably in the study of Ferns. It is probable that he is best known to the public at large by his numerous publications on Ferns, British and foreign. His labours in this department stimulated the growing taste for their cultivation, and were marked by infinite care and patience, so that his contributions to the history of Ferns will long possess very great value. It is however to be regretted that his very useful *Index Filicum* was never completed. But Ferns by no means monopolised MOORE's attention; on the contrary, there were few men, perhaps none, who had a more thorough acquaintance with garden plants, nor was this knowledge confined to their botanical aspect; he was an ardent florist, versed in all the minutiæ of the florists' art, and in full sympathy with their aims.

Although his own work as a practical cultivator was latterly necessarily limited by the circumstances under which he was placed, few men were more thoroughly versed in the art, and, as a consequence, MOORE's services were secured regularly for many years as a judge, not only of his own specialties of florists' flowers and Ferns, but also of all descriptions of plants and fruits. The wide extent of his knowledge, his impartiality, and the correctness of his judgment, gave great value to his decisions, and his writings on the subject are accepted as canonical. In the organisation and management of flower shows of all descriptions MOORE was especially well versed. The great success of the International of 1866 was no doubt in great measure attributable to his invaluable services as one of the Secretaries. At this time the work he effected was little other than prodigious, but all was done quietly, without fuss, and apparently without effort. For many years he was either Secretary to the Floral Committee, or Floral Director of the Royal Horticultural Society, in which capacity he took a share in the management of the garden at Chiswick. As for the minor shows and special societies, MOORE was for some years the mainspring of most of them. If work was to be done, if a schedule was to be framed, a testimonial to be raised, a new society started, MOORE was the man who did the lion's share of the work, usually without thought of fee or reward, but simply from genuine love of horticulture, and a desire to be useful, and hence his nomination as a Trustee of the Lindley Library, of the Veitch Memorial, and other similar offices.

For several years, Mr. MOORE was connected with the editorial department of this Journal, first as the assistant of Dr. LINDLEY, and later as a colleague of the present Editor. This appointment brought him into relation with gardeners and botanists of all degrees, and gave him a grasp of horticultural knowledge and requirements beyond what falls to the share of most men. Of his services to this journal we cannot speak too highly, nor can we over-estimate the value of his loyal co-operation and support as a friend and colleague. For many years the Editors were acting conjointly, but always in perfect harmony, and this was the case also in other matters where the two men were jointly employed, as in the preparation of the *Treasury of Botany* and of the *Epitome of Gardening*, in both of which, however, MOORE took much the larger part. And this leads us to revert to his literary activity. We have said enough already to show what a life of industry he led, but we have not mentioned his early treatise on the cultivation of the Cucumber, published in 1844, nor his services as Editor at one time or another of the *Gardeners' Magazine of Botany*, of the *Floral Magazine*, and of the *Florist and Pomologist*, the last-named only recently discontinued. Besides these he edited the revised edition of THOMPSON's *Gardeners' Assistant*, contributed jointly with the present writer the article "Horticulture" to the *Encyclopædia Britannica*, and which was afterwards expanded into the *Epitome of Gardening*. To the last he was asssociated with Mr. WARNER and Mr. B. S. WILLIAMS in the editing of the *Orchid Album*, and it is only last week that we had to chronicle Mr. MOORE's services to the National Dahlia Show at the Crystal Palace. So that it may well be said of him that though, of late, owing to impaired health, he has withdrawn to some extent from public labours, he nevertheless died in harness.

Of all the successors of PHILIP MILLER in the direction of the old Chelsea Botanic Garden, none had caught his spirit so successfully, nor rivalled his labours so effectually. We believe that our friend would have felt this as the greatest compliment that could have been paid to him as a gardener-botanist, and it is one that on public grounds it is but just to make.

In spite of the unfavourable weather on Wednesday last, a representative gathering of his old friends stood beside his tomb in the Brompton Cemetery to testify by their presence their sympathy with the survivors, their grateful appreciation of his labours, and their sense of his value as a friend and a colleague.

—— THE INTERNATIONAL OF 1866.—The death of Mr. THOMAS MOORE recalls the Great International Horticultural Exhibition of 1866, and the names of the members of the Executive Committee who carried out that stupendous show. Alas! the largest number of them have gone over to the majority. These include Sir C. W. Dilke, Bart., Chairman; Mr. J. J. Blandy, Vice-Chairman; Dr. Seemann, for some time the Secretary to the Botanical Congress; and Messrs. James Veitch, Charles Lee, Charles Turner, John Standish, John Fleming, John Gibson, Thomas Osborn, Charles Edmonds, Robert Fortune, and Thomas Moore. Of those that survive there are Sir D. Cooper, Bart., Treasurer; Dr. Masters, Botanical Congress Secretary, and Editor of the Report of the Proceedings; Dr. Hogg, General Secretary; Professor Bentley, and Messrs. William Paul, John Lee, B. S. Williams, William Bull, Harry G. Veitch, Edward Easton, and Richard Dean, Assistant Secretary, making twenty-four in all; and of the long row of horticulturists who appeared as exhibitors or acted as judges, how many have passed away in twenty years!

—— "THE ROSARIANS' YEAR BOOK."—This "annual" bids fair to be perpetual—which is as it should be, for no annual Rose is known to us while perpetuals are perpetually increasing. It opens with a sympathetic account of the labours of Mr. GEORGE PRINCE, "the Prince of Teas," and one who rendered so great service by his reintroduction of the Brier seedlings as stocks. When one considers that Roses budded on this stock have a ready-made root-system of a far superior quality, and adapted to tap both the superficial and the deep layers of soil, whereas the root-system of the common Brier as torn from the hedge, or even of the Brier cutting, is relatively scanty and chiefly horizontal, there is not much to be wondered at in the result. Mr. SMITH discourses on the Orange Fungus, but his account of the life-history of the creature is not very encouraging, or rather it goes to show that the enemy must be circumvented in some way rather than confronted. Other writers have their say on the same subject. Then comes a summary of the events of the year. The Editor prophesies the disuse of the Manetti as a stock, and it certainly makes its appearance where it is not wanted. Mr. GIRDLESTONE discourses pleasantly of single Roses, and we trust that his advocacy will be successful. Mr. MAWLEY, as usual, contributes an

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GARDEN FRONT, COOMBE WARREN.

article of permant value on the weather of the past Rose year as noted at Berkhamsted.

—— HORTICULTURAL CLUB. — The following circular has been issued:—"The committee of the Horticultural Club, while congratulating the members on the very successful season of 1885—86, wish at the same time to impress upon them the necessity of endeavouring to increase their numbers so as to make it more effective still. They desire to make it known that it is not merely a social club where they can have all the advantages of such institutes, but also a centre for Horticulture. They are enabled, as in the case of the National Rose Society, to offer a place of meeting to societies connected with Horticulture. They have also, during the last season, carried out a series of discussions at their monthly meetings, of which the following is a list, and as will be seen that both from the position of those who have read the papers (most of which were afterwards published in the horticultural journals), and from the subjects themselves, they were of unusual interest. "On the Germination of Seed," by Professor M. Foster; "Culture of Grapes," Mr. H. Balderson; "Town Gardens," Dr. Maxwell T. Masters; "Cape Bulbs," Mr. J. G. Baker (Kew); "Hyacinths," Mr. J. Polman Möoy (Haarlem); "Preservation of our Native Flora," Mr. Shirley Hibberd; "Daffodils," Rev. C. Wolley Dod; "Bog Gardens," Mr. Geo. Paul; "Variation," especially in relation to Ferns, Mr. C. T. Druery. It also enables English horticulturists to show that hospitality to foreigners which is so graciously afforded them abroad as visitors: they may point to the very successful dinner offered to the Dutch bulb growers last season as a proof of this. The annual excursions (to which ladies are invited) give the members an opportunity of seeing some of the most noted gardens in the home counties, and have been sources of great pleasure and interest to all who have joined them." The Rev. H. H. D'Ombrain, 1, Henrietta Street, Covent Garden, is the Secretary.

—— "PURDON'S IRISH FARMERS' AND GARDENERS' ALMANAC, 1887." — Farmers and gardeners in Ireland will find this publication of much service to them, as it contains a variety of information. The Rothamsted experiments have several pages devoted to them, and there are two extensive Calendars of Operations, one for each class of workers for whom the Almanac is intended. Other matter comprises Irish fairs for 1887, agricultural statistics of the country for 1886, prices of Irish agricultural produce from 1840 to 1886, information about manures, measurements, &c. The book is published at the *Farmers' Gazette* Office, 23, Bachelor's Walk, Dublin.

THE LATE THOMAS MOORE, F.L.S. (SEE P. 48.)

—— **A Parallel.**—In our last issue we had occasion to note the parallelism between the weather in January, 1841, when our first number saw the light, and that in this present year of grace, when we commence our third series. On January 3, 1841, a storm was recorded; on the night of the same day in 1887 a heavy fall of snow, with some wind, occurred in the neighbourhood of London, as if to complete the parallel. Though the snowfall was heavy, yet it will probably not be so destructive as that of December 26.

—— **Clivia and Imantophyllum.** — Most growers know the slender tubular curved flowers of the old Clivia, and the very different looking funnel-shaped flowers of Imantophyllum, of which so many fine varieties are now grown in Belgium and elsewhere, and they are so handsome that it is a wonder they are not more grown. Mr. Bentham (*Gen. Plant.*, iii., 729) combines the two genera under the old name Clivia, and that this is correct is shown by the fact that some of the seedling varieties—even those of the best shapes—revert to the original Clivia type. By the way, why is this genus written Clivia? It may be more classical, but then it does away with the appropriateness of the dedication.

—— **Greenhouse Rhododendrons.**—A few of these are still to be found in bloom in Messrs. Veitch's Nurseries. Diadem, a variety with large tubular flat-limbed flowers of an orange-scarlet colour, is especially noticeable. By the way, how unlike Rhododendrons some of the double-flowered varieties of this section, such as the forms of the so-called R. balsaminiflorum. Seeing some isolated flowers in a dish they looked like Gardenias. Others, to whom the separate flowers were shown, variously guessed them to be Tuberoses, Roses, Gardenias, Narcissus, Orchids, and Clematis. The resemblance to Tuberoses is close.

—— **Mr. Bull's Orchids.**—The recent fogs have severely punished the flowers, but there are still to be seen some fine Lælias of the anceps type, as well as L. bella, a few Odontoglots, including Insleayi splendens, and a fine form of Rossi majus; Cypripediums, such as Spicerianum, Leeanum superbum, insigne Maulei, &c. The promise for the coming season in the way of Cattleyas and Lælias is very hopeful, the plants being in fine condition and with abundance of sheaths showing. How does Mr. Bull manage to get that black-green colour into the leaves of his sesquipedalian Angræcs?

—— **Brassavola Digbyana.**—Going through Messrs. Veitch's Orchid-house lately, Mr. Seden drew attention to the singular seed-pod of this plant, which outvies in singularity any that we figured some time since. After flowering, the top of the ovary becomes prolonged into a stoutish cylindrical neck, 3 or 4 inches long, with the column at the top, and the ovoid or oblong ribbed ovary below. A slight elongation is common in many Orchids, but here was a new production, as thick and as long as an ordinary Cedar pencil.

—— **Messrs. James Carter & Co.'s Special Prizes.**—Attention is called to the valuable cash prizes offered this year to such of their customers as carry off the greatest number of distinct awards at any show at which they may compete, the prizes amounting in the aggregate to £18. It may further be interesting to give a list of the winners of 1886, as follows:—

First Prize.—£10 10*s.*, for seventy-six prizes: gained by Mr. J. McLean, Head Gardener to E. H. T. Crawford, Esq., Auchenames, West Kilbride, Ayr, N.B.

Second Prize.—£5 5*s.*, for sixty-nine prizes: gained by Mr. W. Chattenburgh, Head Gardener to Colonel Rous, Worstead House, Norwich.

Third Prize.—£3 3*s.*, for forty-five prizes: gained by Mr. J. Davis, Head Gardener to Rev. H. Arkwright, Bodenham Vicarage, Leominster.

Fourth Prize.—£2 2*s.*, for forty-four prizes: gained by Mr. T. Foggin, Head Gardener to Mrs. Wilson, Tapton Hall, Sheffield.

Fifth Prize.—£1 1*s.*, for thirty-seven prizes: gained by Mr. H. L. Sell, Windsor Street, Luton.

—— **Manners and Customs of Orchids.**—That some Orchid flowers, instead of withering, become fleshy, and in other cases green after fertilisation, is well known to Orchid growers. In Messrs. Veitch's nursery Phalænopsis violacea at the present time is showing these enlarged green perianth segments. Mr. Seden tells us that this section of Phalænopsis is characterised by this peculiarity, while in the amabilis section the segments wither after fertilisation. A reasonable explanation of these peculiarities would be found in the suggestion that an additional supply of nourishment was required during the development of the ovules. This nourishment would be stored after fertilisation in the fleshy flowers, say, of Renanthera, while in Phalænopsis violacea the nourishment would be manufactured by the green perianth segments as by so many leaves. It has been recently shown that in some Orchids at the time of impregnation the ovules do not exist, or only in a rudimentary condition. The first effect of the pollen in such cases is to cause the ovary to swell, the pollen-tubes meanwhile slowly penetrate the column, and reach the interior of the ovary, and when the ovules are sufficiently developed their fertilisation is effected. It is evident we want to know much more of the life-history of Orchids before we can understand their diverse peculiarities.

—— **The Surveyors' Institution.**—The next meeting will be held on Monday, January 10, when the adjourned discussion on the paper read by Mr. E. Ryde (Past President) at the last meeting, entitled "The Tithe Question, with Suggestions for the Redemption of the Rent-Charge," and on the paper entitled "Extraordinary Tithe and the Redemption Act of 1886," read by Mr. J. W. Willis Bund (Associate) at the meeting of November 22, will be resumed. The chair to be taken at 8 o'clock.

—— **Royal Microscopical Society.**—At the next meeting of this Society, to be held on Wednesday, January 12, at 8 o'clock precisely, the following papers will be read:—Mr. A. W. Bennett, "Fresh-water Algæ (including Chlorophyllaceous Protophyta) of North Cornwall, with descriptions of six new species;" Mr. J. Mayall, jun., "A Visit to Jena."

—— **Roads Improvement Association.**—Under this title an association, having its offices at 57, Basinghall Street, E.C., has been formed for the purpose of "taking up generally the question of roads in the whole kingdom." The originators of the scheme are of the opinion that surveyors, &c., are not always so attentive to their professed work as they should be, or are perhaps "ignorant of the first principles of scientific road construction and maintenance." Perhaps they are right; at all events bad roads are not uncommon, and this new association will have plenty of work before it. We wish it success. A pamphlet on the subject, written by Mr. Wheeler, has been published by the Association.

—— **Tobacco Culture.**—We are reminded by Mr. Worthington Smith (prophet of evil!) that it is quite within the bounds of possibility that living Tobacco plants may, in this country, fall a prey to the Potato fungus—Peronospora infestans. It has been recorded in England amongst the Nicotianeæ.

—— **A New Palm.**—Professor Sargent has recently detected a new Palm in Florida, not only new as a species, but sufficiently distinct to constitute a new genus, Dr. Wendland proposing to call the plant provisionally Pseudo-Phœnix Sargentii. The trunk is 10—12 inches in diameter [near the base?], and 20—25 feet in height. The leaves are 4—5 feet long, pinnately divided; pinnæ lanceolate, 12—16 inches long. No flowers, and only immature fruit was found, so that the plant cannot be fully described. At present only six individuals have been found. We extract these particulars from the *Botanical Gazette*, vol. xi., No. 11.

—— **Cocoa-nuts.**—A Cocoa-nut plantation in the West Indies, well established and in full bearing (say at the end of eight years), with sixty trees to the acre, may, says Mr. Morris, in his annual report on the public gardens of Jamaica, be safely assumed to be of the annual value of £10 per acre. The expense of maintaining a Cocoa-nut plantation, when once established, is practically nothing; hence the thousands of acres of land bordering the sea-coast of our West India possessions are capable of immense development.

—— **Iron in the Construction of the American Exhibition Buildings.**—The main building now being constructed on the grounds of the American Exhibition of the Arts, Inventions, Manufactures, Resources, and Products of the United States, at Earl's Court, Kensington, is entirely unique, and will in itself be a most interesting exhibit. The entire framework of the structure is composed of steel rails, such as are used in constructing railways. Two of these bolted back to back, with the T side out, make a very strong and really ornamental column. The only casting required is an angle iron and eyebar, into which the ends of the rails are slipped. This frame will then be covered with plates of glass and sheets of corrugated iron. The advantages are many. For rapidity of construction it is unequalled, as an acre a week can be easily put up, and it has also the advantage of economy, no skilled labour being required to put it up or take it down, and when finished with the material is as good and marketable as when first purchased. This invention, in fact, solves the problem of large temporary structures which can be quickly and cheaply built.

—— **National Rose Society.**—A meeting of the General Committee will be held at 1, Henrietta Street, Covent Garden, on Tuesday, January 11, at 3 o'clock, for the purpose of electing the Executive Committee for the ensuing year.

—— **The "Garden Oracle."**—This useful little book appears for the twenty-ninth time—a pretty good indication of its utility. In addition to the usual calendarial matter, there are garden directions for each month of the year, lists of new plants, fruits and vegetables, hints to purchasers in the way of selection, a history of the Auricula, with lists of the principal varieties, and various odds and ends. The book is published at the office of the *Gardeners' Magazine*.

—— **American Agricultural Stations.**—It is proposed to extend these stations in the different States of the Union, and to subsidise them from the national exchequer. The following details are given in the *American Horticulturist* in connection with this matter:—

"Objects of the Stations.

"It shall be the object and duty of said experiment stations to conduct original researches or verify experiments on the physiology of plants and animals; the diseases to which they are severally subject, with the remedies for the same; the chemical composition of useful plants at their different stages of growth; the comparative advantages of rotative cropping as pursued under a varying series of crops; the capacity of new plants or trees for acclimation within the isothermal limits represented by the climate of the several stations and their vicinity; the analysis of soils and waters; the chemical composition of manures, natural or artificial, with experiments designed to test their comparative effects on crops of different kinds; the adaptation and value of grasses and forage plants; the composition and digestibility of the different kinds of food for domestic animals; the scientific and economic questions involved in the production of butter and cheese, and such other

researches or experiments bearing directly on the agricultural industry of the United States as may in each case be deemed advisable, having due regard to the varyin g conditions and needs of the respective States andterritories.

"UNIFORMITY OF WORK.

"That in order to secure, as far as practicable, uniformity of methods and results in the work of said stations, it shall be the duty of the United States Commissioner of Agriculture to determine annually a standard of valuation of the ingredients of commercial fertilisers, upon which the analysis of such fertilisers, as far as made by said stations, shall be based: to furnish forms, as far as practicable, for the tabulations of results of investigation or experiments; to indicate, from time to time, such lines of inquiry as to him shall seem most important; and, in general, to furnish such advice and assistance as will best promote the purposes of this Act."

Provision is also made for the publication and circulation of annual reports.

—— SUGAR AND RAINFALL.—This question of rainfall is one of great importance to the wellbeing of Jamaica, as appears from a passage in the annual report of the public gardens for 1885; and indeed the prosperity of its planting industries is dependent so directly and entirely upon the maintenance of a high rainfall that Mr. MAXWELL HALL has been able to form a comparison (stated in the "Jamaica Rainfall" published in the supplement to the *Jamaica Gazette*, October 4, 1884), between so many inches of rain per annum, and so many casks of sugar per acre. These are indicated by the returns of several years as follows:—1559 casks per acre with 79 inches (preceding) rainfall, and 1441 casks per acre with 56 inches (preceding) rainfall, so that, as he says, the difference due to a larger and smaller island rainfall is on an average nearly one-tenth of the island export (sugar) crop. This one-tenth of export crop (for sugar and rum) represents a value of nearly £100,000.

—— A NURSERYMAN AS A MAGISTRATE.—At the Quarter Sessions held in Carlisle on Wednesday last Mr. JAMES WATT, of the firm of LITTLE & BALLANTYNE, nurserymen and seedsmen, was elevated to the Magisterial Bench, and took the oath as a Justice of the Peace for the city of Carlisle.

—— SCOTTISH HORTICULTURAL ASSOCIATION.—A meeting of this Association was held on the 4th inst. at the Rooms, 5, St. Andrew's Square, Edinburgh, the President, Mr. ALEX. MILNE, being in the chair. After the ordinary business of the meeting was despatched two papers were read—one by Mr. GROSSART, Oswald Road, Edinburgh, on the genus Odontoglossum; and another by Mr. A. D. McKENZIE, of the firm of McKENZIE & MONCUR, horticultural builders, Edinburgh, on the present position of horticultural building.

—— PUBLICATIONS RECEIVED. — *Agricultural College of Michigan, Botanical Department, Bulletin No.* 21: *Lessons on Growing Forest Trees.—Royal Institution of Great Britain: Suspended Crystallisation*: by Professor J. M. THOMSON, F.C.S.; and *Capillary Attraction*: by Sir W. THOMSON, D.C.L., F.R.S., &c.—*History and Biology of Pear Blight.* By J. C. ARTHUR.—*The Rosarians' Year Book*, 1887. Edited by Rev. H. H. D'OMBRAIN. (London: BEMROSE & SONS, 23, Old Bailey.)

HYACINTHUS CANDICANS.—What a noble, hardy, bulbous plant this is! producing fine spikes of flowers 3 to 4 feet in length. The blooms are pure white, of a large size, bell-shaped flowers. For conservatory or greenhouse decoration it is indispensable, showing with excellent effect when placed amongst other plants that are of round-headed or flat form, lhe tall flower-spikes giving just the required contrast of form. Five shillings, the usual price charged, is well expended in the purchase of a dozen bulbs, to insure as many specimens anon.

NOTICES OF BOOKS.

HANDBUCH DER PFLANZENKRANKHEITEN. (Handbook of the Diseases of Plants). Von Dr. Paul Sorauer. Second edition, vol. ii.: *Die Parasitären Krankheiten.* (Paul Parey, Berlin, 1886.)

A review of the first volume of this book, dealing with the non-parasitic diseases of plants, appeared in these pages on July 10, and the prompt publication of the second volume, containing an account of the parasite diseases, calls now for the completion of the notice.

It is too commonly thought that the state of parasitism producing disease is one entirely separated from the normal vegetative state of green plants. But when the matter is considered in all its states and bearings, there will be found cases of partial parasitism and of occasional parasitism which obviously link strict parasitism with ordinary vegetation. For example, Rhinanthus, Melampyrum, Pedicularis, Euphrasia, and Striga all contain chlorophyll and possess true roots on which suckers or haustoria are developed. The Santalum (S. album is the Sandal-wood tree) is in the same condition; and the interesting fact has been observed; that this plant, when it has once accustomed to depend on its haustorial apparatus, suffers and leads a sickly life when the supply has been stopped by the destruction of the host: while other individuals of the same species attain a lasting normal development without the aid of a host at all. In another way the Mistleto may be taken to be a partial parasite obtaining from a necessary host in the main only water and mineral substances in solution to be prepared for plant food in the leathery green leaves. Most parasitic plant diseases, however, are caused by fungi, and the parasitic fungi are connected with the saprophytic or putrefactive fungi. Now a parasitic fungus is either a strict or obligatory parasite like the rust fungi, for example, or it is only an occasional or facultative parasite. In the former case the parasite is always a parasite attacking sound healthy plants, and in the latter the fungus is parasitic and saprophytic both. A good example of this is Pythium de Baryanum, which lives equally well on dead plant or animal substance, and also on sound living bodies of plants. As a parasite it attacks and destroys most easily watery young seedlings (*e.g.*, of Crucifers). Grown land plants, however it attacks with greater difficulty, and more locally; but if these are placed under water they fall an easy prey.

Then there are a number of parasites which are only to be found on the wounded surfaces of vegetation—for instance, some of the fungi which attack the trunks of trees. Some of these cannot penetrate the uninjured cortex, but are dependent on a way being opened to them through wounds.

Now it must be remembered that a parasite life not only affects the host, but carries with it a degraded state of the organisation of the parasite itself. This is very apparent and strongly marked in the particular case of the flowering parasites when these are compared with their nearest normally vegetating allies, and in a general way if fungi, both parasites and saprophytes, are compared with their nearest allies, the Algæ.

The effect upon fungi of a more normal mode of nutrition is exemplified by the lichen-fungi. It is common to describe the fungal part of a lichen as parasitic on the algal part; but, in a general way, this is true only in the sense that the colourless cells of a plant are parasitic on the green ones, that is, the fungal portion, it may be inferred, is nourished by the exosmose of starch and the like from the algal cells, and reciprocally the algal cells may be regarded as benefiting by the endosmose of the waste products of the fungal protoplasm. Here, again, though the fungal portion of the thallus retains the marks of affinity with other fungi, it is yet so modified by this particular mode of life as to be probably unfitted in nearly every case for parasitic and saprophyhtic life of the kinds described. An inability to grasp this aspect of the case very probably accounts for much of the opposition to Schwendener's discovery.

Such is the nature of parasites, the subject of this volume of Dr. Sorauer's work. The result of his labour is a book of 456 pages, which, when added to the 920 of the previous volume, together form an imposing treatment of this important subject. Compared with the previous edition, it shows the advance of recent years in a very striking way, even allowing for the fact noticed in the review of the first volume that this is a much better book for its time than the first edition was. Dr. Sorauer treats his subject not only comprehensively but, it may be said, here and there somewhat too trustfully of the observations recorded by some workers. However, this could hardly be avoided in some of the cases in the interest of his subject, and having regard to the value of the book as one for reference. The flowering parasites are treated of shortly in comparison with the fungi, and on economic grounds of course they are of less importance than the fungi. Nevertheless the author cannot be blamed for giving inadequate detail anywhere, and the section mentioned is dwarfed by the others rather than insufficient in itself. In another edition a special description should certainly be given to each plate. The book is altogether one to be thankful for, since it brings up to date the vast and scattered literature of a subject growing daily in bulk and moreover in practical importance. No serious worker at plant-diseases can afford to neglect it, and its great value undoubtedly lies in its being a well ordered storehouse of facts. It is certainly not the author's blame if among these there is a sprinkling of fancies. Though somewhat credulous, it may be—and on this we do not venture to insist—it is not in his power, it is in no one's power, to thoroughly weed the vast literature dealt with; and, as has been said, this may after all be a fault in the right direction.

FORESTRY.

ERECTING WOODEN PALINGS.

THE question is sometimes asked, why so many wooden palings are erected all over the country, seeing they are of so perishable a nature?—and the counter question is also as frequently asked, why there are not many more of them erected, and the work done to better purpose than it commonly is? Several very sound reasons may be given for the general adoption of wooden palings, and also for their disparagement. In the first place, on most landed estates wood is conveniently at hand for the purpose, and can be transformed into a fence in the very shortest time possible, while stone, iron, or other description of fence would be out of date before it could be available for the purpose. It is no uncommon thing for a tree to be growing in the plantation in the morning and be in the position of a fence in the evening. Second, temporary fences are often urgently required by those who cannot afford more permanent and substantial ones than those of wood. Third, wooden palings can be put up to answer the purpose required, by almost any unskilled person. Fourth, there are few places where fences are required but that the work may be done with wood in some way or other. A fifth reason also is that of making use of a product which, if not used for fencing purposes, would be entirely lost to the proprietor. Young thinnings which would not pay to convert into other purposes, such as pit props (now that they are so cheap), would be entirely lost to the proprietor if not thus used for estate fencing. These are among the most common reasons for erecting so many wooden palings. And now a few remarks as to why many more are not erected, and also why the work is not better and more tastefully done. One reason why wooden fences are supplanted by iron, stone, &c., is because the latter are more durable and permanent. Second, because iron and stone afford greater strength and resisting power where great resistance and strain are

to be provided against. Third, because the appearance of stone walls, dykes, iron and wire fences is generally more appreciated as an object of taste than wooden palings are. The reasons and arguments for and against wooden palings are neither new, fanciful, nor absurd, but based upon the old common-sense lines of adaptation and propriety, namely, each kind and description of fence in its own place and for its own specific purpose is the best.

In forming a Hop-garden, for example, where neither hedge nor tree exists, a shelter fence of poles may be erected in a day, which would not cost many shillings, and would save the Hop-grower many pounds, and stand secure till a Poplar or Willow hedge would grow up and take its place. Again, in a pasture field, where the farm is under a rotation of cropping and the grazing transferred annually from one field to another, under such circumstances how cheap and simple it is to erect a composite wooden shelter for stock in the field thus grazed, and transfer it to other fields, as the rotation goes on. Nor are such shelter fences alone useful in cold weather but they are almost equally beneficial on hot days in summer, especially under the tormenting influence of insects great and small which harass and injure the animals. The question of permanency, however, is so paramount that unless most kinds of wooden fences will endure a given number of years, they are of all others the most expensive; for although the wood in the plantation costs almost nothing, yet if it does not remain strong and endure a certain length of time, it will not pay for the nails and labour used in erecting it. That soft wood, as a fence can be made to last three or four times longer by means of creosoting than it would otherwise do, is now a well established fact. The disagreeable smell, however, and everything connected with the process of creosoting, is so offensive, that it is highly desirable to find some other preservative as a substitute for it. A compound of lime, salt, potash, and sand, boiled and made into a paste of the consistency of cream, not only adheres to the wood (especially as it comes from the saw) but preserves it in a remarkable manner for all outside purpose. Oils and grease of every kind have a preservative influence upon wood, and would be used if only cheap enough. I have of late, however, made what I trust may prove a successful discovery of a new wood preservative in that of alum. It is melted in water and the wood either steeped in it; or the liquid may be applied to the fence or other wooden structure in a manner similar to that of using oil paint. Not having sufficiently tested the process, however, so as to state confidently the relative advantages of it, more need not here be said in the meantime, beyond a friendly advice to give it a trial. *C. Y. Michie, Cullen House.*

THE ROCK GARDEN.

The rock garden at Hewell Grange is in a sheltered and very much protected position, being about 30 feet lower than the other parts of the pleasure ground, it having a high bank of natural sandstone rock, which is clothed with Ivies, Periwinkle, Ferns, and Saxifrage. On other sides are planted Rhododendrons, Laurels, intermixed with trees and shrubs of a deciduous character, so that the occupants of the rockery are sheltered from high winds, from whichever quarter they may blow; and even in December, after all the leaves and decaying vegetation are cleaned up and the place made tidy, there is much to interest the beholder, as all the moss-covered stones are now of a bright green, and many of the evergreen Ferns have become objects of beauty, such as Lygodium mexicanum, Scolopendriums in variety, Aspidium Lonchites, A. lobatum, A. Filix-mas cristata, and others. Erica mediterranea, of which there are large masses, is almost ready to open its flowers; E. multiflora alba is in full bloom, but spoilt with the recent frosts. The ledges and steps and other points about this garden are getting beautifully coated with moss, and seedling forms of Ferns of numerous species are found everywhere where a crevice with a little soil is available. In open winter weather, when snow has departed, the Ferns and alpines of an evergreen and enduring foliage will reappear, and will afford much pleasure to the lover of hardy plants. *E. Ward.*

MARKET PLANTS.

CHRYSANTHEMUM FRUTESCENS.

Marguerites, or Paris Daisies as they are usually called, are among the plants that have become popular within the last few years; yet when first brought forward, many of the market growers seemed to think they were too much like one of our common wild plant, Chrysanthemum leucanthemum, to be worthy of cultivation; however, in spite of all prejudice, they have proved to be almost invaluable for general decorative purposes, and are now grown very extensively, both as pot plants and for giving a supply of cut bloom. They were also used extensively for bedding-out, window boxes, &c. Those who first recognised their value, and grew them in large quantities, must have found them very profitable, for, until the last year or so, good plants in 48-size pots sold readily at from 18*s*. to 30*s*. per dozen. Last season, however, there was plenty of evidence that market growers had recognised their merits, immense quantities being sent into the market, their value being somewhat reduced in consequence; however, a fairly remunerative price was generally obtained, well furnished plants in 48-size pots selling at from 9*s*. to 12*s*. per dozen, and plants suitable for window boxes, &c., at from 4*s*. to 6*s*. per dozen. The value of cut bloom varies considerably; a fair average price for good clean blooms being from 4*s*. to 6*s*. per dozen bunches. A large supply of the yellow variety is obtained from France.

Varieties.

White.—C. f. maximum.—This is the best white variety for general market work; the plant is of a free branching habit, with dark green foliage; the flowers are large, and have rather large stalks, bringing them well above the foliage; either as a pot-plant, or for cutting purposes, it is most valuable.

C. f. Halleri majus, if not identical with the above, very closely resembles it.

C. f. Halleri.—Dwarf and compact in habit, with rather small, bright green leaves; flowers of medium size.

C. f. pinnatum.—A very distinct variety, with very finely-cut leaves, which are of a pale glaucous green; the flowers are small, but are produced very freely, and the plant is of a compact habit of growth.

C. f. Alice Crousse.—Very large flowers; foliage pale green; a good variety for early spring work, being more compact in habit than maximum, and not so liable to run up when grown where there is a little warmth.

Besides the above, I have met with two distinct forms grown as C. frutescens, without any further distinction; one has glaucous foliage, and is of a compact habit, with medium-size flowers; the other has deeper green foliage, and is of a more straggling habit of growth.

Yellow.—C. f. Etoile d'Or.—This is the most popular yellow variety, and is too well known to need any description. Although this variety had been grown in France for some years previous, it was not until the spring of 1880 that it became much known here.

C. f. Comte de Chambord is another good variety; the flowers are not quite so large as the above, but the plant is of a free habit of growth.

Culture.

Few plants are so easily managed as Marguerites, especially the white varieties; but like all other subjects, to do them thoroughly well, and to keep up a regular succession of good marketable plants, they require some care and forethought. To begin with, plants that are required for early spring work should be propagated in the autumn; and to secure good clean cuttings a few old plants should be cut back some time previous. Cuttings taken from plants that are starting into fresh growth are much better than those taken from flowering plants. The cuttings strike freely in a close frame, where there is a little bottom-heat. They should be potted off as soon as they are sufficiently rooted; by the time they have got a good hold of the new soil they will require stopping, and the tops will give another batch of cuttings for succession. In growing plants on, the most essential points are to have them in a light airy position, to give the plants plenty of room, and to avoid artificial heat, except when necessary to keep out frost. After the plants are potted into their flowering pots, the shoots should be pegged, or tied down; if this is done when the plants have got three or four shoots, they will not require any further stopping, as they will branch out naturally, that is, provided the plants are not crowded up. For autumn and winter flowering, cut-back plants succeed best. Any straggling plants that have been left from the spring batch are cut back some time in July, and kept out-of-doors as long as it is safe to do so, but as the first frost will cut them up, they should be in a position where they can be protected in case of frost coming on suddenly. For winter flowering, the plants should be potted in rather poor soil, otherwise they will go too much into growth, and will not flower freely. As the yellow variety, Etoile d'Or, does not break out freely from the old wood, only the flowering stems should be cut to induce them to break out into fresh growth, and to secure good plants they should be grown on as freely as possible, and the tops of young plants that have not yet flowered will make the best cuttings.

With regard to soil, watering, &c., it is not necessary to say much, as any ordinary garden soil will suit them, and with ordinary care no damage can be done as far as watering is concerned. I may add, however, that plants flowering freely may be liberally supplied with manure.

Insects.

Marguerites are subject to greenfly, and also a little maggot similar to the Celery grub (see fig. 14, p. 57), which is very destructive when once it makes its appearance. The only way to keep this down is to pick off the leaves that are affected, and burn them; or frequent syringing with clear soot-water willk eep off the fly that breeds them. *A. Hemsley.*

PEARS.

The following remarks on Pears are taken from a paper read by Mr. T. F. Rivers, at a meeting of the Horticultural Club on Tuesday, December, 1886. After giving a short historical sketch of the Pear, Mr. Rivers proceeded to say that:—

"Standard Pears are utterly unsuited for small gardens, and should be grown in orchards only. Those who are blessed with old and decrepit standard trees may renew their vigorous growth by heading them down. In three years young, healthy, and fruitful branches will replace the old and useless wood of generations. A difference is sometimes observed in the conduct of trees on the Pear stock. Some will be more fruitful and bear larger fruit than other trees of the same sort and age. This arises from the influence of the stock upon the graft. All Pear stocks are raised from seed, and great variety of course exists. The difference sometimes seen in the produce of trees growing side by side is often so great as to cause doubts of the identity of the fruit.

"The seedling Pear stocks imported from France are raised from the pips of perry Pears, and of these two sorts are distinguished, one with smooth bright leaves, from the district of Le Mans; and the other, woolly or Sage-leaved, from the province of Anjou. I believe the pips of the wild or forest Pear are employed in Germany for raising stocks.

"Garden trees on the Pear stock should be either

trained as espaliers, wall trees, or pyramids. Root-pruning will cause unfruitful trees to bear, and those who have them will do well to practise it. The Pear stock is not fastidious about soil. My own experience of the Quince stock convinces me that it is the most useful stock for all styles of garden training; it is adapted for espaliers, pyramids, bushes, and cordons. Cordon training, although known and practised in England for some time, has been brought more prominently into fashion during the last thirty years. It is perhaps the most simple and productive of all sorts of training. An Oak fence 7 feet high, planted with diagonal trees 18 inches apart, in four years will produce a large quantity of fruit; and a wall from 12 to 15 feet high in five to six years will produce like results. I have found that pruning twice a year (in June and October) is sufficient to keep the trees in fruitful order. In the June pruning the young shoots must be stopped at the fifth or sixth leaf, and in October every spur must be pruned as close to the main stem as possible, avoiding any injury to the fruit-buds, which are, of course, easily detected; diagonal cordons may also be trained to wire trellises, and treated in the same fashion—this is a very interesting and ornamental style. The single horizontal cordons and the double horizontal cordons, trained at 18 inches from the ground, form a neat and fruitful edging to side walks. The five-branched vertical cordon has five upright shoots springing from a common horizontal base. These may be planted 4 feet apart. The horizontal cordon has the branches trained at regular intervals from a main vertical stem: this form is admirably adapted for espaliers by garden walks, and is very tractable and pleasant to manage. Vertical cordons planted in the open ground 4 feet apart will give large crops of fruit. Two forms of cordon training seem to me to be very unpractical—*i.e.*, vase-cordon and the plan of training over an arched trellis; the former is more trouble to manage than a bush tree and gives no better results, and the latter is contrary to common sense, part of the tree being grown in the shade. All cordons require the same system of pruning. Pyramid and bush trees on the Quince stock are charming garden trees; the pruning is somewhat different to that practised for cordon trees—the side shoots should be pruned in June and the leading shoot untouched until October, superfluous shoots being occasionally removed during the summer to admit the sun, the unpruned leading shoot must be shortened back in October.

"Garden trees require root management, and a modified system of root-pruning should be practised with all. A circular trench about 3 feet from the stem of the tree should be dug annually if the room for the tree is restricted; in the autumn the soil in this trench should be refreshed with manure and fresh soil, and a surface dressing of artificial manure applied during the spring. For the latter purpose soot, superphosphate of lime and guano are probably the most useful. The trench and the manure will render the planter independent of the soil. If Pear growing is to be made a certainty, cultivation under glass must be adopted. A glass house is of course a prime necessity; it may be as plain as possible for the purposes of protection. During the spring the trees can be packed closely, for in the early period of growth they do not require much space; about the end of May, or when all danger of frost is past, many of the trees should be put out-of-doors, leaving enough in the house to stand 3 feet from each other. The trees taken out of the house should be plunged in a border prepared for them, and the trees inside sunk in the soil up to the rim of the pot; the sides of the pot should be perforated, but this is not an absolute necessity. The trees should be surface-dressed with manure, and watered with manure-water twice or three times a week; when under glass abundance of air must be given. Culture under glass makes a crop a certainty, and requires no more attention than is given to Melon or Cucumber growing.

"Protection to cordon trees trained about 1 foot from the ground may be given by planks on each side placed on edge supported by short stakes and covered with mats during severe frost. Ground vineries also form very efficient protection, but they are not so cheap as the planks.

"Raising seedling Pears is always interesting from the uncertainty which attends the pursuit. I have raised some hundreds from the best sorts known, which I have crossed in every conceivable fashion. The "Conference" Pear, which gained the suffrages of the committee of the Pear Congress of 1885, came from a baking Pear, the Leon le Clerc de Laval, the pips of which I planted without any special design. All pips intended for seed should be taken from the finest and best developed fruit.

"The sorts of Pears of recent introduction selected by the Pear Congress of 1885 were the following:—

Beurré Giffard	Emile d'Heyst
Clapp's Favourite	Beurré d'Anjou
Summer Beurré d'Aremberg	Marie Benoist
Madame Treyve	Beurré de Jonghe
Beurré Dumont	Rose Crassane
Pitmaston Duchess	Duchesse de Bordeaux
President d'Osmanvile	Olivier de Serres
Madame André Leroy	Nouvelle Fulvie
Conference	L'Inconnue

And for orchards and market gardens:—

Beacon	Marie Louise d'Uccle
Fertility	Durondeau
Souvenir du Congrès	

The improvement in Pears will no doubt continue, and in 1986 amateurs will wonder that we could be contented with fruit so inferior to that which they will enjoy, even as we are no longer satisfied with the fruits which charmed De la Quintinye and his friends."

TAPEINANTHUS HUMILIS.

THIS is a plant originally described by Cavanilles, but of which very little has hitherto been known,

FIG. 13.—TAPEINANTHUS HUMILIS: FLOWERS YELLOW.

Herbert obtaining his information from his predecessors. It is a native of Southern Spain and Tangiers, in the vicinity of which latter place it was recently found, by Mr. Maw, in great abundance, forming sheets of yellow flowers, which are thrown up before the leaves, though the latter soon make their appearance. As will be seen from our illustration (fig. 13), the individual flowers are small, but when seen in masses the effect is described by Mr. Maw as remarkable. The genus differs from Narcissus principally in the presence of six small scales in the throat of the perianth. The name Tapeinanthus indicates the dwarf lowly habit of the flower, from the Greek *tapeinos*, on the ground; and *anthos*, flower.

LITTONIA MODESTA VAR. KEITII.—A beautiful greenhouse bulbous plant, with lanceolate leaves ending in a tendril, and from the uppermost of which proceed bell-shaped, six-parted flowers, each about 1½ inch long and nearly 3 inches in width when expanded. The colour is a rich orange.

HOME CORRESPONDENCE.

CLEANING ORCHARD TREES.—Lichen or moss should always be removed during the leafless state of the trees, as its presence is very undesirable on fruit trees of all sorts. It should be scraped off the trunks and principal branches with a strong hard label or a piece of hoop iron, syringing the smaller branches with a solution of lime. Gooseberry and Currant bushes and dwarf trees may be freed from moss by being dusted over with freshly slaked lime while their stems and branches are quite damp. The presence of large quantities of lichens is frequently an indication of a badly drained soil, but in some places it is occasioned by the general moist condition of the locality. *H. W. Ward.*

THE CARNATION MAGGOT.—I think the maggot alluded to by "R. D.," at p. 22, is not confined to any particular district, nor is it of recent origin. We have been troubled with it here this season, but not to any serious extent. About seven or eight years ago I found the same kind of maggot among the Tree Carnations at Chiswick. Finding that some of the plants were losing their main shoots, I was somewhat puzzled as to the cause, the plants otherwise being very healthy; however, on examination I soon discovered the cause. In cutting through those that were dying away I found the maggots in the stems working their way downwards; on further examination I found others that had only just commenced their work of destruction. The first indication of their presence is that the tips of the youngest leaves in the centre of the shoots are found to be eaten away; and, if looked after, the maggots may be caught before they have penetrated the hearts of the shoots. However, where large quantities are grown it would entail an immense amount of labour, and very irksome labour too, to keep the plants free. I believe that this pest may be kept off to some extent by the frequent use of soot-water. By keeping the plants frequently syringed with soot-water, previous to their coming into flower, green-fly and other insects will be kept off. *A. Hemsley.*

—— This pest has served me much worse than it has Mr. Turner, as reported in your number of January 1. About four years ago, being desirous of growing a collection of Carnations both for cutting purposes and for sale of plants, I added some of the best sorts to such as I had already in stock, consisting mostly of old, well-known varieties. In the autumn (about November) I found the centres of the plants dying out, the layers being more especially attacked in the way your correspondent described. Since that time until last year, feeling determined not to be beaten, I have by purchase still been trying to add to my varieties, hoping by taking off and potting the layers early, and thus removing them from the ground where they had been growing to a cool ash bed, where they might be covered with frames for wintering, that we should be free of the maggot. In the autumn of 1885 I was quite jubilant, having in October as pretty and healthy a lot of plants as any one would wish to see. Early in November, to my dismay, withered leaves in the centres of the young plants (also on the laterals, where the plants had any) began to appear, and on examination the enemy was found in each case buried in the stem. The centres of the plants continued to drop out, until by December there were scarcely any live plants left. Those from which the maggot had been removed, as soon as the mischief was suspected, and before the "collar" was reached, were saved, but such, of course, could not bloom the following year, and there were so few that the stock was practically lost, and what few survived, shared the same fate the next season, so that I have now none left. I have not been able to find the insect depositing the eggs, but I imagine they are laid in the points of the plants about August. I have also looked in vain in writings on the Carnation for definite information on the subject. Strange to say, winter-flowering Carnations, grown within 50 yards of those affected, but not planted out, have remained each year absolutely untouched. Another thing worthy of note is this:—I had, for a year or two before the maggot was found in the Carnation, experienced a difficulty in growing some other species of Dianthus, especially Sweet Williams, and I now conclude the cause to have been the same. During the past two seasons, common white and coloured Pinks, and especially

Mrs. Sinkins, have been attacked in the same way. The beds of white Pinks had every point eaten out of the plants, so that they produced no bloom at all. I have finally ceased to try to propagate either them or border Carnations, but I have some Sweet Williams which looked remarkably well till about October last, and they are now dying off. I intend, when the present snow is gone, to examine these in order to see what effect the severe weather has had on the maggot. *South London.*

Telegraph Poles.—The introduction of iron poles—or rather supports—for telegraph wires, judging by what I saw the other day at Hounslow, is hardly likely to be extended. No doubt telegraph poles of wood create a big trade in trees of a certain suitable kind, and as long as telegraph and telephone wires are carried overhead poles must be employed; but whilst it has been thought that iron offered, if not a cheaper, at least a more enduring material, the effects of the recent snowstorm showed that iron supports, although carrying but two or three light police-service wires, yet snapped off close to the ground literally wholesale—in fact, far more so than did the ordinary wood poles. Possibly the earth had somewhat corroded the iron, but if so, then it only shows the unfitness of the material. It is worthy of note that the Hounslow Local Board insisted upon iron standards being employed, as being more light and graceful than wooden poles are. The danger of having telegraph wires on iron standards by the side of the highway has, in the case of this storm, proved so great that it is hoped until the wires are carried beneath the ground wooden supports will be resorted to. It is evident that telegraph wires must in many localities still be carried overhead, and for that reason it should be the aim of landowners to provide these poles good and in plenty. The matter is one of some considerable moment in the present condition of the landed interest. *A. D.*

Asparagus Forcing.—If Asparagus roots be placed closely together in an ordinary three-light garden frame upon a hotbed made of three parts leaves and one of long stable-dung (the latter being used more to keep the former in position than to produce heat), and then be covered with 4 or 5 inches thick of light mould, and the frame kept close, the "grass" will appear in the course of eight or ten days, when sufficient fresh air should be admitted to prevent its making a weakly growth. The exterior of the frame should be protected by a lining of long dung or litter of some sort or other. *H. W. Ward.*

Heavy Crops of Potatos.—The following letter and the answer elicited from our old correspondent, to whom it was forwarded, will be found by our readers to contain some valuable hints on Potato growing:—"In your issue of December 18, Mr. Culverwell, in writing of Potato culture on the farm, states, that the cowman at Thorpe Perrow has produced more than 12 tons of Magnum Bonum Potatos to the acre for the last three years, the manure used being a small scattering of half-rotten stable dung, and between 6 or 7 cwt. of specially prepared bones. Will he inform your readers how the bones are specially prepared, as the secret of success appears to lie there? *L. J. W.*" "In reply to the letter you sent to me on the culture of the Potato, I am of opinion that the specially prepared bones used for growing the Potatos form a very suitable manure, and was no doubt the main cause of success. I have no knowledge how the bones were specially prepared; they were supplied by Langdale & Co., of Newcastle-on-Tyne. To show that good crops of Potatos can be grown with other manures, I here give the sort and quantity used to grow the sensational crop, which I reported in the columns of the *Gardeners' Chronicle* some few years since:—6 cwt. of superphosphate, 2 cwt. of kainit, 15 cwt. of woollen manure, and ten cartloads of farmyard manure to the acre. This, with allowing plenty of room for growth, and what is more important is to allow plenty of soil for hoeing up the Potatos, and in a dry season it holds the moisture longer for the roots. The crop of Potatos grown with this manure, and in the way described above, I have never seen equalled; those Potatos were Champions. Mr. Towler grew his 12 tons to the acre with a different manure, supplied by another Newcastle firm. I am pleased I wrote my first letter, as I find it has done sood in many places, one man sending me word to say it was baby work to stick at 10 tons to the acre, and that he had grown nearer to 17 tons. Deep cultivation, with a good, rich, friable soil, is all that is required to make success certain. If your correspondent will again look at my first letter he will see that the cowman here produced 10 tons to the acre, and Mr. Towler 12 tons with a different manure. *William Culverwell, Thorpe Perrow.*"

Storing Ice in Stack.—Those of your readers who are desirous of having a supply of ice throughout the year, can now do so at a trifling expense incurred in collecting, pounding it together, and stacking it in a shady place, either on the side of a slope, if that be convenient, or on a site a few inches higher than the ground surrounding it. As the process of pounding and stacking the ice proceeds, boiling water (heated in a temporarily-erected copper close by) should be poured over it to consolidate the whole. When a sufficient quantity of ice has been got together, it should be covered with sifted sawdust to the depth of 3 inches, over which a further covering 2 feet thick of tree leaves should be placed, and some of long straw litter, to prevent the former from being blown away. This covering will prevent air from reaching the ice, and so insure its preservation. *H. W. W.*

Effects of the Late Storm.—The snowstorm of December 26, 1886, will be regarded as memorable in its destructive effects in gardens. To this your columns have already borne witness, and I would add a few items to the catalogue of disasters. In the park of Chiswick House, Chiswick, considerable damage has been done. The Cedars of Lebanon—a feature here—have been denuded of many large branches, as also have evergreen Oaks and Yews. Many tall Hollies and Boxes have been broken right to the ground, as well as common Laurels, which, however, are not of so much consequence. The effects of the storm may be seen all over the park. A peculiarity of the storm was its partiality, as in Bushey Park the trees on one side of the Chestnut Avenue have escaped with the loss of few boughs, but those on the other side (the west) have lost large boughs by hundreds. *B.*

—— The storm of December 26 will be regarded in its disastrous and damaging effect to trees and shrubs as one of the worst remembered by the present race of gardeners. Fine old trees that have stood for over a century had to give way, owing to the weight of snow and the fierce blast. Snow began to fall here about 4 o'clock in the afternoon and continued doing so until early morning, and in eight hours had fallen to a depth of 15 inches. For hours it was a continuous blinding storm, and above the noise of the wind was constantly heard the crashing of timber on all sides. Our position in a valley, and sheltered on all sides, made no difference. Oaks of large dimensions, together with Beech, Chestnuts, Scotch Firs, evergreen Oaks, Cork trees, large Acacias, Elms, suffered severely from the storm. Conifers many of the finest in the country, which grew here, are stripped of their branches from top to bottom. Cedars, Catalpas, Tulip trees, Red Cedars, Junipers, Magnolias, with very fine Liquid-ambar and old Judas trees, are greatly damaged, and in many cases nothing but wrecks. Fifty years' growth will not obliterate the damage done to grand and beautiful trees growing here, which the late storm dealt with so unmercifully. *W. C. Leach, Albury Park, Surrey.*

—— The wreckage here and for miles round amongst trees and shrubs from the storm that commenced on the evening of the 26th ult. is terrible, and the worst, I fear, is not yet; for whilst I write (January 4) the snow is falling in large flakes, and as many of our smallest Conifers have scarcely as yet gained their perpendicular from the previous storm, we have started all hands with long poles, wooden rakes, &c., to shake off the snow as it falls to prevent further breakage; obviously this procedure could not be followed in the former storm, because, as you observe at p. 7, it came "as a thief in the night"—an item that should have been taken into account in your answer to "T. C." at p. 25, lest employers that may happen to read that blame their gardeners for their carelessness in not taking the precaution to adopt such measures. Moreover, my belief is that the snow fell so fast that nothing we could have done would have prevented the injury. I herewith enclose you a copy of our rainfall for the year 1886, and in which you will note that the snowfall on the evening of the 26th amounts to 1·62 inch, being equal to nearly 8 inches depth of snow. The wind from the south-west blew a gale, consequently we had snowdrifts 6 feet deep; Gooseberry and Currant bushes are broken down, and lie quite flat, and many of the bushes are destroyed; standard Pears and Plums have fared the same; Hawthorns, Hollies, and Yews are flattened down, and until the snow disappears the extent of the damage to these cannot be ascertained. We had a grand line of Thuiopsis borealis—some two dozen plants—and all except three are wrecked; next to these, Lebanon Cedars have suffered most, and the following in a lesser degree:—Cryptomeria japonica, Sequoia sempervirens, Abies Douglasii, Cedrus Deodara, and the common Spruce Fir; Araucarias and Piceas have, without exception, escaped uninjured—a proof of the extreme toughness of their wood; large Rhododendrons, Lilacs, and Laburnums are sadly broken, and the deciduous trees that are most damaged are Horse Chestnuts, Beeches, Larches, and Oaks. Great boughs have come down in a most unaccountable manner, some trees being so disfigured that they will have to be cut down, whilst their near neighbours have not lost a limb. Why is this? It surely must be the difference in the strength of the wood; and if it is, how must we set about learning the distinguishing marks of the same so as to be able to turn it to practical account? *W. Wildsmith, Heckfield, Hants.*

Trees and Shrubs.

PHOTINIA SERRULATA.

We have a fine specimen of this ornamental shrub, 20 feet in diameter, about the same in height. I do not think it is so generally known as it should be. To my knowledge for upwards of ten years the above has passed through each winter without injury. Had it not been in the centre of the carriage drive and opposite to the front door, where it could not develope fully for want of space, it would have measured quite 40 feet in diameter. It is seldom met with growing other than against a south wall, but our plant faces full north, and gets not a glimpse of sunshine throughout the winter months. It seldom blooms to perfection on account of late spring frosts, although on several occasions it has perfected its somewhat Laurustinus-like blooms. Its large varied chocolate-coloured young foliage, and the older foliage has much beauty to recommend it as a garden shrub. *W. Gillett, The Heath, Weybridge.*

Willows for Ornament.

Nothing in our home nursery is at present half so ornamental as large patches or breaks of the various Willows: one in particular, composed of the golden and purple varieties, is especially attractive, and at once rivets the attention of most visitors. For dampish ground alongside a pond or stream I know of few things in the shrub line that are more taking and effective in appearance, as well as easily grown, than these Willows. To form a series of clumps no plants are required; simply insert cuttings in early spring, and in less than a couple of years their bright colours will recall to your mind that you somewhere saw a note regarding the value of these plants for ornamental purposes, and advising you strongly to give them a trial. *A. D. Webster.*

Ireland.

CHRISTMAS ROSES: AZARA.

By this morning's post I send you blooms of two excellent varieties of Christmas Roses, the one with the pink stigma being Mr. Poe's Riverston variety, to distinguish it from the other one sent, which is, I believe, similar to what is so largely grown near Bath. I have a wonderful bloom now in a cold house. I had the clump lifted and put into tubs under a south wall all the summer, the watering being well attended to. To distinguish these from two January blooming varieties one should see them growing—Mr. Poe's Riverston variety having light green foliage and stems, while the flowering stem is mottled with purple, and the stigma also pink or purple. The other variety sent you is in foliage much darker, the bloom not so imbricated and large, as you will notice, and the stems of both foliage and flowers, are spotted purple. They are both very fine sorts to cut from, and most useful just now.

I also send you foliage of Azara microphylla, cut from the open walls at Temple Hill. In England I find the plant has to be kept under glass, or if in the open, well protected. It does beautifully out-of-doors with me; and what pretty foliage to form a back to a spray of Christmas Roses for ladies' wear! Daffodils are very forward here in the south of Ireland. We experienced none of the havoc from storm or snow of the 26th ult. that one reads of as doing such mischief in England. *Baylor Hartland, Temple Hill, Cork.*

THE BAND-STAND IN GLASNEVIN BOTANIC GARDENS.

Mr. W. J. Murphy, Clonmel, writes of these gardens:—"At the time I allude to Dr. Moore, Ph.D., Glasnevin, was our Professor of Botany and Vegetable Physiology, and through his influence we alone, of any section of the public, had the right of visiting those gardens on Sundays. A more liberal policy now prevails, and the visitors on fine Sundays can be counted by the thousand. Last autumn, on the occasion of the colonial visitors public musical promenade there, several thousands must have been present, and many noticed the want of a stand for a military band, especially in bad weather, such as I observed in Manchester and other public gardens. I see by the daily papers an influential memorial has been forwarded to the Government in reference thereto."

THE HERBACEOUS BORDER.

SOLDANELLAS.

WE appear, in the neighbourhood of London at least, to be a long way behind in our culture of these charming plants on the rockery. Mr. Correvon, who we know studies the requirements of these alpines in their native wilds, tells us of the intense light that prevails at the high elevations where they grow, and we know of a place in Denbighshire where they flower as profusely as they do in the Alps, growing on flat beds in a fine peaty soil; but then the elevation is nearly 1000 above sea-level, and this with a clear, bracing atmosphere, helps somewhat to explain away the difficulty around London. Our atmosphere is anything but clear, the light anything but intense, and, to make matters worse, almost at sea-level; under such conditions our plants do not fail to grow, as might be supposed; on the contrary, they grow with a surprising luxuriance, producing large fine healthy leaves, hardly to be equalled in a wild state; they, however, almost fail to flower, and baffle all the ingenuity of the cultivator to make them do so without resorting to artificial treatment. The absence of snow, or some such genial covering, in the winter or early spring months, seems in a great measure to be the cause of their non-flowering, as they do so freely when kept in a cold frame or otherwise out of harm's way, while the severe weather lasts. The covering of snow under which these plants are always found in the Alps is, doubtless beneficial to them, and as we are never likely to get that with any degree of certainty, or in such quantity as to last until all danger of frost is past, we must look about for some artificial means of bringing about a like result. So far, however, as our own observation goes, the plants may be safely left until spring, when they begin to throw up their tiny incurved flower-buds, this apparently being the time when the real harm is done, and when their flowering is impeded. The spring frosts or cold east winds catch the tender flower-stalks where they curve, withering them up, and causing the buds to drop unopened. Mr. Paul, of Broxbourne, who was in a like difficulty, has tried rough cocoa-nut fibre, with, I believe, good results. This fibre is hard and stringy, does not hold moisture, but runs it off like a thatched roof, and is, so far as we can judge, an excellent substitute for snow, besides being comparatively cheap in moderate quantities. Finely sifted stones are also good; the fibre, however, is much lighter, and the flowers in their upward course have no difficulty in raising it. The plants should be grown on well-drained beds, so as to avoid all possibility of stagnant moisture at their roots. *D.*

VINES.

GRAFTING OR INARCHING VINES.

THE practice of splicing one Vine on to another kind with the view of improving the fruit, or giving vigour to delicate or uncertain growers, has been in use for many years, and in many cases advantages have been decidedly visible and continuous. The question as to which is the best stock to graft on, arises not uncommonly. After practising inarching and carefully noting results for more than a quarter of a century, I would give Black Hamburgh the best character as a stock for almost any other kind of Vine. The medium growth, fruitful habit, and strong constitution of Hamburgh Vine renders it very suitable for the purpose of inarching. Muscat of Alexandria is also a favourite with some for this purpose, and the kind for a stock which I have noticed as being marked by the least amount of success is Gros Guillaume. This season it has been noted that Gros Colmar and Muscat Hamburgh, grafted on that kind, have been deficient in colour, while the same kinds on their own roots, and fruited in close proximity to them, have coloured well. Muscat Hamburgh inarched on Black Hamburgh is larger and rounder in berry than those grown beside them on their own roots. The inarched ones have a very dense colour, and have set as freely as Hamburghs generally do. I have had Golden Hamburgh do remarkably well inarched on Esperione (a kind of Hamburgh but less compact). The berries grew to a great size and assumed a fine golden appearance. They kept free from shrivelling last season till February.

This beautiful Grape is rarely met with, because of its erratic habits. I have noticed in some three or four collections of Grapes that Buckland Sweetwater has been exhibited for Golden Hamburgh. That Sweetwater is very inferior to well cultivated Golden Hamburghs, and except in colour the fruits are not much alike. I have inarched Duke of Buccleuch on a small berried black Grape which we do not know, and the wood of the Duke on this kind is remarkably short-jointed, but it is yet premature to give a verdict of the result, but believe that a deal could be done for this grand Grape by inarching Vines on a certain grower and sure fruiter like Black Hamburgh. *Caledonian.*

SOCIETIES.

NATIONAL CHRYSANTHEMUM.

A MEETING of the General Committee of this Society took place at the "Old Four Swans," Bishopsgate Street, E.C., on Monday evening last, Mr. R. Ballantine, Vice-President, in the chair, in the absence of the President through illness. The Treasurer, Mr. J. R. Starling, handed in a statement on behalf of the trustees of the reserve fund, showing that the sum of £68 5*s.* 4*d.* was invested in Consols, and a further sum of £14 10*s.* 7*d.* had been paid to the Secretary, Mr. W. Holmes, in accordance with a vote of the annual general meeting. Several suggestions were made as to offering special Jubilee Prizes during the present year, and these were referred to the committee having to deal with the revision of the schedules. It was announced that Mr. H. Herbst, Mr. H. Davis, and others, would give special prizes of a valuable character for competition in November next. The names of twelve candidates for membership were announced. Judges were appointed for the winter show of Chrysanthemums at the Royal Aquarium on the 12th inst. The annual general meeting of the Society was fixed for Monday, January 31. A vote of condolence with Mrs. Moore and family was passed on the death of Mr. Thomas Moore of Chelsea.

In the schedule of prizes for 1886 appeared a notification to the effect that at the National Chrysanthemum Society's Exhibition in 1887 Mons. Simon Delaux fils aîné, Toulouse, would offer a Silver Cup, of the value of 600 fr., for the best grown plants of the set of new Chrysanthemums which he will send out in July, 1887; and a Silver Medal, of the value of 100 fr., for the best cut flowers of the same. This announcement has now been modified, by the advice of some English friends, and the prizes will now read as follows:—Class 1, sixty plants of the finest and best grown Japanese flowers, in pots, distinct varieties—1st prize, a Silver Cup, value £12. Class 2, sixty cut blooms of the finest Japanese, distinct varieties—1st prize, Silver Cup, value £12. Class 3, twelve cut blooms of early-flowering Japanese varieties, distinct varieties, and six cut blooms of early-flowering pompons, Pæony-shaped or intermediate kinds, distinct varieties—1st prize, Silver-gilt Medal, value £4. These prizes are offered for the new seedling Chrysanthemums raised by M. S. Delaux, which will be sent out in February next, and which won several special prizes at Chrysanthemum shows when exhibited as seedlings.

THE KITCHEN GARDEN.

SOIL PREPARATION AND SELECTION.

WITH the advent of the New Year the work of this department begins afresh. The necessary preparation for the various crops must be effected, and arrangements made as far as possible to meet the requirements both as regards the nature and condition of the soil, its texture, fertility, and to secure a suitable situation By due attention beforehand to these necessary details much disappointmen and failure may be averted, and in many instances a great saving of labour effected in vain attempts to put matters right afterwards. As was stated in a former Calendar, it frequently happens in old gardens, that a repetition of the same dressings of manure has been going on for years, chiefly consisting of a mixture of leaves and straw litter from the frame-ground. As a consequence the soil becomes infested with insects, gets sour, and in a generally unwholesome condition. As a remedy it is best to trench the quarters to the depth of 2 feet, leaving the surface as rough as possible. A top-dressing of salt should then be applied, at the rate of 6 to 8 bushels to the acre, followed by another good one of soot, taking advantage of frosts to well fork over the surface. Occasionally in these soils, overburdened with partially decayed manure (humus), and underlying the top spit is a subsoil of a more retentive nature; on bringing this to the surface a good top-dressing of lime, burnt ashes, screenings, &c., would in this case be preferable, adopting the same after-treatment. Where an uninterrupted supply of vegetables must be provided, care ought to be taken in the selection of sites for growing them. This is an important point, and requires consideration, for on it will depend the success or failure of the crop; especially is this necessary for the summer crops of all kinds of salading, Spinach, Cauliflowers, and Turnips. Preference should be given to dry warm, sheltered situations for the earliest sowings; and for succession a lower and cooler one, returning as autumn approaches, to sites recommended for the earliest sowings.

SELECTING SEEDS.

In doing this much will depend on the particular circumstances of the place, a much larger quantity and greater variety being required where a continuous supply has to be maintained than where the same extent of ground has to provide only a partial supply; provision also must be made if any particular kinds are more in request than others. For the main crops, varieties known to succeed in the locality should be relied on; but new varieties of vegetables should if possible be procured and fairly tested as to their merits or otherwise, not only for experimental purposes but as an encouragement to raisers. The full supply of seeds for the season is best obtained at an early date, and at one time; and on their arrival unpacked, assorted, dated, and placed on shelves or in drawers in a dry room, as nearly as possible in rotation ready for use. *John Austen, Witley Court.*

THE WEATHER.

AVERAGE MEAN TEMPERATURE OBSERVED AT CHISWICK FOR THE WEEK ENDING JANUARY 15.

January 9	36°.3	January 13	36°.6
,, 10	36°.4	,, 14	36°.6
,, 11	36°.4	,, 15	36°.7
,, 12	36°.5	Mean for the week ...	36°.5

THE PAST WEEK.

THE following summary record of the weather for the week ending January 3, is furnished from the Meteorological Office:—

The weather continued dull and unsettled in the western and north-western parts of the kingdom, with occasional falls of rain or sleet, but in all the more southern and eastern districts the conditions during the greater part of the period, although frequently dull and foggy, were somewhat fairer than of late. Towards the end of the period, however, the disturbed weather extended to all our coasts, and heavy rain, sleet, or snow was experienced generally.

Temperature has been below the mean in all districts; in Scotland, Ireland, and the "Channel Islands," the deficit has been from 1° to 3°, but it has been as much as from 5° to 7°. The highest of the maxima, which were recorded on irregular dates, ranged from 43° in "England N.E." and "England E." to 51° in "Ireland S." The lowest of the minima, which were registered in most places either on Jan. 1 or 2, varied from 8° in "England E." (at Rothamsted), 10° in the "Midland Counties" (at Cirencester), and 14° in "England S.," to 29° in "Ireland S." and 30° in the "Channel Islands." The lowest averages for the week at any individual stations were 28°·9 at Rothamsted and Cambridge, and 29°·3 at Oxford.

The *Rainfall* has exceeded the mean value in "Scotland N.," "England S.," "Ireland S.," and the "Channel Islands," but in most other districts it has been rather less.

Bright Sunshine has been more prevalent than it was last week in the "Wheat-producing" districts, but less so in the "Grazing" districts. The percentage of the possible amount of duration ranged from 9 in "England N.W.," to 37 in the "Channel Islands," and 38 in "England E."

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 42° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE. Above or below the Mean for the week ending Jan. 3.	Accumulated. Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Dec. 29, 1885.	Below 42° difference from Mean since Dec. 29, 1885.
Principal Wheat-producing Districts.		Day-deg.	Day-deg.	Day-deg.	Day-deg.
0. SCOTLAND, N. ...	2 below	0	34	− 145	+ 119
1. SCOTLAND, E. ...	3 below	0	48	− 64	+ 137
2. ENGLAND, N.E. ...	5 below	0	61	− 53	+ 200
3. ENGLAND, E. ...	7 below	0	76	+ 69	+ 255
4. MIDLAND COS. ...	7 below	0	74	+ 21	+ 189
5. ENGLAND, S. ...	7 below	0	58	+ 84	+ 211
Principal Grazing, &c., Districts.					
6. SCOTLAND, W. ...	1 below	1	30	− 215	+ 132
7. ENGLAND, N.W. ...	6 below	0	55	− 85	+ 214
8. ENGLAND, S.W. ...	5 below	1	39	− 118	+ 302
9. IRELAND, N. ...	2 below	3	28	− 162	+ 118
10. IRELAND, S. ...	1 below	10	21	− 125	+ 149
— CHANNEL ISLANDS	3 below	8	15	+ 4	+ 103

DISTRICTS.	RAINFALL. More or less than the Mean for the Week.	No. of Rainy Days since Dec. 29, 1885.	Total Fall since Dec. 29, 1885.	BRIGHT SUNSHINE. Percentage of possible duration for the Week.	Percentage of possible Duration since Dec. 29, 1885.
Principal Wheat-producing Districts.	Tenths of Inch.		Ins.		
0. SCOTLAND, N. ...	4 more	263	39.2	16	29
1. SCOTLAND, E. ...	4 less	204	25.4	20	31
2. ENGLAND, N.E. ...	3 less	199	29.2	32	27
3. ENGLAND, E. ...	1 less	193	26.2	38	34
4. MIDLAND COS. ...	0 (aver.)	202	33.2	20	28
5. ENGLAND, S. ...	2 more	195	33.1	27	34
Principal Grazing, &c., Districts.					
6. SCOTLAND, W. ...	3 less	218	47.0	12	28
7. ENGLAND, N.W. ...	2 less	214	43.4	9	28
8. ENGLAND, S.W. ...	1 less	218	46.8	26	33
9. IRELAND, N. ...	0 (aver.)	234	42.8	15	25
10. IRELAND, S. ...	1 more	227	46.2	10	29
— CHANNEL ISLANDS	2 more	251	38.6	37	41

The following report and remarks on the weather to the end of the year 1886 are furnished by Mr. Glaisher, and serve to make his Weather Report for last year complete:—

STATE OF THE WEATHER AT BLACKHEATH, LONDON, FOR THE NINE DAYS ENDING DECEMBER 31, 1886.

MONTH AND DAY.	BAROMETER. Mean Reading reduced to 32° Fahr.	Departure from Average of 18 years.	TEMPERATURE OF THE AIR. Highest.	Lowest.	Range.	Mean for day.	Departure of Mean from Average of 50 years.	Hygrometrical Deductions from Glaisher's Tables 5th Edition. Dew Point.	Degree of Humidity Sat. = 100.	WIND. Average Direction.	RAINFALL.
Dec.	In.	In.	°	°	°	°	°	°	°		In.
23	29.60	−0.25	41.6	33.0	8.6	38.2	− 0.2	33.7	84	N.W.	0.00
24	29.38	−0.48	43.7	32.0	11.1	39.6	+ 1.4	38.7	96	S.W.	0.13
25	29.75	−0.12	38.0	31.0	7.0	34.7	− 3.3	31.0	86	S.W.	0.00
26	29.00	−0.28	38.5	33.2	5.3	36.5	− 1.3	35.0	95	S.S.E.	1.91
27	29.60	−0.29	37.5	32.0	5.5	34.7	− 2.9	32.2	91	W.NW.	0.00
28	29.67	−0.23	40.0	35.0	5.0	37.7	+ 0.2	34.0	86	S.S.W.	0.00
29	29.75	−0.15	41.0	32.0	9.0	37.7	+ 0.3	33.7	85	N.W.	0.00
30	30.18	+0.28	35.8	29.5	6.3	33.3	− 4.0	32.3	93	N.W.	0.00
31	30.38	+0.48	35.2	29.3	5.9	32.5	− 4.7	30.1	91	N.	0.00
Mean	29.77	−0.12	39.0	31.9	7.1	36.1	− 1.0	33.4	90	Variable.	2.04

Dec. 23.—A fine but dull day; occasional gleams of sunshine.
— 24.—The morning was fine, the afternoon was dull, with rain.
— 25.—The morning was fine and bright; a fine day.
— 26.—Rain fell till 5 P.M. to the amount of 0.24 inch; between 5 and 6 P.M. snow began to fall, and by 10 P.M. was 8 inches in depth on level places; the barometer reading decreased quickly; the wind veered to N.E., blowing strongly.
— 27.—At 1 A.M. the minimum barometer reading took place—28.86 inches; after this its readings increased quickly; at 8 A.M. the depth of snow was fully 1 foot, and when melted yielded 1.65 inch of water; usually 1 foot of fresh-fallen snow produces 1 inch of water. This snow was the most dense I have ever known. The day was generally dull, but fine.
— 28.—A fine day and night.
— 29.—The morning was fine and bright; the afternoon was fine, but dull.
— 30.—Fine and bright generally, dull at times during the afternoon.
— 31.—Fog in early morning, fine and clear afterwards.

LONDON: *Atmospheric Pressure.*—During the week ending January 1, 1887, the reading of the barometer for the week at the level of the sea decreased from 29.93 inches at the beginning to 28·85 inches by 1 a.m. on the 26th, increased to 29·92 inches by the afternoon of the 27th, decreased to 29·80 inches by the afternoon of the 28th, increased to 30.60 inches by the morning of the 31st, and was 30·36 inches at the end of the week.

The mean reading of the barometer for the week at the level of the sea was 30·09 inches, being 0·18 inch higher than last week, and 0.03 inch above the average of the week.

Temperature.—The highest temperature in the shade in the week was 41° on December 29; the highest on January 1 was 27°·5. The mean of the seven high day temperatures was 36°.5.

The lowest temperature in the week was 23°.5 on January 1; the lowest on December 28 was 35°. The mean of the seven low night temperatures was 30°·6.

The greatest range of temperature in one day was 9° on Dec. 29; the smallest was 4° on Jan. 1. The mean of the seven daily ranges was 5°·9.

The mean daily temperatures were 36°.5 on the 26th, 34°.7 on the 27th, 37°.7 on the 28th, 37°.7 on the 29th, 33°.3 on the 30th, 32°.5 on Dec. 31st, and 24°.5 on Jan. 1. These were all below their averages, with the exception of Dec. 28 and 29, which were 0.2 and 0.3 above, by 1°.3, 2°.9, 4°, 4°.7, and 12°.7 respectively.

The mean temperature of the week was 33°.8, being 1°.4 higher than last week, and 3°.6 below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 64° on Dec. 31. The mean of the seven readings was 49°.6.

Rain.—Rain and melted snow fell to the amount of 1.91 inch.

LONDON: *Atmospheric Pressure.*—During the week ending December 25th, the reading of the barometer increased from 29.75 inches at the beginning of the week to 30.45 inches by the morning of the 21st, decreased to 29.62 inches by the afternoon of the 22d, increased to 29.82 inches by the afternoon of the 23d, decreased to 29.51 inches by 1 p.m. on the 24th, and was 29.93 inches at the end of the week.

The mean reading of the barometer for the week at the level of the sea was 29.91 inches, being 0.41 inch higher than last week, and 0.12 inch above the average of the week.

Temperature.—The highest temperature in the shade in the week was 43°.7 on the 24th; the highest on the 21st was 28°.2. The mean of the seven high day temperatures was 36°.8.

The lowest temperature in the week was 18°. on the 22d; the lowest, on the 23d, was 33°. The mean of the seven low night temperatures was 26°.2.

The greatest range of temperature in one day was 25° on the 22d; the smallest was 2°.7 on the 21st. The mean of the seven daily ranges was 10°.6.

The mean daily temperatures were 25°.8 on the 19th, 28° on the 20th, 26°.9 on the 21st, 33°.9 on the 22nd, 38°.2 on the 23rd, 39°.6 on the 24th, and 34°.7 on the 25th. These were all below their averages, with the exception of the 24th, which was 1°.4 above, by 14°.2, 11°.7, 12°.4, 4°.9, 0°.2, and 3°.3 respectively.

The mean temperature of the week was 32°.4, being 6°.3 lower than last week, and 6°.5 below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 62° on the 24th; the mean of the seven high readings was 47°.5.

Rain.—Rain fell on two days to the amount of 0.32 inch.

ENGLAND: *Temperature.*—During the week ending January 1, 1887, the highest temperatures were 50° at Truro, 48°.2 at Plymouth, and 46°.3 at Liverpool; the highest at Blackheath was 41°, at Bradford 41°.6, and at Wolverhampton 41°.9. The general mean was 44°.5.

The lowest temperatures in the week were at Bristol 19°, at Nottingham 19°.2, and at Wolverhampton 20°.6; the lowest at Plymouth was 28°, at Brighton 25°.4, and at Bradford 25°.2. The general mean was 23°.3.

The greatest ranges of temperature were at Bristol 27°, at Truro 25°, and at Nottingham 24°.7; the least ranges were at Bradford 16°.4, at Newcastle 17°, and at Blackheath 17°.5. The general mean was 21°.2.

The mean of the seven high day temperatures was highest at Truro 47°.4, at Plymouth 44°.9, and at Leeds 41°.4; and lowest at Blackheath 36°.5, at

Bristol 37°.1, and at Wolverhampton 37°.2. The general mean was 39°.8.

The mean of the seven low night temperatures was lowest at Wolverhampton 27°.3, at Bristol 28°.9, and at Nottingham 29°.1. The lowest at Truro was 35°.6, at Plymouth 32°.8, and at Bradford 31°.1. The general mean was 30°.6.

The mean of the seven daily ranges was greatest at Plymouth 12°.1, at Truro 11°.8, and at Leeds 10°.6; and least at Blackheath 5°.9, at Newcastle 7°.8, and at Bristol 8°.2. The general mean was 9°.2.

The mean temperature was highest at Truro 41°4, at Plymouth 38°.7, and at Leeds 36°; and lowest at Wolverhampton 32°.1, at Bristol 32°.9, and at Newcastle 33°.6. The general mean was 35°.1.

Rain.—The largest falls were 2·21 inches at Plymouth, 1·91 inch at Blackheath, and 1·76 inch at Truro; the smallest falls were 0·04 inch at Newcastle, 0·17 inch at Liverpool, and 0·26 inch at Leeds. The general mean fall was 0·95 inch.

ENGLAND: *Temperature.*—During the week ending December 25th, the highest temperatures were at Truro 52°, at Plymouth 50°, and at Bristol 46°; the highest at Sunderland was 38°, at Hull 41°, and at Wolverhampton 41°.6. The general mean was 43°.9. The lowest temperatures in the week were at Truro 14°, at Newcastle 15°, and at Nottingham 15°.8; the lowest at Leeds was 23°, at Plymouth 22°.2, and at Brighton 22°. The general mean was 19°.4.

The lowest reading of 14° on the morning of the 21st, at Truro, is very remarkable, as the same morning the lowest temperature at Plymouth was 22°. It is also remarkable that at Truro on the 20th the reading was as low as 19°, whilst at Plymouth the lowest reading was 25°.

The greatest ranges of temperature were at Truro 38°, at Newcastle 29°, and at Plymouth 27°.8; the least ranges were at Sunderland 17°, at Leeds 20°, and at Bradford 20°.6. The general mean was 24°.5.

The mean of the seven high day temperatures was highest at Truro 46°.1, at Plymouth 42°.9, and at Bristol 41°.8; and lowest at Sunderland 36°.1, at Blackheath 36°.8, and at Wolverhampton 36°.9. The general mean was 39°.2.

The mean of the seven low night temperatures was lowest at Wolverhampton 25°.2, at Nottingham 25°.4, and at Hull 25°.7; the lowest at Liverpool was 31°.5, and at Bradford and Leeds 29°.5. The general mean was 27°.7.

The mean of the seven daily ranges was greatest at Truro, 18°, at Plymouth 15°.3, and at Bristol 13°.3, and least at Liverpool, 8°, at Sunderland 8°.1 and at Bradford 8°.4. The general mean was 11°.5.

The mean temperature was highest at Truro, 37°.1, at Liverpool 35°.5, and at Plymouth 35°.3; and lowest at Wolverhampton, 31°, and at Nottingham and Hull 31°.8. The general mean was 33°.5.

Rain.—The largest falls were 1°.36 inch at Truro, 1.18 inch at Sheffield, and 0.56 inch at Brighton; the smallest falls were 0.28 inch at Nottingham, 0.32 inch at Blackheath, and 0.34 inch at Leeds. The general mean fall was 0.54° inch.

NOTICES TO CORRESPONDENTS.

TO THE TRADE.—Members of the Trade will oblige by sending notes of matters of Trade interest, Cultural or Commercial. Short notes of daily experience are what are most useful.

INTELLIGENT READERS, DO PLEASE NOTE.—*Letters relating to* ADVERTISEMENTS, *or to the supply of the Paper, should be addressed to the* PUBLISHER, *and not to the Editor.*

AMARYLLIS SEEDLINGS: *R. Butland.* The flowers of these you sent for inspection were fine in size, form, and colour, as well as being of great substance. The form is not so smooth as to find admirers amongst some of the sticklers for symmetry, but to our thinking they are more pleasing than the broad-pointed segments.

AVERAGE PERCENTAGES: *P. T. I.* It is clearly impossible to give you the average percentages of so many different elements with anything like accuracy, for the proportions vary in different individual plants, and at all stages of growth.

BEETROOT, NONPAREIL GREEN-TOP: *C. D.* The roots sent are fine in shape, without lateral rootlets, and resemble the Chelsea Beet, a variety selected from Henderson's Short-top Beet by the late Mr. Thomas Moore, of the Chelsea Botanic Garden.

CUCUMBERS: *G. Eenab.* If your cucumber pit never gets any direct sunlight through the winter months the plants will be fruitless and unhealthy, and we doubt if there would be much improvement when the sun shines on the house again in the spring. The situation is totally unfitted for Cucumber growing in the winter. The compost might contain with advantage a larger proportion of stable manure and some cow-dung. Leaf-mould is not rich enough, and, moreover, is apt to engender fungi.

MARGUERITES: *G. B.* Your leaves are eaten by the grub of a two-winged fly, the history of which was given in our columns May 12, 1883, with figures of the perfect insect, and of the parasite that feeds upon it, and keeps it in check. You should cut off all the affected shoots as soon as you see them, and burn them. (See fig. 14.)

FIG. 14.—MINING-GRUB OF "MARGUERITE" LEAVES.

CUTTINGS OF ZONAL PELARGONIUMS: *Young Gardener.* Before taking cuttings in the early spring, the shoots, to enable them to be rooted readily, must have made some slight start into growth in a warm house. No heel of old wood is required, and is in fact rather detrimental than otherwise, but the bottom of the cutting must be cut off horizontally just below a joint, and the cutting may then be allowed to lie in a dry place, so as to dry the cut surface and produce a slight wilting of the foliage.

EUCHARIS: *G. B.* Another time send your inquiry to the Editor and not to the Publisher. Your bulbs are affected with the Eucharis mite, so often referred to, and figured in the *Chronicle.* We fear there is nothing to be done but to destroy the bulbs, turn out the soil, and start afresh.

FORGET-ME-NOTS: *J. M. T.* The plant going under this name is *Myosotis palustris*, a native or Britain, of which there are five varieties, and there are other species of Myosotis amounting to more than a dozen. We are unable to say whether the ordinary explanation given of the popular name, Forget-me-Not is correct.

FRUIT TREE CATALOGUES: *W. M. M., New York.* We have advised several firms to send you their lists.

LAPAGERIA: *J. C. B.* Before giving an opinion as to the cause of the shoots and foliage turning brown, we should like to have fuller particulars as to position of the heating apparatus, ventilation, manure water if any has been used, &c.

NAMES OF PLANTS: *J. S.* We cannot undertake to name florists' flowers.—*H. A.* 1, Pellionia Daveauana; 2, Begonia fagifolia; 3, Lasiandra macrantha; 4, Eranthemum variegatum; 5, E. tricolor. *C. D. & S.* Ilex dipyrena, &c.

RUSCUS ACULEATUS: *Ruscus.* The plant belongs to the Natural Order, Liliaceæ. The so-called leaves are really branches, terminating in a spine: and the male and female flowers appear generally on different plants. It is found to flower generally in this country, but seldom bears berries in any quantity.

SKELETONISED LEAVES: *M. G.* You had better apply to Mrs. Hodgkins, 5, Beaufort Avenue, Willington, Manchester, who exhibits cases of these leaves at various shows.

SNOWFALL: *H. H. D.* Snow is ten to twelve times lighter than water; hence 12 inches of snow would be equal to 1·20 inch of rain.

SOLANUM CAPSICASTRUM: *B.* This is a native of South Brazil. It had long been known and cultivated, but Mr. Mackintosh, then a nurseryman of Hammersmith, has the credit of making it a popular plant in 1859.

CATALOGUES RECEIVED.

WILLIAM PAUL & SON, Waltham Cross—Seed Catalogue.

CLARK BROTHERS & Co., 65, Scotch Street, Carlisle—Garden Seeds.

R. B. LAIRD & SONS, 17, Frederick Street, Edinburgh, N.B.—Kitchen Garden and Flower Seeds.

JAMES DICKSON & SONS, 108, Eastgate Street, Chester—Vegetable and Flower Seeds.

W. H. ROGERS, 132, High Street, Southampton—Farm and Garden Seeds.

DOBBIE & Co., 55 to 63, High Street, Rothesay, N.B.—Seeds and Plants.

ROBERT VEITCH & SON, 54, High Street, Exeter—Vegetable and Flower Seeds.

CHARLES SHARPE & Co., Sleaford, Lincolnshire—Garden and Farm Seeds.

CHR. LORENZ, Erfurt, Germany—Seed List.

E. P. DIXON, Hull—Garden and Farm Seeds.

VICCARS COLLYER & Co., Leicester—General Catalogue.

J. C. WHEELER & SON, Gloucester—Seed List.

B. S. WILLIAMS, Upper Holloway, London, N.—Seed Catalogue.

WM. CUTBUSH & SON, Highgate, London, N.—Seed Catalogue.

W. DRUMMOND & SONS, Stirling, N.B.—Vegetable and Flower Seeds.

J. CHEAL & SONS, Crawley, Sussex—Garden Seeds.

LUCOMBE, PINCE & Co., Exeter—Fruit Trees.

W. B. SMALE, 30 & 31, Fleet Street, Torquay—Seed Catalogue.

TOOGOOD & FINLAYSON, 58, Above Bar, Southampton—Garden Seeds.

KENT & BRYDON, Darlington—Seeds and Forest, Fruit Tree Catalogues.

JOHN DOWNIE, 144, Princes Street, Edinburgh, N.B.—Garden Seeds.

DANIELS BROS., Norwich—Illustrated Guide for Amateur Gardeners.

LITTLE & BALLANTYNE, Carlisle—Wholesale Seed List, 1887; and Seeds and Garden Requisites.

BARR & SONS, 12 and 13, King Street, Covent Garden, W.C.—Flower and Vegetable Seeds.

STEVENS BROS. & Co., 4, Upper Thames Street, London—Horti-Agricultural Boilers, &c.

COMMUNICATIONS RECEIVED.—C. G. D.—W. S.—N. B.—W. C.—Wild Rose.—C. W. D.—J. B.—D. T. F.—F. T. T.—Professor Reichenbach.—W. V.—W. S.—J. G. Baker.—A. H.—J. R. J.—W. E.—H. W. H.—T. B.—J. D.—T. W.—W. S.—H. Correvon.—W. J. M.—C. W. S.—G. M.—R. H.—E. M. H.—H. C. & Sons.—G. H.

DIED, on Saturday morning, January 1, very suddenly, at the Chelsea Botanic Garden of the Society of Apothecaries, of which he had been Curator for thirty-eight years, THOMAS MOORE, F.L.S., aged sixty-five years. The interment took place at Brompton Cemetery on Wednesday, January 5.

DIED, on January 2, at Stepney Lodge, Hull, EDMUND PHILIP DIXON, aged eighty-two years.

MARKETS.

COVENT GARDEN, January 6.

TRADE still very quiet, with supplies shorter. Prices unaltered. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apple, ½-sieve	1 6– 3 6	Lemons, per case	12 0–21 0
— Nova Scotia, brl.	8 0–12 0	Pears, per dozen	2 0– 4 0
Grapes, per lb.	1 0– 2 6	Pine-apples, Eng., lb.	1 0– 1 6
Kent Cobs, 100 lb.	65 0 70 0	— St. Michael. each	1 6– 6 0

VEGETABLES—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, per doz.	4 0– ...	Mushrooms, punnet	1 6– 2 6
Beans, Kidney, lb.	1 0– ...	Mustard and Cress, punnet	0 4– ...
Beet, red, per dozen	1 0– 2 0	Onions, per bushel	3 0– ...
Brussels Sprouts, lb.	0 3– ...	Parsley, dozen bunch	4 0– ...
Carrots, per bunch	0 6– ...	Potatos, per cwt.	4 0– 5 0
Cauliflowers, per doz.	3 0– ...	,, kidney, per cwt.	4 0– 5 0
Celery, per bundle	1 6– 2 0	Seakale, per punnet	2 6– ...
Cucumbers, each	0 6– 1 0	Shallots, per lb.	0 3– ...
Endive, per dozen	1 0– 2 0	Spinach, per bushel	5 0– ...
Green Mint, bunch	1 3– ...	Sprue, bundle	1 0– ...
Herbs, per bunch	0 4– ...	Tomatos, pet lb.	1 0– 1 6
Leeks, per bunch	0 3– ...	Turnips, bunch	0 4– ...
Lettuce, per dozen	1 0– 1 0		

POTATOS.—Regents, 80s. to 100s.; Magnums, 70s. to 90s. per ton.

PLANTS IN POTS.—AVERVGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz.	6 0–18 0	Ficus elastica, each	1 6– 7 0
Arum Lilies, dozen	18 0–24 0	Ferns, in variety, per dozen	4 0–18 0
Azaleas, per dozen	24 0–42 0	Foliage plants, various, each	2 0–10 0
Begonias, per dozen	6 0–12 0	Hyacinths, 12 pots	9 0–12 0
Bouvardias, doz.	9 0–12 0	Marguerite Daisy, per dozen	6 0–12 0
Cyclamens, dozen	12 0–24 0	Myrtles, per dozen	6 0–12 0
Cyperus, per dozen	4 0–12 0	Palms, in var., each	2 6–21 0
Dracæna terminalis, per dozen	30 0–60 0	Pelargoniums, scarlet, per doz.	6 0– 9 0
— viridis, per doz.	12 0–24 0	Poinsettias, dozen	12 0–18 0
Epiphyllum, dozen	18 0–30 0	Primula sinensis, per dozen	4 0– 6 0
Erica gracilis, doz.	9 0–12 0	Solanums, per dozen	9 0–12 0
— hyemalis, doz.	12 0–24 0	Spiræa, per dozen	12 0–24 0
— regerminans, doz.	8 0–12 0	Tulips, 12 pots	6 0– 8 0
— various, dozen	9 0–24 0		
Euonymus, in var., per dozen	6 0–18 0		
Evergreens, in var., per dozen	6 0–24 0		

CUT FLOWES.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Arum Lilies, 12 blms.	5 0– 8 0	Mignonette, 12 bun.	1 0– 3 0
Azaleas, 12 sprays	0 9– 1 6	Pelargoniums, per 12 trusses	1 0– 1 6
Bouvardias, per bun.	0 6– 1 0	— scarlet, 12 trusses	0 6– 1 0
Camellias, 12 blooms	2 0– 4 0	Primulas, single, 12 bunches	4 0– 6 0
Carnations, 12 blms.	1 0– 3 0	Roses, Tea, per doz.	2 0– 4 0
Chrysanth., 12 blms.	1 0– 2 0	— coloured, dozen.	3 0– 6 0
— 12 bunches	12 0–24 0	— red, French, doz.	2 6– 3 6
Eucharis, per dozen	4 0– 8 0	— Saffrano, Fr. doz.	1 6– 3 0
Gardenias. 12 blooms	6 0–12 0	Tropæolums, 12 bun.	1 0– 2 0
Heliotrope, 12 spr.	0 6– 1 0	Tuberoses, 12 blms.	1 0– 2 0
Jasmine, white, bun.	0 6– 0 9	Violets, 12 bunches	1 6– 2 0
Lapageria, red, 12 blooms	1 0– 2 0	— Parme, French, per bunch	6 0– 7 6
— white, 12 blooms	2 0– 4 0	— Czar, Fr., bunch	2 0– 2 6
Marguerites, per 12 bunches	3 0– 6 0		

SEEDS.

LONDON: *Jan.* 5.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., state that there was but little business passing on the market to-day: the unfavourable weather checks sales. Nevertheless, as regards values, an exceedingly firm tone prevails, and as soon as the general country inquiry sets in it is confidently anticipated that a moderate advance on the present safely low level of quotations will be established. Superfine samples of Clover seed are this season scarce. Spring Tares are now remarkably cheap. Blue boiling Peas are in improved request. Bird seeds continue in small demand at last week's currencies.

FRUIT AND VEGETABLES.

STRATFORD: *Jan.* 3.—The supplies have been good, and a fair trade was transacted at the following prices:—Savoys, 5s. 6d. to 6s. per tally; Greens, 1s. 6d to 2s. per dozen bunches; Cauliflowers, 1s. 6d. to 2s. do.; Turnips, 40s. per ton; Carrots, household, 30s. to 40s. do.; ditto, cattle feeding, 20s. to 25s. do.; Parsnips, 9d. to 1s. per score; Mangels, 14s. to 17s. 6d. per ton; Swedes, 15s. to 23s. do.; Onions, 80s. to 110s. do.; Apples, Wellingtons, 6s. to 7s. per bushel; Brussels Sprouts, 2s. to 2s. 3d. per half sieve; ditto, 4s. to 4s. 6d. per bushel.

POTATOS.

STRATFORD: *Jan.* 3.—Quotations:—Yorks, 75s. to 85s.; Cambridgeshire, 55s. to 65s.; and Lincolns, 70s. to 80s. per ton.

A FACT REALLY WORTH KNOWING,

Is where to get the undermentioned extremely cheap and of first-rate quality.

S. BIDE,

ALMA NURSERY, FARNHAM, SURREY,

Begs to offer the following, of which he holds a large stock:—

ALDER, 2 to 3 feet, 25s. per 1000; ditto, 3 to 5 feet, 30s. per 1000.
BIRCH, 3 to 4 feet, and 4 to 6 feet, 30s. to 40s. per 1000.
HORNBEAM, 4 to 6 feet, 40s. per 1000.
QUICKS, stout, from 15s. to 20s. per 1000.
SCOTCH FIR, very fine stuff, from 1 to 2½ feet, 12s. to 25s. per 1000.

All the above have splendid roots.

ASPARAGUS, from 1 to 4 years old, 1s. to 3s. per 100.
SEAKALE, extra fine, for planting, 6s. to 8s. 100.

DWARF-TRAINED FRUIT TREES,
EXTRA STRONG.

APPLES, PEARS, PLUMS, and CHERRIES, 18s. to 24s. per dozen.
APRICOTS, NECTARINES, and PEACHES, 24s. to 30s. per dozen.
STANDARD APPLES, PEARS, and PLUMS, 12s. per dozen.

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It is a sport from the well-known Japanese variety "**ETHEL**," and is the exact counterpart of that favourite variety in every way excepting the colour, which is a beautiful rich bright golden-yellow, distinct in colour from every variety in cultivation. I shall have quantities of flowers until the END OF JANUARY; showing it to be a specially LATE-flowering one.

Price, per Dozen, Hundred, and Thousand, upon application.

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HALE FARM NURSERIES,
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DANIELS' CHOICE CUCUMBERS FOR 1887.

The four best sorts in the World for Market, Exhibition, or the Nobleman's Table.

Each sort price 1s., 2s., and 5s. per pkt., post-free.

DANIELS' DUKE OF ALBANY.

This is one of the most prolific Cucumbers ever raised; long, straight, handsome, dark green fruit (20 to 26 inches), are produced three and four at a joint. As many as 280 full-sized fruit have been growing at the same time in a house 20 feet long.

From Mr. J. A. EVERSON, Harleston.

"I had a 2s. 6d. packet of **Duke of Albany Cucumber**, and planted twelve seeds in two separate houses. I have averaged 1d. per fruit more than for other sorts. From twelve plants I planted out the last week in April, I have cut 325 fruits up to July 7th inst.; so that I consider it a wonderful bearer, and for exhibition it has no equal."

DANIELS' DUKE OF EDINBURGH.

The longest Cucumber grown (30 to 36 inches) of the most symmetrical proportions. We have exhibited three fruit measuring collectively 100 inches.

From B. H. BEEDHAM, Esq., Kimbolton.

"**Daniels' Duke of Edinburgh** is certainly by far the best Cucumber I have yet tested. It has scarcely any seeds, and is altogether of a very superior description. I wonder how some persons can persist in growing those varieties in which a thin coating of flesh only serves as a covering to an immense mass of seeds."

DANIELS' DEFIANCE (EARLY PROLIFIC)

A magnificent variety for early Spring and Summer work, bearing an abundance of handsome dark green fruit, 18 to 20 inches long.

From Mr. J. C. HAWK, Newington, Sittingbourne.

"I am pleased to say that the **Daniels' Defiance Cucumber** proved a great success, growing 26 inches long, and as many as eighteen on one plant at a time fit to cut."

DANIELS' IMPROVED TELEGRAPH

A great improvement on the old Telegraph; an abundant bearer of straight, handsome fruit, 18 to 22 inches long.

From F. R. FORREST, Esq., W. Porlock.

"I must thank you for the splendid sample of seeds you sent me last year. The **Cucumber (Improved Telegraph)** I had an immense quantity of and very fine."

Catalogues Gratis and Post-free on application.

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ERICA HYEMALIS ALBA.

First-class Certificate Royal Horticultural Society, January 10, 1882.

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HAS GREAT PLEASURE IN ANNOUNCING THAT HE

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SOUTH KENSINGTON, on TUESDAY, the 11*th inst.*,

A Group of his New Pure White ERICA HYEMALIS, the original of which received First-class Honours as above stated.

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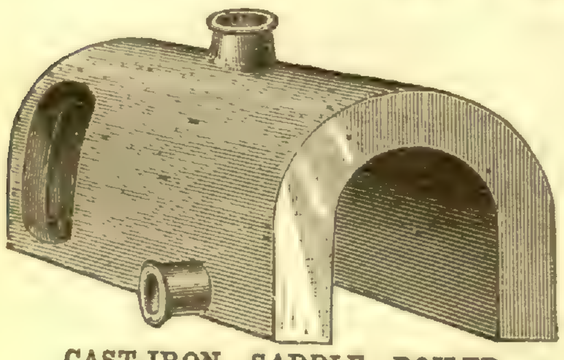

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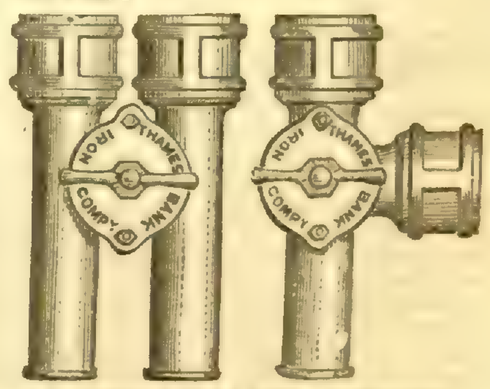

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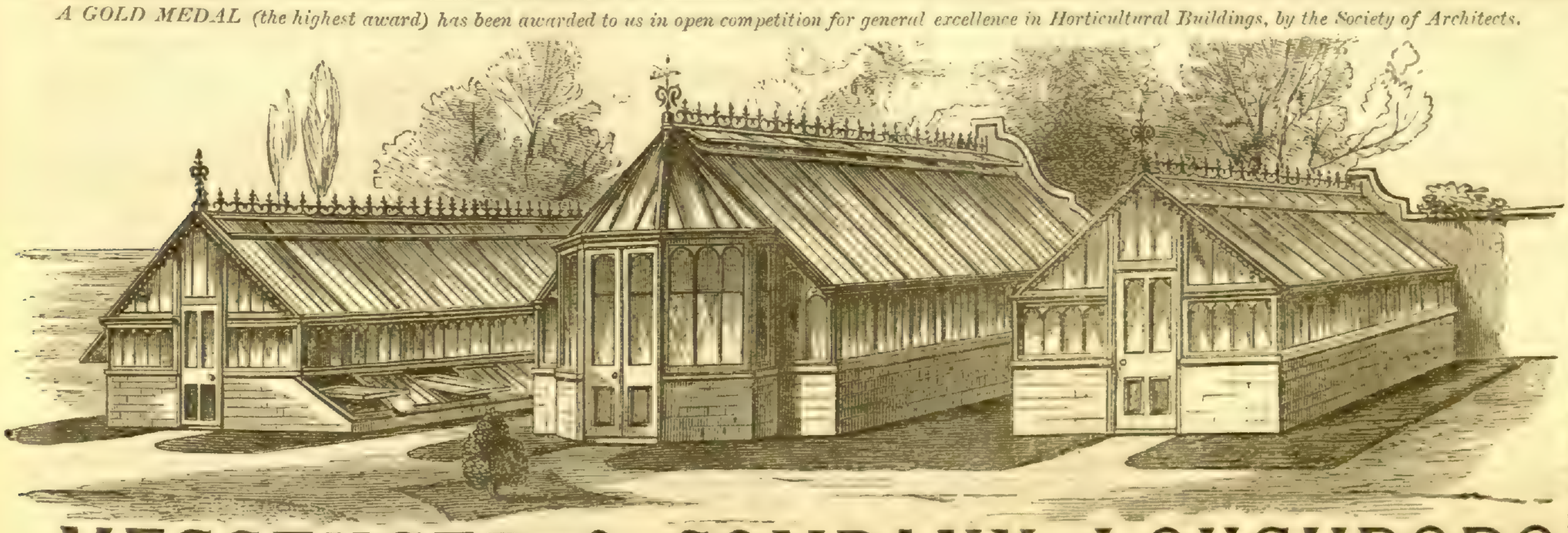

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LONDON, W.C.

_____ 1887.

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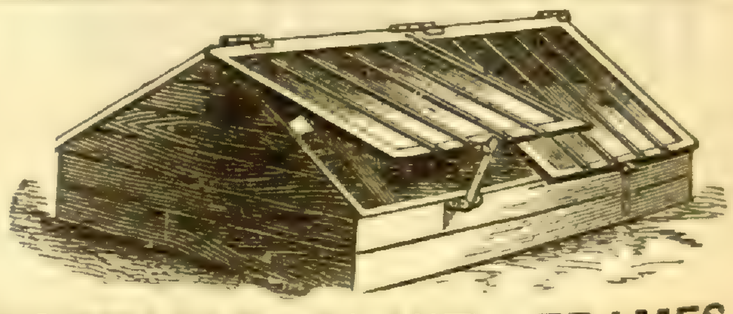
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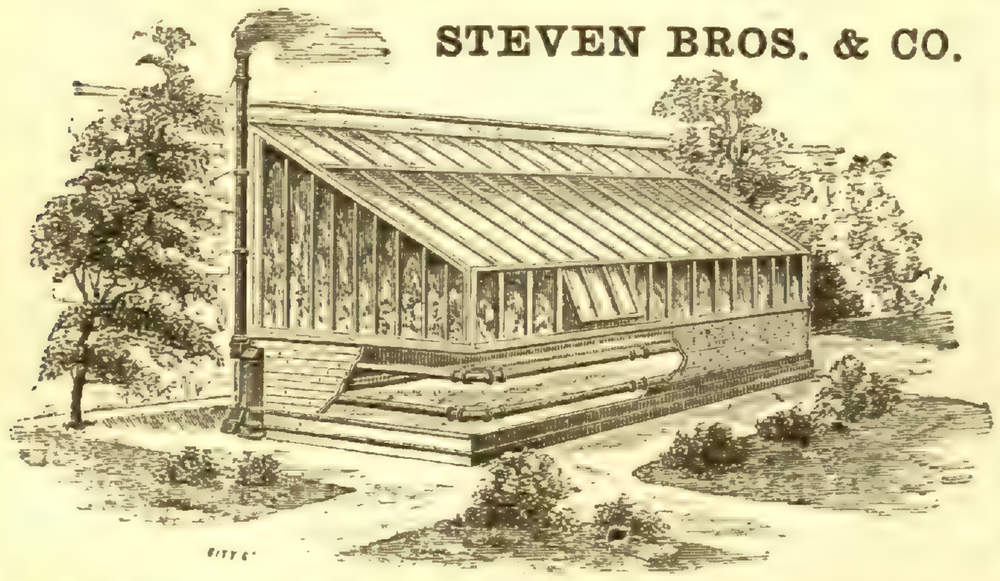
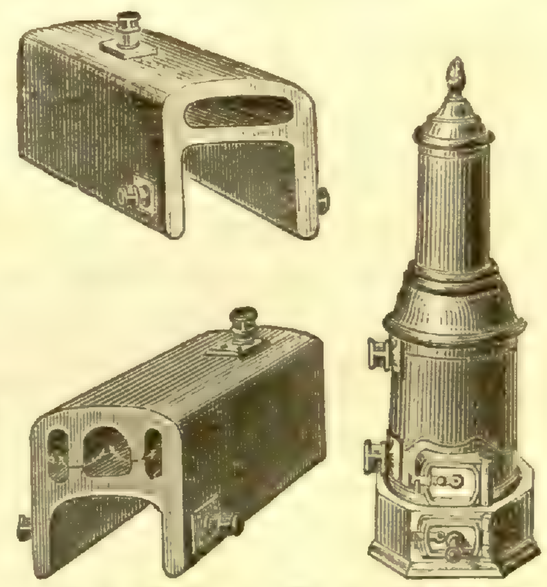

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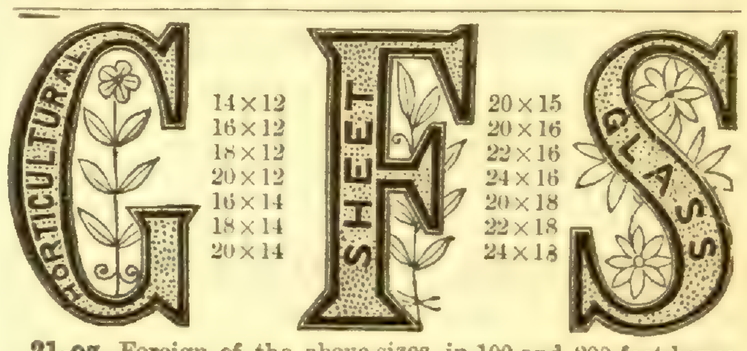

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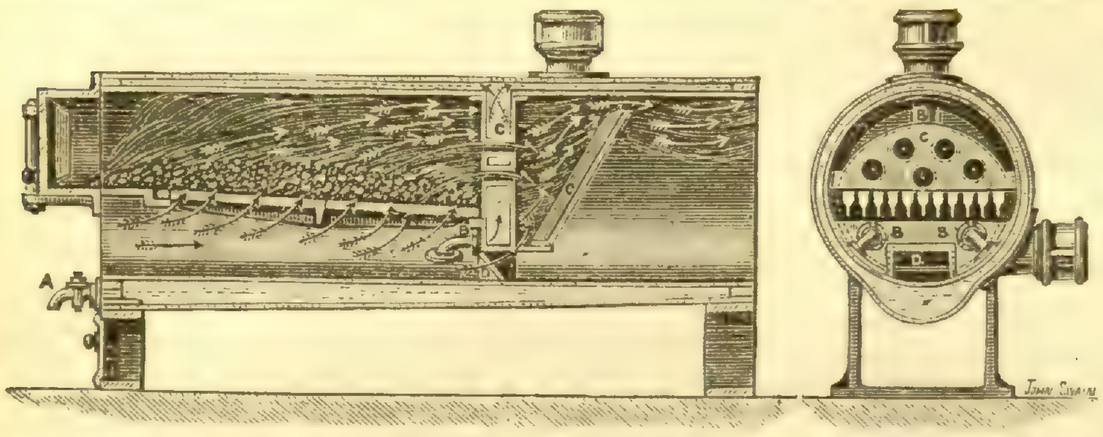

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IRISH CAMBRIC POCKET HANDKERCHIEFS, Hemmed for Use. Per dozen—Children's, 1*s.* 2*d.*; Ladies' 2*s.* 4½*d.*; Gentlemen's, 3*s.* 6*d.* Hemstitched — Ladies', 2*s.* 11½*d.*; Gents', 4*s.* 11*d.* Samples post-free.

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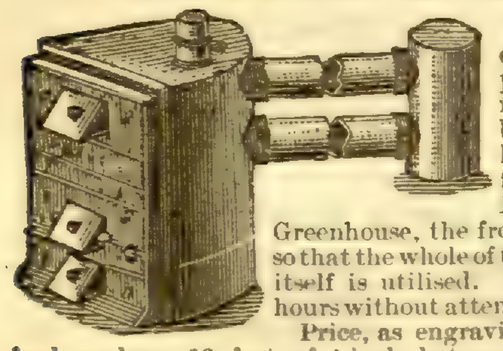

This is the simplest, cheapest, and most powerful apparatus made. It requires no brick setting, no stokehole, and no hot-water fitter for fixing. The Boiler stands in the Greenhouse, the front only being outside, so that the whole of the heat from the Boiler itself is utilised. It burns over twelve hours without attention, at a nominal cost.

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10 × 6 feet	... £4	14	0	20 × 10 feet	... £6	0	0
12 × 8 feet	... 5	1	0	25 × 12 feet	... 6	16	8
15 × 9 feet	... 5	10	8	40 × 16 feet	... 12	12	4

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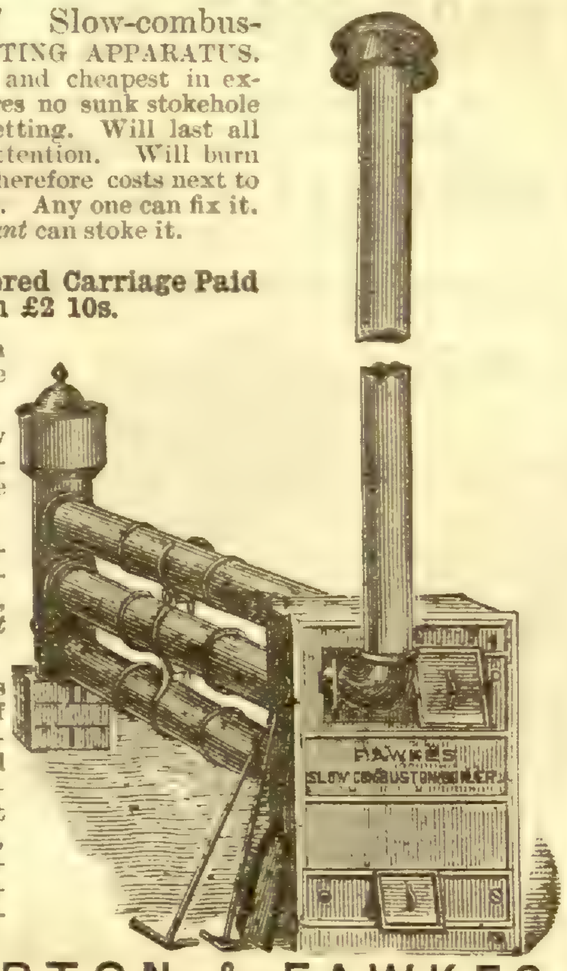

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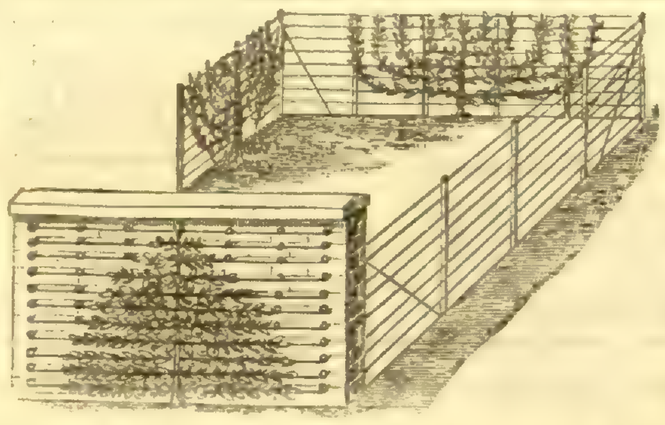

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GARDENING APPOINTMENTS.

Mr. THOMAS CARLING, late of The Hollies, Acrefield Road, Woolton, Liverpool, has been appointed Head Gardener to GEORGE COPE, Esq., Dove Park, Woolton, Liverpool.

Mr. WILLIAM HODGINS, Foreman at Walton Lea, near Warrington, has been appointed Head Gardener to A. M. SMITH, Esq., Bolton Hey, Roby, Liverpool.

Mr. R. LAING, late of The Bank, Linlithgow, has been appointed Gardener to W. BLACKWOOD, Esq., Gogar Mount, Corstorphine.

Mr. ROBERT LESLIE, late of Munches, has been appointed Gardener to HUGO HAIG, Esq., of Ramornie, Ladybank, Fife.

Mr. JOSEPH RUTHERFORD, late Foreman to Lord KINNAIRD, Plaistow Lodge, Bromley, Kent, as Head Gardener to H. BICKNELL, Esq., Cavendish House, Clapham Common, S.W.

Mr. ALBERT SAUNDERS, for two and a half years Foreman at East Dene, Isle of Wight, has been appointed Head Gardener to Col. CORNWALLIS WEST, M.P., Newlands Manor, Lymington, Hampshire.

WANTED, a PARTNER, in an Old-established Wholesale Corn, Seed, Manure, and Cake Business—South of England.—E. SHERWOOD, Esq., 152, Houndsditch, London, E.

WANTED, a young Man as GARDENER in a Business Establishment, who thoroughly understands the Management of Houses; would also have care of Garden, with assistance.—Mr. LAKE, Sheriff's Court, Minster, near Ramsgate.

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WANTED, a PROPAGATOR and GROWER, in Market Garden. Must be first-class Grower of forced Roses, Maidenhair Ferns, and all Soft-wooded Plants. First-class references as to ability and character.—Reply, stating wages, and all particulars, to M. L., Beale's Library, 55, East Street, Brighton.

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H. CANNELL AND SONS have VACANCIES for several educated young MEN who wish to become thoroughly efficient in the various branches of the Seed and Nursery Trades.—For particulars, apply Swanley, Kent.

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WANTED, a JUNIOR CLERK.—Apply, stating wages and references, WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

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WANTED, an ASSISTANT, quick at Parcelling, and of good address.—State experience, references, age, height, and wages required, to DICKSON AND ROBINSON, Seed Merchants, Manchester.

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SCOTCH GARDENERS.—JOHN DOWNIE, Seedsman, 144, Princes Street, Edinburgh, has at present on his List a number of SCOTCH GARDENERS, wanting re-engagements. He will be pleased to supply full particulars to any Lady, Nobleman, or Gentleman requiring a trustworthy and competent Gardener.

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B. S. WILLIAMS begs to intimate that he has at present in the Nursery and upon his Register some excellent Men, competent either to fill the situation of HEAD GARDENER, BAILIFF, FOREMAN, or JOURNEYMAN. Ladies and Gentlemen requiring any of the above will please send full particulars, when the best selections for the different capacities will be made.—Holloway, N.

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GARDENER (HEAD WORKING), one or more Assistants.—Age 41, married, no family; thoroughly practical. Land and Stock if required. Good character. Abstainer.—B., 5, Townroe Cottages, Newport Arch, Lincoln.

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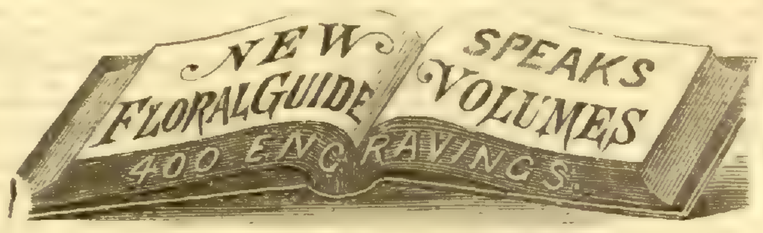

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SHARPE'S PEA. 1s. 6d. per pint.	**PARAGON.** Hardiest and earliest large Wrinkled Marrow. Successive crops can be had for four months. *First-class Certificate R.H.S.*, 1884.
SHARPE'S PEA. 1s. 6d. per qrt.	**PROLIFIC WHITE MARROW.** An excellent, large-podded, prolific White Wrinkled Marrow.
SHARPE'S PEA. 1s. per quart.	**INVINCIBLE.** Fine, long-podded, Blue Marrow. Peas deep green. A fine Market Garden Pea.
SHARPE'S BEAN. 1s. per pint.	**CONQUEROR.** The longest-podded variety known. Pods often 16 to 18 inches long. Fine for Exhibition.
SHARPE'S CUCUMBER. 2s. per packet.	**EPICUREAN.** The most prolific, earliest, deepest in colour, and finest in flavour of any variety grown. Fruit long and very handsome. It is simply *perfection*.
SHARPE'S POTATO. 6d. per pound.	**VICTOR.** The earliest, quickest, and most productive kind for forcing or early planting—ready for table in from six to eight weeks.
SHARPE'S POTATO. 3s. per stone.	**DUKE OF ALBANY.** Most valuable main crop variety—good to use from July to March.
SHARPE'S MELON. 2s. 6d. per pkt.	**ST. VINCENT.** Scarlet-flesh; large roundish oval. Skin light orange; very much netted. Flesh of great richness, rich, melting, and of a most delicious flavour. The plant is a strong robust grower, free setter, and early.
SHARPE'S BROCCOLI. 1s. per packet.	**SELECTED WINTER.** An improvement upon Osborn's. Dwarf, with firm, pure white heads. Ready for use from the middle of November forward.
SHARPE'S BEET. 1s. per packet.	**EMPEROR.** The finest of the glossy-leaved varieties used for bedding. Leaves metallic in appearance and very deep in colour. The root is deep red, without rings, and very rich in flavour.
SHARPE'S TOMATO. 1s. per packet.	**ECLIPSE.** A remarkably prolific variety. Fruit globular, smooth, growing in large clusters at every joint, exquisite flavour, colour bright cherry-red.
SHARPE'S PARSLEY. 6d. per packet.	**LINCOLN GREEN.** The perfection of garnishing Parsley.
SHARPE'S ONION. 1s. per packet.	**PRIZE WHITE SPANISH.** The best type of the Banbury section of Onions.

For full description see Advertisements in the Horticultural Papers. or,

SHARPE'S SEED LIST for 1887.
POST-FREE ON APPLICATION.

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CONTENTS.

Adiantum Farleyense ... 73
Amateurs' notes 75
Apiary, the... 75
Blue tit, a carnivorous bird 83
Books, notices of :—
British Orchids 74
Botanical Magazine ... 81
Calanthe Veitchii × ... 83
Catasetum costatum ... 72
Chlorophytum elatum ... 81
Contrast and Harmony ... 77
Cultural memoranda ... 73
Dendrobium × Vanneri-anum 72
Epipactis ovalis 83
Flower garden, the ... 82
,, pyramidal ornaments in the 76
Fruits under glass... ... 78
Fumigator, a cheap ... 83
Hardy fruit garden, the... 74
Horticultural club... ... 82
Lælia anceps Hilliana ... 83
,, anceps Schroederæ... 72
Market plants 76
Moore, the late Mr. T. 81, 86
Nephthytes liberica ... 81
Obituary :—
Dixon, Mr. E. P. ... 87
McElroy, Mr. J. F. ... 87
Wilder, Hon. M. P. ... 86
Orchid houses, the ... 82
,, notes 79
Peach and Nectarine, the, as wall trees 78
Pears, selected list of 100 84
Pelargonium leaves, black spots on 83
Picotee, derivation of the word 83
Plants and their culture 82
Salvia rutilans 83
Societies :—
National Chrysanthe-mum, the 86
Royal Horticultural ... 84
Tobacco, early varieties of 81
Turner Memorial prizes ... 81
Veitch Memorial prizes ... 81
Weather, the 88
Winter, the past, near Bournemouth 71

ILLUSTRATIONS.

Coombe Warren, the dairy at, ... 73
,, ,, garden terrace at. (See Supplement.)
,, ,, pyramidal Ivy-leaved Pelargonium at 77
Corms of Ixia, diseased 84
Fumigator, a cheap 83
Pear Comte de Lamy 85
,, Jersey Gratioli 85
,, Louise Bonne of Jersey 84
,, Seckel 85
,, Urbaniste 85

AURICULA SHOW (SCOTTISH).—Growers of the Auricula and others interested, willing to become MEMBERS of a SCOTTISH AURICULA SOCIETY, or to give their support to a JUBILEE AURICULA SHOW, will please communicate with WM. STRATTON, Annfield, Broughty Ferry.

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JOHN LAING AND CO.'S Descriptive CATALOGUE of Seeds, Plants, Begonias, Sundries, &c., is now ready, and will be sent Gratis and Post-free on application. JOHN LAING AND CO., Forest Hill, S.E.

Kent, the Garden of England.

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GEORGE BUNYARD AND CO., Maidstone.
P.S.—Send direct: no Agents.

HARDY RHODODENDRONS and AZALEAS.—The most extensive stock in the Kingdom of the finest hardy varieties known.
☞ The Rhododendrons in Rotten Row and the Botanic Gardens, Regent's Park, are supplied by
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RICHARD SMITH AND CO., Nurserymen, Worcester.

B. S. WILLIAMS begs to intimate that his ILLUSTRATED SEED CATALOGUE for 1887 has now been posted to all Customers; another copy will be forwarded to any one who may not yet have received one.

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To the Trade.
"WILLIAM THE FIRST PEAS."

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WANTED, a regular Supply of ORCHIDS, and Choice HOTHOUSE FLOWERS. Offers.
Address, G., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

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EIGHTY THOUSAND CLEMATIS, in Pots, of all the finest Double and Single Varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12*s.* to 24*s.* per dozen, strong plants. Descriptive LIST on application.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

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C. G. VAN TUBERGEN, Jun., BULB GROWER and SEEDSMAN, Haarlem, Holland, begs to announce that his CATALOGUE of the above is now ready, and may be had free on application to
Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, Crutched Friars, London, E.C.

IRELAND AND THOMSON, SEED MERCHANTS, Edinburgh, have now Posted to all their Customers their CATALOGUE of SELECT VEGETABLE and FLOWER SEEDS, GARDEN REQUISITES, &c. If not duly received, please let them know and, another copy will at once be sent post-paid.

JUBILEE BEGONIAS (Copyright). — We have just published a Chromo-Litho of 12 of our best DOUBLE SEEDLING BEGONIAS, pronounced to be the finest Floral Plate yet sent out; with Jubilee Portrait of Her Majesty. Post-free, 4*s.*
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ASPARAGUS, grand Roots for Forcing, 2*s.* per dozen, 12*s.* 6*d.* per 100; strong, for planting, 2*s.* 6*d.* per 100. SEAKALE, forcing, 2*s.* 6*d.* per dozen, 16*s.* per 100; planting, 2*s.* per dozen, 12*s.* 6*d.* per 100.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

SALES BY AUCTION.

Monday Next.—(Sale No. 7324.)

Important to the Trade and other Large Buyers.
Immense importations from Japan.

15,000 Grand Bulbs of LILIUM AURATUM, 1500 L. KRAMERI, 1500 L. LONGIFLORUM, 2000 L. SPECIOSUM ROSEUM and ALBUM, 500 L. AURATUM MACRANTHUM, 300 L. BATEMANNIÆ, L. AURATUM RUBROVITTATUM, L. HANSONI, L. LEICHTLINII, L. THUNBERGIANUM FLORE-PLENO, L. ELEGANS SANGUINEUM, &c., all in the finest possible condition.

MR. J. C. STEVENS will SELL the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY NEXT, January 17, at half-past 12 o'Clock precisely.

On view morning of Sale, and Catalogues had.

Wednesday and Saturday Next.

First-class and Dwarf ROSES, to name; Pyramid and Dwarf-trained FRUIT TREES, of sorts; STOVE and GREENHOUSE PLANTS, Hardy Ornamental SHRUBS and CONIFERS, BORDER PLANTS, LILY of the VALLEY, SPIRÆAS, DAFFODILS, GLADIOLI, LILIUMS, and other BULBS, for present planting.

MR. J. C. STEVENS will SELL the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY and SATURDAY NEXT, January 19 and 22, at half-past 12 o'Clock precisely each day.

On view mornings of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7327.)

CATTLEYA MAXIMA, grand dark variety.
ONCIDIUM LOXENSE.
CATTLEYA MOSSIÆ MATUTINA.
ANGULOA RUCKERII.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., by order of Mr. F. Sander, on THURSDAY NEXT, January 20, at half-past 12 o'Clock precisely, a splendid importation, just received, of CATTLEYA MAXIMA, grand dark variety, in fine order. This is a most free-flowering species, as many as fifteen flowers produced on a spike, which are very brilliant and dark, differing much from the ordinary long-bulbed forms from Ecuador. It is very scarce, and a most beautiful form; flowers large, dark, and fine; lip magnificently blotched and veined. At the same time will be offered a superb lot of the beautiful ONCIDIUM LOXENSE, flowers large, sepals and petals dark, with a large bright orange lip, in the way of O. tigrinum, though much brighter in colour. The plant grows like O. macranthum, and the thick spikes on plants will give some idea of its vigorous fine habit. Also a fine lot of CATTLEYA MOSSIÆ MATUTINA, a very early-flowering form; ANGULOA RUCKERII, in large and fine masses; EPIDENDRUM SCHOMBURGKII, CATTLEYA PERCIVALIANA in large masses, ZYGOPETALUM BURKEI, ONCIDIUM NIGRATUM, O. NUBIGENUM, PERISTERIA SPECIES, SCUTICARIA SPECIES from the Roraima, and many other rare and fine ORCHIDS.

On view morning of Sale, and Catalogues had.

Every Wednesday and Saturday.

SALES of GREENHOUSE PLANTS in variety, a choice assortment of English Home-grown LILIES, 600 Standard and Dwarf ROSES to name, FRUIT TREES, CARNATIONS, LILY of the VALLEY, LILIUM AURATUM, and various HARDY BULBS and HERBACEOUS PLANTS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., EVERY WEDNESDAY at half-past 12 o'Clock, and EVERY SATURDAY at half-past 11 o'Clock, consignments of PLANTS and BULBS, &c., as above.

On view morning of Sale, and Catalogues had.

Wednesday Next.

IMPORTATION of LILIES from JAPAN.

5000 L. AURATUM, 1000 L. LONGIFLORUM, 1000 L. KRAMERII, 2000 L. SPECIOSUM ALBUM and RUBRUM, L. AURATUM PICTUM and MACRANTHUM, L. CORIDION, L. BATEMANNIÆ, L. CORDIFOLIUM, and L. TIGRINUM FLORE PLENA.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION in the Sale at their Auction Rooms, 67 and 68, Cheapside, E.C., on WEDNESDAY NEXT, January 19.

On view morning of Sale, and Catalogues had.

Friday Next.

Seventeen Cases of ODONTOGLOSSUM GRANDE and LÆLIA SUPERBIENS, received direct, and for Sale Without Reserve.

MESSRS. PROTHEROE AND MORRIS will include the above in their ORCHID SALE, on FRIDAY NEXT, January 21.

On view morning of Sale, and Catalogues had.

Friday Next.

CYMBIDIUM LOWIANUM.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, January 21, at half-past 12 o'Clock precisely, by order of Messrs. Hugh Low & Co., a large quantity of Imported Plants of CYMBIDIUM LOWIANUM, just to hand, collected by Mr. Wm. Boxall.

Also in quantity, DENDROBIUM CRASSINODE, D. DEVONIANUM, D. FALCONERI, D. INFUNDIBULUM, or D. VIRGINEUM, D. THYRSIFLORUM, D. WARDIANUM, &c.

On view morning of Sale, and Catalogues had.

Orchids in Flower.—Special Sale.

MESSRS. PROTHEROE AND MORRIS beg to announce that their NEXT SPECIAL SALE of the above will take place on TUESDAY, January 25, for which they will be glad to receive NOTICE of ENTRIES as soon as possible.

Sunbury.

UNRESERVED CLEARANCE SALE.

By order of Mr. H. Willmer, who is absolutely relinquishing the Business.

ALTERATION of DATE to TUESDAY, February 1, 1887.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, The Springfield Nursery, Sunbury (close to the Railway Station), on TUESDAY, February 1, at 12 o'Clock precisely, the whole of the well-grown NURSERY STOCK, in capital condition for removal, including 1500 Common Laurels, 2 to 4 feet; 500 Green Hollies, 2 to 6 feet; very fine Horse Chestnuts, 6 to 18 feet; 500 Lombardy Poplars, 3 to 16 feet; Aucubas, Spruce Fir, Conifers in variety; 1000 Tritoma Uvaria, 1500 Gentiana acaulis, and other stock.

May be viewed one week prior to the Sale. Catalogues may be had on the premises; and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C., and Leytonstone.

N.B.—The GLASS ERECTIONS and GREENHOUSE PLANTS will be SOLD IN THE SPRING.

Hertford.

PRELIMINARY NOTICE.

Absolute Clearance Sale, by order of Messrs. Francis Bros., who are relinquishing the Business.

Highly Important Sale. To Noblemen, Gentlemen, and the Trade.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to SELL by AUCTION, on the Premises, the several Nurseries at Hertford (excepting the Home Nursery, which has been disposed of privately in an entirety), on MONDAY, February 14, and following days, the whole of the extensive NURSERY STOCK, which is in an excellent and thriving condition.

Further particulars will appear next week.

ORCHIDS—ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,
THE VINEYARD and NURSERIES, GARSTON,
NEAR LIVERPOOL,
have to state that a
NEW EDITION OF THEIR ORCHID CATALOGUE
is now ready, and will be sent Post-free on application.

WANTED, to Lease for a term, GLASS HOUSES (forcing), with Cottage, &c.

Reply, with particulars, to JAS. BAILEY, 11, Beresford Road, Gravesend, Kent.

London, S.W.

TO BE SOLD, at a GREAT SACRIFICE.

To Orchid, Cut Flower, Fern, or Palm Growers.
Excellent Opening for Two Persons.

TO BE SOLD, a well-established NURSERY, with nearly 20,000 feet of Glass, Stabling, detached Residence, and 1 Acre of Ground. Nominal rent of only £26. Price for whole, £1200, payable by arrangement.

Apply to PROTHEROE AND MORRIS, 67 and 68, Cheapside, E.C.

Middlesex.

TO CUT-FLOWER GROWERS.

TO BE SOLD, at a sacrifice, a well-known MARKET NURSERY, with 25 Greenhouses, 10 Pits, &c., containing about 15,000 feet of Glass. Moderate Rent (£47 nett).

Full particulars and terms on application to Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, E.C.

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An opportunity seldom offered for such a most desirable, compact Estate as above. Stock, all as it stands included, price £2500.

A Bargain, of which a part can remain at 5 per cent. interest.

Address DELTA, 41, Wellington Street, Covent Garden, London, W.C.

TO BE SOLD, that fine large NEW ZEALAND CONSERVATORY, now standing at the Colonial Exhibition, South Kensington, containing about 10,000 feet of Victoria Dry Glazing, easily removable, for re-fixing—would make a splendid Vinery—160 feet long, 34 feet wide, 24 feet high. Value £500. Also, the NATAL CONSERVATORY, complete with Boiler and Hot-water Pipes, 44 feet long, 25 feet wide and 19 feet high, containing about 3000 feet of Victoria Dry Glazing, easily removable. Value £300.

See CATALOGUE of GENERAL SALE for January 19, 1887.
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TO LET, a FLOWER and FRUIT GROWING BUSINESS. Genuine good opportunity. Capital, £200 to £300. Profits, £100 with a good grower.

Address A. N., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

TO LET, a small FRUIT and FLORIST BUSINESS, near Oakham, Rutland; five Glass Houses, and nearly 2 acres of Fruit and Nursery Stock at valuation. Apply, H. CLARK, Ayston Hall Gardens, near Uppingham.

PROTHEROE AND MORRIS, HORTICULTURAL MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application

IMPORTANT to ORCHID GROWERS.

Special offer of Light Brown ORCHID PEAT, full of Pure Bracken fibre; also a good GENERAL PEAT. Quotation with sample on application to
THE PEAT ASSOCIATION,
10, Cullum Street, London, E.C.

Landscape Gardening.

H. F. MALLER (of the firm of B. Maller & Sons), late Pupil of the Crystal Palace School of Landscape Gardening, is prepared to FURNISH PLANS, or undertake any kind of the above work.—61, High Street, Lewisham.

HORTICULTURAL SOILS, MANURES, SUNDRIES, and BERKSHIRE POTTERY. Catalogue free per post, of every Horticultural Requisite.

BENJAMIN FIELD, F.R.H.S. (Son-in-law and Successor to J. Kennard), Swan Place, Old Kent Road, London, S.E.
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Rhubarb and Seakale Forcing.

STRONG WELL-MADE POTS for the above.—GARDEN POTS, ORCHID POTS, ALPINE POTS, FERN PANS, SEED PANS, and all other GARDEN POTTERY of the best quality can be supplied by
J. MATTHEWS, Royal Pottery, Weston-super-Mare.
Price List Free.

CALADIUM ARGYRITIS.—Sound dry bulbs, 6*s*. per dozen. Trade price on application.
TURNER BROS., Green Hill Nursery, Atherton, Liverpool.

PLUM STOCKS.—A few thousands to spare, carefully trimmed and with fibrous roots.
WILL TAYLER, Osborn Nursery, Hampton, Middlesex.

Notice.

King's Acre Nurseries, Hereford (Established 1785).

JOHN CRANSTON begs to announce that, having PURCHASED THE BUSINESS, together with the most valuable portion of the stock, from "Cranston's Nursery and Seed Company Limited," these Old-established Nurseries will, on and after NOVEMBER 2, 1886, be carried on by him under the name of
"JOHN CRANSTON AND CO."
King's Acre, Hereford.—October 1, 1886.

JAMES L. BOYSON,
ROSE GROWER, Caen (Calvados), France.

My LIST of the 72 NEW ROSES brought out this autumn is now ready, and will be sent Free on application.

Carefully hardened off Plants will be ready for delivery in March, 1887, as well as a fine stock of "Her Majesty" H.P.; "American Beauty," H.T.; "The Bride," T.; "Clara Cochet," H.P.; and "Comtesse de Frigneuse," T.

My complete CATALOGUE of over 1200 of the best varieties, with raiser's name and date of sending out of each variety, free for 7*d*. in stamps.

A few thousand SEEDLING BRIERS still unsold.

OWEN'S "IMPERIAL" BEGONIAS (TUBEROUS).

New and distinct strain; best in the universe.
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SEED, Double or Single, 1*s*., 1*s*. 6*d*., and 2*s*. 6*d*. per packet.
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ROSES 20 ACRES.

Well-rooted, many shooted, truly named, of matured vigorous growth, and of the best kinds. BUSHES, R. S. & Co.'s selection, 8*s.* per dozen, 60*s.* per 100. STANDARDS, 15*s.* per dozen, 105*s.* per 100. Packing and Carriage Free for cash with order.

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STANDARDS for Avenue or Street Planting, straight stems, fine heads, good roots.
LIMES, best red-twigged variety, 12 to 14 feet, and 14 to 16 feet.
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Very cheap by the dozen or hundred.
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ERICA SCABRIUSCULA, in flower, 12*s.* per dozen.
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Full LIST on application.
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	Per bushel.—*s.*	*d.*		Per bushel,—*s.*	*d.*
Sangster's Improved No. 1	9	0	Nelson's Vanguard ...	11	0
Bishop's Longpod, dwf.	9	0	McLean's Blue Peter ...	12	0
Day's Early Sunrise ...	8	6	,, Princess Royal ...	9	0
Kentish Invicta ...	8	6	,, Prince of Wales ...	12	0
Laxton's William the First	10	0	,, Premier	12	0
,, Fillbasket ...	10	0	,, Little Gem ...	13	0
Paradise Marrow ...	8	0	British Queen... ...	12	6
Ne Plus Ultra	10	6	Fairbeard's Fortyfold ...	12	6
			Pride of the Market ...	11	0
			Prizetaker	8	6

BEANS.

	Per bushel—*s.*	*d.*		Per bushel—*s.*	*d.*
Harlington Windsor, large	9	6	Green Longpod	7	0
Green	10	0	China dwarf Kidney ...	12	0
			Red Speckled	10	0

CABBAGE.

	Per cwt.—*s.*	*d.*		Per cwt.—*s.*	*d.*
Cocoa-nut, 1*s.* 4*d.* per lb.	—		Large York	80	0
Nonpareil	84	0	Drumhead, RED Pickling, per lb.	1	3
Stone's Early Sprotsboro, true	84	0	Colewort Rosette, per lb.	1	6
Early York	80	0	Golden Globe Savoy, p. lb.	1	3

	Per cwt.—*s.*	*d.*		Per cwt.—*s.*	*d.*
BORECOLE, dwarf green curled ...	63	0	PARSNIP, Sutton's Student	32	6
,, Chou de Milan, per lb.	1	3	CARROT, Early English Horn	75	0
BEET, Whyte's purple or black, per lb. ...	1	0	,, Altringham ...	60	0
BROCCOLI, Wilcove's late white, per lb. ...	2	3	,, James' Scarlet ...	60	0
BRUSSELS SPROUTS, best	75	0	CRESS, fine curled, per bush.	11	6
,, Aigburth, per lb.	1	4	,, Australian, per lb.	0	7
CUCUMBER, Stockwood long ridge, p. lb.	5	0	ONION, Nuneham Park, true, per lb.	1	9
PARSLEY, plain, p. bsh.	11	0	SPINACH, round, per bush.	7	6
,, finest curled, per bush.	17	6	,, prickly, per bush.	6	6
RADISH, Red Turnip, per bush. ...	23	0	TURNIP, Robertson's Golden Ball, p. bush.	22	0
,, White Turnip, per bush	23	0	VEGETABLE MARROW, Long Green, per lb.	2	6
,, Long Scarlet, per bush	22	6	THYME, English, per lb.	3	0
,, Wood's Early Frame, p. bush.	24	0	MANGEL, Giant Mammoth Long Red ...	40	0

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NEW CATALOGUE of **88 pages**, consisting exclusively of **FLOWER SEEDS**, in which everything is fully described, and many **illustrated.** The Catalogue contains no less than

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Grape Vines and Strawberries (in pots).
FRANCIS R. KINGHORN offers very fine stocks of the above in all leading varieties, true to name. LIST and Prices on application.
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VEGETABLE SEEDS from selected stocks, FLOWER SEEDS from prize strains, AGRICULTURAL SEEDS of guaranteed purity and growth, superior in quality, and moderate in price. Collections for any sized Garden, from 5*s*. to £5 5*s*. Write for CATALOGUE, free on application. Seed Orders delivered free by rail and parcel post.

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THE QUEEN'S SEEDSMEN BY ROYAL WARRANT,
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Begs to offer the following, of which he holds a large stock :—

ALDER, 2 to 3 feet, 25*s*. per 1000; ditto, 3 to 5 feet, 30*s*. per 1000.
BIRCH, 3 to 4 feet, and 4 to 6 feet, 30*s*. to 40*s*. per 1000.
HORNBEAM, 4 to 6 feet, 40*s*. per 1000.
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SCOTCH FIR, very fine stuff, from 1 to 2½ feet, 12*s*. to 25*s*. per 1000.

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SEAKALE, extra fine, for planting, 6*s*. to 8*s*. 100.

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EXTRA STRONG.
APPLES, PEARS, PLUMS, and CHERRIES, 18*s*. to 24*s*. per dozen.
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STANDARD APPLES, PEARS, and PLUMS, 12*s*. per dozen.

Free on Rail S.E.R or S.W.R.

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GARLIES MITCHELL, Nurseryman, Stranraer.

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LANDSCAPE GARDENERS, HORTICULTURAL VALUERS, and NURSERYMEN,
HAVE THE BEST AND CHEAPEST STOCK OF HARDY
ORNAMENTAL TREES, FOREST TREES, AND FRUIT TREES,
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A Specialty.
RHODODENDRONS, grown in sandy loam.—Thousands of Rhododendron ponticum, catawbiense, hybridum, and all the choicest named varieties. Magnificent plants, 1, 2, to 3 feet, beautifully set with buds. Price per dozen, hundred, or thousand, on application to
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To the Trade.
WATKINS AND SIMPSON have now Published their WHOLESALE CATALOGUE of VEGETABLE and FLOWER SEEDS, &c., for the coming season. Copies may be had on application. Any Customer not having received one will oblige by letting us know, when another shall at once be posted.
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GREAT SACRIFICE to Clear Land.—Strong Standard and Pyramid-bearing Fruit Trees of best sorts, and fine Evergreen Ornamental Trees and Shrubs, Extra Transplanted, &c. Large Discount off usual prices for Cash. See LIST. Also FOREST TREES in quantity.—Apply,
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FIFTY JERSEY ROSES for 21*s*.

Special Offer.
ISAAC MATTHEWS AND SON have for Sale 500,000 RHODODENDRONS, varying in size from 4 to 6 inches up to 2 to 3 feet—Cunningham's White, Jacksoni, caucasicum, pictum, Seedling Hybrids, Hybrid ponticum, and named varieties; good bushy plants. HOLLIES, CONIFERS, FOREST TREES in large quantities; AUCUBAS, YEWS, and other Nursery Stock. CATALOGUES now ready, and may be had, gratis and post-free, on application to the Nurseries, Milton, Stoke-on-Trent.
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Orders must be addressed to Messrs. WATSON AND SCULL, 90, Lower Thames Street, London, E.C.

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We have a small quantity of our Giant Marrow Pea to offer this season. It is the finest late Exhibition Pea ever sent out, Pods having been submitted to the Editor of the *Journal of Horticulture*, grown by Mr. Muir, of Margam, which were 7 *inches in length and* 1¼ *inch wide.* The pods are large, dark green, and well filled with large Peas of the finest quality. It is an abundant cropper—height 6 feet—should not be sown too early.

Price 2*s*. 6*d*. *per* 1 *Pint Sealed Packet*
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MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, January 21, at half-past 12 o'Clock precisely, by order of Messrs. HUGH LOW & Co., a large quantity of Imported Plants of CYMBIDIUM LOWIANUM, just to hand, collected by Mr. Wm. Boxall.

Also in quantity, DENDROBIUM CRASSINODE, D. DEVONIANUM, D. FALCONERI, D. INFUNDIBULUM, or D. VIRGINEUM, D. THYRSIFLORUM, D. WARDIANUM, &c.

On view morning of Sale, and Catalogues had.

To the Trade.
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Seed Growing Establishment, Wisbech.

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JOHN LAING AND CO., Seedsmen, Forest Hill, S.E.

CHR. LORENZ,

THE LARGEST AND OLDEST GERMAN SEED HOUSE, ERFURT.

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for Owners of Gardens and Amateurs,
of the Largest and Oldest Seed House on the Continent.

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with more than two hundred beautiful Engravings,
GRATIS AND POST-FREE
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Postage for Letters to Germany, 2½*d.*
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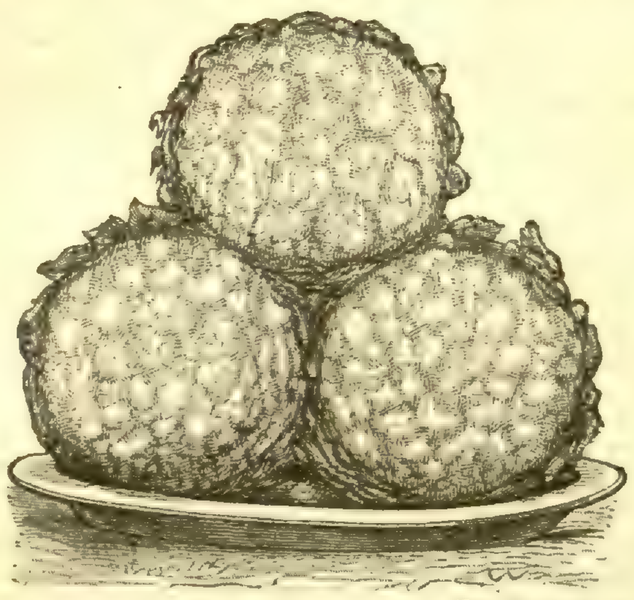

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Our **LITTLE BOOK FOR 1887** has been posted to all our Customers. A few copies still remain, which may be had at 1s. each, *post-free.*

As a Supplement to the "GARDENERS' CHRONICLE" for next week, Jan. 22, will be published an Ink-Photograph of the ROCK GARDEN at Messrs. Cheal's Nursery.

THE

Gardeners' Chronicle.

SATURDAY, JANUARY 15, 1887.

THE PAST WINTER NEAR BOURNEMOUTH.

AMONG the facts which would seem to have most interest in their bearing on the meteorology of a country are those which result from a comparison of the effects of winter cold on the vegetation of different regions.

These effects are not always apparent until some months have passed after the end of a winter; but as a sufficient time has now elapsed since the cold of last winter (1885-86) acted on the plants exposed to it, reports made by competent observers as to its effects in various parts of the country may be regarded as reliable, and by their comparison one with the other ought to add materially to our knowledge of some of the more important meteorological relations.

More than one element, however, must be here taken into consideration. Besides the variable factors of temperature and moisture, there are others which are constant for each place, and which are scarcely less important than the former. One of these is the nature of the soil. The same amount of cold will have very different results according as it exerts itself on the vegetation of a stiff clay soil, or on that of a light sandy one. Exposure to high drying winds on the one hand, or shelter from their influence on the other, becomes also an important element in the comparison; while many plants which flourish in the neighbourhood of the sea will succumb in more inland districts. It will thus be seen that the problem set before us, of instituting a comparison which shall be free from fallacy, is by no means a simple one.

As a contribution to its solution it may not be without interest that I should give the results of my observations on the effects of the cold of last winter on some of the cultivated vegetation of this district. In doing so I shall confine myself to an enumeration of the shrubs and trees

grown in my own garden, and usually regarded as more or less tender, but which passed nearly or quite uninjured through the winter.

Ardmore.

The locality included in these notes is a little to the west of Bournemouth. It is protected by rising ground more or less covered by Scotch Fir and Pinaster, from the north and east, whilst the proximity of the sea must exert no small influence on certain forms of vegetation. The lowest temperature registered here during the last winter (1885—86) at a height of 10 feet above the ground, was 21° Fahr., while that of 22° Fahr. was continued without interruption for several days in succession.

The following enumeration includes only shrubs and trees, for these, having permanent woody stems, are far better indices of climatal action than herbaceous plants, whose stems for the most part naturally die down at the approach of winter.

The plants here recorded vary considerably in their general sensitiveness to cold, and some of them can perhaps be scarcely called tender, but I believe that there are none included in the list, which in the midland and northern counties of England would, if unprotected, pass without destruction or serious injury through such a winter as that of 1885—86.

The plants enumerated are all grown in the open border, and I make no mention of such as have had the protection of a wall. It should be stated, however, that a stout mulching of litter was spread over the borders in the preceding autumn, more with the view of retaining moisture in the light, sandy soil, than as a protection against cold.

These notes would perhaps be more interesting if I could place in contrast with the plants which have escaped serious injury from the cold, a list of such as have succumbed to it; so complete, however, has been the immunity here enjoyed that I can name among the shrubs grown in my garden only one which had not been able to hold out against the cold of winter. This exception is afforded by the Californian Carpenteria, which was killed, though I am by no means sure that this result ought not to be laid to the account of a recent transplanting, and to the fact that the plant had not time to establish itself before the setting in of the severe frost.

Magnoliaceæ: Magnolia grandiflora — Southern United States; M. obovata var. Lennei—Japan; Drimys Winteri—South America.

Berberidaceæ: Nandina domestica—China.

Pittosporaceæ: Pittosporum Tobira—Japan; P. tenuifolium—New Zealand.

Cistaceæ: Cistus ladaniferus, C. lusitanicus, C. salvifolius, C. albidus, C. crispus, C. purpureus, Helianthemum formosum—Southern Europe.

Tamaricaceæ: Tamarix sinensis (slightly nipped, now quite recovered)—China.

Flacourtiaceæ: Azara microphylla—South America.

Ternstræmiaceæ: Camellia japonica—China.

Rutaceæ: Choisya ternata (young shoots slightly nipped, plants now quite recovered)—China.

Xanthoxylaceæ: Skimmia japonica, S. oblata—Japan; S. laureola—Himalaya.

Aceraceæ: Acer palmatum and its varieties—Japan.

Sapindaceæ: Xanthoceras sorbifolia — Northern China.

Celastraceæ: Staphylea colchica—Caucasus.

Rhamnaceæ: Ceanothus azureus and its variety Gloire de Versailles—North America.

Leguminosæ: Acacia dealbata—Australia.

Rosaceæ: Spiræa Reevesiana, S. Thunbergii, Exochorda grandiflora — China; Rhodotypus kerrioides—Japan.

Pomaceæ: Raphiolepis ovata—China.

Myrtaceæ: Myrtus communis—Southern Europe; Eugenia Ugni, E. apiculata—South America.

Onagraceæ: Fuchsia coccinea, var. coralloides, and others—Chili.

Escalloniaceæ: Escallonia macrantha, E. montividensis, E. Philppina—Chili.

Connaceæ: Griseainia litoralis—New Zealand.

Caprifoliaceæ: Abelia triflora (terminal shoots cut back by the frost: plant now quite recovered)—Himalaya; Viburnum awafurki—Japan.

Compositæ: Eurybia Gunni—Australia; Olearia Haastii—New Zealand; Cassinia fulvida—Australia.

Ericaceæ: Erica mediterranea—Southern Europe and South-western Ireland; E. codonodes—Southern Europe; Andromeda japonica — Japan; Arbutus Unedo and varieties—Southern Europe and South-western Ireland; Arbutus Andrachne — Southern Europe; Azalea mollis—Japan; A. glauca—North America; Vaccinium pennsylvanicum — North America.

Aquifoliaceæ: Ilex latifolia—Japan.

Scrophulariaceæ: Veronica speciosa—Andersonian hybrid, including the dark crimson "imperialis;" V. salicifolia, V. Traversi, V. Lyalli, V. salicornioides—New Zealand. (In some of the specimens of these varieties the young branches were killed, while on the greater number the cold had no effect. None now show any trace of injury.)

Labiatæ: Rosmarinus officinalis, Phlomis fruticosa—Southern Europe.

Solanaceæ: Fabiana imbricata—Chile.

Gentianaceæ: Desfontainea spinosa—Peru.

Oleaceæ: Olea ilicifolia (the young shoots nipped, the plants now quite recovered), Osmanthus ilicifolia—China; Chionanthus virginica—North America.

Lauraceæ: Laurus nobilis — Southern Europe; Laurus indica—Madeira.

Coniferæ: Pinus insignis—California; Sciadopitys verticillata — Japan; Cupressus macrocarpa—California; Thuiopsis dolobrata — Japan; Araucaria imbricata—Chili.

Palmaceæ: Chamærops excelsa var. Fortunei—China.

Smilaceæ: Danaë racemosa—Grecian Archipelago.

Graminaceæ: Bambusa Metake—China; Arundinaria falcata—Himalaya. *Geo. J. Allman, Ardmore, Parkstone, Dorset.*

Plants New or Noteworthy.

DENDROBIUM × VANNERIANUM, *hyb. art.*

Mr. W. Vanner, my excellent correspondent of Camden Wood, whose bright coloured, shining, strong Orchids denote excellent management, has just surprised me with a lovely novel form. It is the product of a cross between Dendrobium moniliorme (japonicum) and D. Falconeri. I hasten to dedicate it to this gentleman, as a mark of gratitude and due acknowledgment.

Mr. W. Vanner says:—"The plant is small—between four and five years old. The bulbs are intermediate in character between those of the parents. The longest bulb is 11 inches long; the leaf sent is of this year's bulb. There are four flowers open, both on this year's and last year's bulbs. The bulbs continue growing the second year, somewhat in the manner of Denbrobium Falconeri, but as yet they have not shown any disposition to branch."

A careful pencil sketch shows the joints of the stem wider at the top, but only gradually, not suddenly, so that the nodes are not abrupt at all. Then a leaf and three flowers terminate the stem, all which came to me in the very best state, just as if packed under the eyes of Mr. W. Lee himself.

The leaf is lanceolate, over 2 inches long, half an inch wide at its widest place. The four flowers remind me of those of Dendrobium transparens. As in that species, they appear in different extension, one being noticeably larger than the two others, the sepals of which do not much exceed 1 inch in length. The well marked mentum is blunt angled. Sepals lanceolate, with delightful thin purple margin. Petals oblong-acuminate, white, with the apicular part of fine purple. Lip most distinctly rhombic; ground colour white, apicilar and basilar partly purple, disc light sulphur-coloured, and with a very fine great dark purple dash in the middle of the upper part, running out by a dark purple line to the base; column white, with some purple lines in front, and a little cavity at the base. I presume the large flower is from the elder bulb. *H. G. Rchb, f.*

Catasetum costatum, *n. sp.**

A curious Catasetum, with yellowish sepals and petals. It was kindly sent by Mr, F. T. Tautz, Studley House, 289, Goldhawk Road, Shepherd's Bush, London, W. It comes from one of Mr. F. Sander's most recent importations. and its decurved, dense inflorescence, with costate lips, would seem quite peculiar, provided Cataseta were not *des têtes carrées*, which forbid any judgment. The lip might be compared to that of Catasetum semiapertum if the conus were not much longer. Its side-lobes are erect. They are triangular, the superior border being ciliate. The mid-lobe is lower, so that the mouth is contracted. It goes out into a low, blunt, small triangle, standing over the long, blunt conus, so very remarkable by the presence of some lighter ribs running at each side, but which are not very conspicuous as long as the lip is fresh. It is very remarkable. *H. G. Rchb. f.*

Lælia anceps Schrœderæ, *Hort. Sand.*

A very grand variety of Lælia anceps. Sepals lightest white-rose; petals rose, with purple tips; lip with a brown disc, a yellow area at each side, a fine warm purple border to the side lobe, and an exceedingly dark glorious blackish-purple anterior lobe. This splendid plant is now in the possession of Baron von Schrœder, who obtained it at St. Alban's, at Mr. F. Sander's. It was dedicated to Baroness von Schrœder, a warm friend and a *connoisseur* of Orchids. No doubt such studies are easy at The Dell, in such a grand collection. *H. G. Rchb. f.*

The Alpine Garden.

HIMALAYAN SAXIFRAGES.

Of the Saxifrages inhabiting the Himalayas, many of which are very beautiful plants, few have as yet found their way into cultivation, notwithstanding the constant exchange between India and the mother country. Of those already in our gardens perhaps the showiest is S. purpurascens, although it is rarely seen flowering with profuseness. It thrives best in a shady moist position; but when exposed it seems to lose vigour, and rarely flowers at all. S. diversifolia, with its large golden-yellow flowers and pretty autumn-tinted leaves, does best in a damp place, such as one may find close to a running stream or in a bog or aquatic garden. It continues in flower all through August and September—indeed, not unfrequently until the severe frosts in October; even S. granulata, so common on our meadows at home, appears to be plentiful in the Himalayas also. Among others may be mentioned S. odontophylla, a species with reniform leaves; pallida, a pretty dwarf species; fimbriata, a procumbent species, with densely leafy stems about a foot long, with a few largish yellow flowers at the summit; flagellaris, and the var. mucronulata, with handsome rosettes, not unlike a Houseleek; imbricata, with a habit like squarrosa; besides umbellata and Brunoniana. None of those following, so far as we are aware, are in cultivation, many of which, we are told, are, however, very desirable:—S. sibirica, filicaulis, hispidula, pilifera, ramulosa, lychnitis, viscidula, aristulata, saginoides, nutans, corymbosa, strigosa, micrantha, perpusilla, microphylla, stella-aurea, Jacquemontiana, hemisphærica, brachypoda, &c. *D.*

* *Catasetum costatum*, n. sp. — Racemo deflexo densifloro grandifloro; sepalis lanceis acuminatis, tepalis bene latioribus; labello elongato laciniis lateralibus angulatis superne ciliatis, antice non ciliatis, margine anticæ laciniæ humillimo obsolete triangulo, sacco triangulo costis quisbusdam transversis ornato; androclinio acuto marginibus lobulato setis validis. *H. G. Rchb. f.*

ADIANTUM FARLEYENSE.

YOUR correspondent, "W. G." (p. 756, Dec. 11, 1886), appears to be under the impression that this beautiful Fern was received from Jamaica. This is evidently an error. The only plants seen in Jamaica came originally from England, and this island, although so rich in Ferns, cannot claim so distinguished a member as this amongst its productions. In the *Gardeners' Chronicle*, 1866, p. 730, a history as well as description of Adiantum Farleyense were fully given by the late Mr. Moore, and practically there is little further to add. In March of last year I had the pleasure of visiting Farley Hill in Barbados, the residence of Sir T. Graham Briggs, Bart., and I then became acquainted with all that is known there respecting the appearance of this plant. It was found as a chance seedling growing on a brick wall, and it was looked upon as a hybrid between A. tenerum and A. trapeziforme. Whether this is right or not I am unable to say. Large plants of both these species were growing close by, and Sir T. Graham Briggs mentioned, and pointed out to me, small seedling plants which were still being produced, some unmistakably of Farleyense form and others more nearly resembling the form of tenerum. The theory that A. Farleyense is a hybrid between the two species mentioned above derives some support from the fact that the delicate colouring of its young fronds very much resemble that of A. trapeziforme; but, on the other hand, in habit and texture it is much more delicate than either of its supposed parents, and it has gained nothing except colour from A. trapeziforme. It is the opinion of Mr. Baker and in spite of what I saw and heard at Barbados I am inclined to agree with him—that A. Farleyense is after all only a well marked almost barren variety of A. tenerum. He has wild specimens of A. Farleyense from Woodland Water-drop at Montserrat an island some 200 miles north of Barbados, where also A. tenerum is found. These were contributed by Mrs. Sturge in 1879. *D. Morris, Assistant Director, Royal Gardens, Kew.*

—— The correspondence which has recently appeared in the *Gardeners' Chronicle* has interested me, and I am surprised not to have seen, as I fully expected, a satisfactory reply to the inquiry of your correspondent as to "whether Farleyense bore 'spores.'" The origin of the species was as follows:—About twenty years ago a gentleman named Daniel, since deceased, but then residing at Stoodleigh Court, near Tiverton, Devon, received from a friend at Farley Hill, a case of plants which, in transit, became much damaged; a portion of its contents was preserved, the remainder was thrown underneath a shelf in the stove, and ultimately from the *débris* was taken this Adiantum. Subsequently a plant of it was given by Mr. Daniel to the late Mr. Robert Veitch, of Exeter, and by him, shortly after, it was exhibited at a flower show held at Wellington, Somerset; there I first saw it, and can well remember with what anxiety I endeavoured to become its owner; however, it was "not for sale." Soon after I tried to obtain a plant from Stoodleigh, but failed; however, I was presented by the gardener with a frond bearing a quantity of spores, from which my then gardener, Mr. Coles, succeeded in raising a large number of plants; about the same time a frond, also bearing spores, from the original plant, was given to Mr. Veitch, by whom a quantity of plants was also raised, and these were advertised in the *Gardeners' Chronicle* and other horticultural papers for sale, and a considerable number, if not the whole of them, were sold, having, I believe, passed into the hands of Mr. B. S. Williams and Messrs. E. G. Henderson & Son for distribution, but to my dismay and regret, and Mr. Veitch's loss, it was subsequently discovered that, instead of Farleyense, they proved to be an unknown variety. My friend, Mr. Shirley Hibberd, happening at that time to be spending a few days in the West of England, paid me a visit, and was shown the plant, by whom it was then and there named "scutum," and is so known to this day. I have grown and seen large numbers of the original variety (Farleyense) from that time (with short intervals) up to this date, but I have neither seen nor heard of it having borne spores, neither do I believe it ever has done so; at least, that the true variety has only been grown by division, and not from spores. *J. B. Saunders, East Cliff, Teignmouth, Devon.*

FIG. 15.—THE DAIRY, COOMBE WARREN. (SEE P. 76 AND ANTE, P. 39.)

CULTURAL MEMORANDA.

CYCLAMENS.

THESE useful, showy, and free-flowering plants play an important part in the embellishment of the conservatory, house, &c., during the winter and early spring months. The varieties of persicum vary in colour from pearly-white to peach and rosy-crimson, the flowers showing most effectively above the dark green and prettily blotched leaves. The plants grow more sturdily, and consequently flower more profusely when grown in a position near the glass, and in a temperature of 50°. They will be much benefited by receiving frequent applications of tepid

diluted liquid manure at the roots during the growing and flowering periods.

Poinsettias.

These plants, by reason of their crimson bracts, are very effective when intermixed with flowering plants and Ferns either in a stove or warm conservatory. When growing and in flower, the plants should be kept moist at the roots, but when they have done flowering, water should be gradually withheld, and the plants put to rest under the stage, in the stove, or any out-of-the-way place where the temperature is not below 50° until April next, when they should be cut back, placed in heat, and watered. And as soon as they push into growth, cuttings should be taken off with a heel of the old wood attached and be inserted singly in 3-inch pots filled with fine loam and sand in equal parts, and then plunged in bottom heat near the glass, where they will soon root. *H. W. Ward.*

Iris reticulata.

This Iris is a desirable plant for flowering in pans, in small groups of six or nine, in the early spring months; succeeding well even when moderately forced into flower at a very early period of the year. Unlike the larger Spanish or English Irises it has narrow leaves, and small flowers of a pleasing dark purplish blue and yellow colour. It is a very desirable plant for the early spring greenhouse.

Parrot Tulips.

For grotesque shape and vivid, strange combination of colour few flowers equal the Tulips in commerce offered under this name and sometimes called "Dragon Tulips." The sepals are long, laciniated, most irregularly twisted, &c., and with remarkable colourings; nearly always bright and showy. It is difficult to imagine how these singular flowers originated, unless they are descendants of Gesner's cut-sepaled species, introduced from the Levant during the latter half of the sixteenth century. Parrot Tulips succeed well in pots, and in the open border, though they are not adapted for very severe forcing. Three or four in a pot, prove very showy. *William Earley, Ilford.*

Early Peas.

In order to secure gatherings of green Peas towards the end of May or early in June next sowings of Ringleader and William I. should be made forthwith, in large 60-sized pots three parts filled with light mould, putting about nine Peas in each pot and covering them with a like description of soil, Then put the pots into an early vinery or Peach-house, and as soon as the haulms have made a couple of inches of growth they should be gradually hardened off before being transplanted in rows 4 feet apart on a south border towards the middle of next month, weather permitting of the work being done at that time, sticking them at the same time, and, as a protection from frost and wind, a few Spruce boughs should be stuck firmly in the ground on either side the haulms for a week or ten days, *H. W. Ward.*

The Hardy Fruit Garden.

GENERAL REMARKS.

Through the continued severity of the weather—we registered 24° of frost on January 1, with 12 inches of snow lying on the ground—nearly all work has been greatly hindered. Pruning has been forwarded as much as possible, taking advantage of the warmest part of the day, and manure has been wheeled to the fruit borders and quarters.

Mixed Planting.

I am an advocate for the system of planting a variety of fruit trees round the vegetable quarters, and where the borders, as here, were occupied with very aged and almost worthless Apple trees, which stood about 20 feet apart, on purpose to renovate these rows of trees without clearing all away, young trees on the Paradise stock were planted between these, using plenty of good fresh loam with a little rotten manure added, and as they got established and began to bear, a few of the old trees were grubbed up annually, their places being filled by young ones; great care being taken to grub out the whole of the old roots. It is, I think, a complete waste of time and trees, to plant in the worn-out soil that has been occupied by trees for a great number of years. The old Apple trees are now all gone and the borders are filled with a stock of healthy fruiting young trees; between these are planted Gooseberries, which are very useful to gather from, for purposes of bottling, &c; and round some of the kitchen garden quarter are planted pyramid Pears and bushes of Currants, that are netted over for late use. The sorts employed for this purpose are White Dutch, Raby Castle, and Cherry Red; the last named variety I can highly recommend, being the largest fruited that I am acquainted with; it hangs for a long time, and is good both for exhibition and dessert. Although an ugly grower, it is a variety I would advise every one to obtain, as it will give much satisfaction.

Renovating Old Orchard Trees.

Good varieties of old Apple trees may be brought from a state of ill-health and unfruitfulness to a healthy and fruitful condition by cutting a trench round them 2 feet wide and 12 inches deep, and about 8 feet out from the stem; returning the turf well chopped up to the bottom of the trench, with a little rotted dung added, laying all the fibrous roots carefully into the new soil, which former should have been taken care of in cutting the trench; then fill in, making it firm by treading, and sow the patches of soil with fine grasses as recommended in a former Calendar. This system has been pursued here for many years, especially with trees of Blenheim Orange, and with the greatest success, and we now obtain crops of fine fruit from trees that formerly bore fruit not worth the gathering. *Edward Ward, Hewell, Bromsgrove.*

Notices of Books.

British Orchids. By A. D. Webster. (Published by the Author, Llandegai, Bangor.)

This is a welcome and very useful book for all who are interested in the culture of British Orchids, and probably it is the first work with so special a devotion to the subject. We find a variety of interesting as well as practical matter, extending over rather more than one hundred 8vo pages. The four introductory chapters are devoted respectively to structure, cultivation (generally treated), fertilisation, and classification and etymology; a chapter is then given to each of the sixteen genera as named in Hooker's *Manual*, the last of which, on Cypripedium, concludes with an account of the enemies of this and other Orchids; the following chapter is on British distribution, and the book closes with indices and a glossary of terms. Special remarks are given on culture under each species, with much helpful information on the natural conditions of growth. Six of the species are well illustrated, and nine others are represented by single flowers on the same plate, though not too clearly perhaps; and a plate is given to exhibit the means of pollination, or fertilisation as it is expressed by some authorities. Spiranthes Romanzoviana is from the pencil of Mr. F. W. Burbidge, and is accompanied by all the interesting information concerning it. We have already expressed our surprise at Mr. Webster's statement that "There are few plants that have received less attention, and about which greater ignorance prevails, than our native Orchids;" and we read again in the preface that these plants are neglected; but surely there are few intelligent cultivators who do not grow, or try to grow, as many as they can get.

Most of the merit and value of this book is due to its cultural information, which is all the more valuable as resulting from the author's own long experience. The instructions are good and reliable. It would be well if dealers took a hint from the remarks that are made on the necessity of having good uninjured roots to commence with. We join with the author in condemning the cruel treatment of Cypripedium calceolus, for instance, which we have received in a practically dead condition. It is a primary need that specimens should be as entire and perfect as possible, and the recommendation is here made that cultivators should insist upon receiving only such plants as have uninjured roots, or, better still, those that have been grown for a couple of years.

Failures are often traceable to a bad beginning. Cultivators should be very careful in taking up their own roots, but we do not quite agree with the author in his opinion that a hand-fork is preferable to the garden trowel for the purpose, because, in our hands, it is too liable to slip the soil and drag the roots, and has not the cutting power that is necessary to get deeply down without trouble. We, however, much prefer the Wilson digger, because of its greater length and leverage; but this we have improved for the purpose by grinding away the pointed tip to the form of a chisel. This alteration is manifest as an improvement, especially when the ground is boggy and contains wiry roots, as the implement cuts through them instead of slipping aside. With this handy tool it is possible to get out a good cylinder of soil in which the plant is found as nearly entire as possible. The author makes the interesting remark that he is acquainted with gardens in which collectively the whole of our native Orchids, with perhaps three exceptions, are grown in the most successful manner. He says it is curious that in some gardens certain species thrive which in others cannot be coaxed into a short-lived existence. Such apparent caprice is observable among other plants, and it indicates the need of exact conditions, the nature of which, for these Orchids, may be gathered better from this work than from any other source we know of. Epipactis palustris is mentioned as especially difficult to manage, but with us it seems the easiest of all Orchids to grow, and it flourishes well with the author.

On p. 6 the use of sand is pointed out as of great value for placing about the roots when planted, and though they may not be accustomed to sand it is no doubt a good surrounding medium for them as for many bulbs. The author makes it a rule when planting to surround the roots with rough grit or sand, which not only to a great extent prevents decay, but materially assists in the formation of roots. The precaution, he adds, is all the more necessary when planting imported Orchids, the roots of which have become damaged in transit or through carelessness in lifting. With care, it is said, the plant may be taken up when it flowers without material damage, and with this we agree; but it may be worth suggestion that there would be advantage in marking the plants, in order to have the new tubers at a stage of greater maturity.

At the end of the chapter on cultivation the various species are usefully arranged under three heads according to their general requirements, though, as the author says, it must not be inferred that some of the Orchids will only thrive under the conditions specified, and in our own experience we know of exceptions, as in the cases of Epipactis palustris and Liparis Loeselii, which flourish in the full sun as well as in shade. Mr. P. N. Fraser has found that certain kinds do well in peat, though not naturally found in that soil, and our impression is that he has succeeded better with some difficult kinds in it than in their natural soil. Of pot culture no account is given, though that is a method which some years ago was adopted with great success by Mr. Needle, the gardener to the Comte de Paris at Twickenham. If not the best and easiest form of culture it is one of advantage and pleasure under certain circumstances, so that we should be glad to have the experience of any who may try it. Orchis maculata, for instance, we have found a beautiful pot plant.

Liparis Loeselii is grown successfully by the author

in a mixture of leaf-mould and brick-dust, and he says the bulbs have a peculiar propensity for rising out of the ground almost to their full length; but he remarks under Malaxis that it shows a tendency to be epiphytal. From the way it grows wild it may be termed a sub-epiphyte, and imitating the wild state, we have grown it successfully by sticking the plants among the stems of Schœnus nigricans with a little sphagnum. Goodyera repens flowers well, we read, if planted in a mixture of leaf-mould, decayed Pine leaves, and sand; and no doubt, but for special reasons, it should be planted out-of-doors, though we have grown it best as a greenhouse Orchid, with less success, however, in flowering it. The author, we note, has successfully raised seedlings of Orchis maculata, and they grew for seven years before flowering. The seeds were sown on a patch of Gentiana verna, and on some of the mossy Saxifragas, several fine plants being now the reward. Seeds are recommended to be sown on grassy turf and gently washed in among the roots. In this connection an observation may be recalled, that the seeds of some of these Orchids germinate in the axils of the leaves of grasses, about the lower ligules probably, and are afterwards washed to the ground. Cultivators should try sowing in any way that this may suggest, as British Orchids, if any, should be possible from the seed, and no doubt, by those who have patience, the best results would be had from seed, in those cases of kinds found difficult to establish. All know how well Ferns often grow when self sown from spores, and these plants might have a better chance for the same reasons, if the seeds could be got to germinate. It is recommended that the seeds of Habenaria bifolia should not be allowed to ripen, and knowing what influence the development of the seed-pod has in stopping the growth of tropical Orchids, we think it would be well always to remove the pods from hardy Orchids that have no strength to spare.

There are many hints for successful treatment in this book to which no allusion is possible, but to take a particular case we may note that Herminium monorchis has been grown very successfully by planting it alongside a block of stone, and in soil composed of chalk and loam.

The omission of a natural key to the genera may be regarded as the chief deficiency of this work, and a key might have been provided for the species even. The descriptions are sufficient, and there need be no mistake in naming by them, but a novice among British Orchids might have to search a good deal to determine the genus of a plant before him, and for species a key is often useful in narrowing the work of definition, especially in the case of such a genus as Orchis. The full description is equally useful when the plant has been determined in all probability. The four tribes are given as in Hooker's *Manual*, but are not characterised. Synonyms are not freely given, and we miss some of the most familiar, as in the names Sturmia and Gymnadenia; Habenaria (Gymnadenia) conopsea is referred to Orchis, in which the above *Manual* is not followed.

The glossary forms the least satisfactory feature. It is given, the author says, as many of the terms in connection with Orchids are of unusual occurrence, but we observe no more than half-a-dozen of special application, while so essential a term as gynandrous does not find a place. The labellum is described as the terminal segment of the lip in Orchids, and there is authority for this, but it is not the general acceptation of the term. Of the column we are not told that the filament plays any part in its formation. The glossary consists chiefly of terms of general application which are not always sufficiently defined. The definition of the term alternate, as applied to leaves, gives us the idea of distichous alternation alone. The filament in Orchids is wrongly stated to be the caudicle, but this does not appear to agree with what is said for that term. Corallorhiza is unfortunately given as an example of an epiphyte, though in the body of the work it is described as a saprophyte, and the definition of staminode is limited to the statement that it is a scale on the inside of the upper lip of some Scrophulariaceæ.

Mr. Webster gives an account and description of his Orchis maculata præcox, to which botanical attention may be drawn, as we gather from what is said that it will prove to be quite distinct as a variety at least, and worthy of addition to our Floras. If, at first sight, it seems too near the type, we must remember that plants of somewhat similar appearance are sometimes essentially distinct, just as plants of widely different appearance are sometimes of the closest relationship. We have not seen this plant, but, judging from the account given of its habitat, structure, size, and time of flowering, coupled with the information that it retains in the garden its mountain characteristics, it must be distinct as a variety, at least. Its sponsor now considers it worthy of specific rank. Botanical information is freely given, and botanists may turn over the pages with advantage. Observations of habit will be found useful, and so also the notes of peculiarities to be seen only in the living plant. There is valuable and interesting information throughout this work, and we give it our cordial recommendation.

THE APIARY.

PAINTING HIVES.

To talk about summer at the present time seems to be talking of a very far-off season; nevertheless, now is the time to be preparing for it. It is very likely that you have some hives in the dry, which are not at present in use, or that you will be making some fresh ones. New hives will of course want painting, and it will be a good thing to give the old ones a coat. It will be a good thing to paint them all, or nearly all, white, because that colour throws off the heat of the sun, and you will be much more likely to have cool hives in consequence. Sometimes dark-coloured hives get so hot that the new combs get melted, and break down, to the destruction of combs, honey, and bees alike. The only objection to hives being all of one colour, is the chance of a young queen returning to the wrong hive after her wedding trip. This, however, does not often happen, and I am more inclined to think that when the queen does not return to her own hive, she has most likely fallen a prey to a bird, or met with some other accident.

MEAD.

Many persons have asked me the way to make good mead. Here is a recipe taken from a great-grandmother's recipe-book a century and a half ago, from the *Morning Cloud*:—"Take a quart of honey to three quarts of water, and lett them boyle an houre. In the meantime, when it's begun to boyle, take ye white of an egg and beat it very well with a pint more of water, and put it in; then scum it very well. This will help to make it clear; then if it be not very clear put it through a clean flannin into a clean cask and clay it up very close, letting it stand half a year. Then bottle it, and let it stand half a year before you use it." The claying-up was the plastering of stiff clay round the bung to ensure the perfect exclusion of air.

"*To Make Small Mead.*—To 8 gal. of water put 1 gal. of honey, 3 lb. of loaf shuggar. Boyle and clear with whites of eggs. Keep it scumed for an houre, till it clears, then put in it mace, cloves, cinemon, and ginger. If you think fit, let it boyle an houre longer. Take it off ye fire and infuse with ye juice of six Lemmons; when it is cooled clear it from ye sedments into a barrel, with six or eight spoonfuls of new ale yeast and a good handful of barm and Sweet Bryer. When it has done working close it up in ye barrel, and after it has stood so a fortnight bottle it up with a bit of loaf shuggar in every bottle." Good mead is no despicable liquor. The bee-keeper may make it at no appreciable cost by soaking the combs in cold water after the honey has been drained out; by thus washing the combs sufficient honey is obtained for the purpose. The liquor when boiled and a bag of spices in it, a little Lemon juice and rind, and then cleared and worked, as in the above old recipes, makes excellent mead. *Walter Chitty, Pewsey.*

AMATEURS' NOTES.

THE VARIETIES OF NEW WHITE LÆLIA ANCEPS.

THE new white Lælia anceps var. virginalis, differs from L. a. alba in the form of the lip, which in the latter is rounded, without dent or depression, and lies flat, neither compressed nor reflexed towards the end, as in virginalis. Virginalis also is stronger in habit and growth than alba. It did not come out of the recent importations of 1885 or 1886; but was in this country in 1881, and so far as can be traced was among those imported by Mr. W. Bull, of Chelsea, though this must remain matter of conjecture.

My experience of establishing these Lælias is not quite that of Mr. Crawshay as given in his note, *ante*, p. 43. They appear to be true ramblers in habit and rather impatient of having their roots confined either in pot or basket; my most promising growths are developed over the side of the pot or basket, and a perfect network of new roots issues from the rhizomes beneath the base of these new growths.

Those where the plant is entirely potted or branched push rather 'upwards and away from the little peat I give them. The best success is with plants on Teak rafts and boards, with a little peat and sphagnum, next but not over the rhizomes, the drainage consequently is most rapid. They hang suspended near the glass in a span-house, running north and south, and kept as a rule about 55°—58° at night, sometimes lower in strong winds, for the roof is glazed with open laps, and very airy; whenever there is wind the spikes sway gently with the motion, and to this condition I think much is due.

Clearly, if what we are told is correct, these plants grow on trees at the edges of forests, where a breeze is generally induced by the vegetation, or in the clefts of rocks and stumps, and whatever wind blows they feel it; thus the rain, though copious enough at times, never lodges on them. A steady, uniform temperature night and day, would I believe exhaust them vitally sooner than any other treatment. The alternations of the seasons are very marked in their native habitat, and a very hot sun by day is often followed by a chilling wind at night. The habit of the plants induces the conclusion that bulbs and leaves grow in comparatively snug clefts and crannies, while the spikes push out more into the open. They seem very impatient of fire-heat, but stand the hottest sun if not directly falling on them,

Mr. Dominy, when a plant began to push roots, was accustomed to encourage it by building up with a little peat, charcoal, and crock, nearly up to them—a practice which seems to commend itself, particularly where the old bulbs look dried and shrivelly. *An Amateur.*

NEW WHITE LÆLIA.

One of the imported plants of 1885 has just come into flower with me; and as it may be interesting to many Orchidists to watch how these plants turn out, I venture to ask your permission to insert the following details:—

The plant was one of Mr. Sander's importations, bought at Stevens' Rooms, where the large size of the bulbs and the peculiarly vigorous habit were much remarked when the lot was put up. I carefully looked through the whole of those sold, and have since observed all I could see, both at Mr. Shuttleworth's and Mr. Horsman's sales and in nurseries and private collections, but have not recognised so strong or distinct looking a plant, or seen anything nearly like it in habit. The piece was by no means one of the largest sold, but I found several other bidders had noticed its remarkable appearance; the bulbs were full and robust, about 6 inches in length, some of them over 4 inches in girth, leaves very stout and rounded, and of a fine full dark green.

When brought here the plant was hung up near the glass in an airy intermediate house, never coddled or treated in any special manner; it always was in good health, it is a strong and vigorous

grower, and, as said, "a good doer." It has made good bulbs with me, quite as long as the old—full 6 inches, but not so stout, as the biggest is not quite 3½ inches in circumference.

For some months we have seen a spike developing, but in this weather its recent progress has been slow. The spike is strong, about 28 inches long; the knots about 1¾ apart, and very prominent. It bears four flowers, which, as in L. a. Dawsoni, when first opening, have a tendency to close up at night, and do not remain quite expanded till the flower has got strong, and been open three or four days. The individual flowers are of great size, 4¾ inches, measuring from the point of the dorsal to that of either of the lower sepals; the petals not quite 2 inches broad. It is, as a florist's flower, of better shape than any other Lælia I know, save the incomparable Dawsoni; the substance is grand, far exceeding all other Lælias, In colour, sepals and petals pure ivory-white; in form exactly like L. a. Williamsi, as figured and described in the *Orchid Album*, 1885, plate 190; throat and basal portion of front lobe yellow, veined with crimson-lake lines, and a few spots. As in Williamsi, there are three parallel lines of this on disc. It is, so far as I can see, almost identical in form with L. a. Williamsi, save there is no "reddish-brown" in the veining, and there are a few detached spots of the lake colour in the throat, but the whole plant is much more vigorous and entirely distinct in the shape and size of the bulbs from that variety, as figured, and far superior.

I am informed that the plant named L. a. Schroderiana, as flowered in the Percival collection last winter, was similar, and a piece off that plant which I now have appears to me identical in growth and habit. Mr. Cowan writes that that plant had "flowers of great substance, more than any other of the white Lælia anceps which had come under his notice," and that Professor Reichenbach called it a "very superior form of Schroderiana."

Unluckily for comparison no one of the plants into which Mr. Percival's was divided is flowering this season, but I entertain little doubt my variety is the same. I can only hope others may be equally fortunate in proving varieties from these importations; but fear we shall all have to be patient, for they are mostly difficult to establish, and take a long time to get bulbs strong enough to flower. The weather is not favourable to send the plant to Kensington for others to see, but I shall be happy to show the flowers to any one who is sufficiently interested in the matter. *An Amateur.*

PYRAMIDAL ORNAMENTS IN THE FLOWER GARDEN.

It has been the fashion to condemn the spiry and the standard forms in the garden, but it would not be easy to find a reason for this oft-repeated dictum, unless it be found in the fashion of following the lead given by horticulturists of note. Our illustrations of the gardens at Coombe Warren given in the last and in the present issues (figs. 15, 16, and supplements), will show, however, that under certain conditions such forms are appropriate, while for purposes of contrast it must be admitted that any plant form of a decidedly upward character of growth must be a suitable object amongst the dwarf and flat forms of our bedding plants and bed masses. The illustration of the fine Ivy-leaf Pelargonium grown at Coombe Warren, repeated in fig. 16, is a case in point. Such pyramids are constructed of young plants that had not been allowed to become pot-bound, and which are planted out in circles big and little, as suited the particular purpose required, and as the plants grow they are trained up the pyramidal trellises. We might point out other subjects equally attractive in leaf and colour as these, viz., Abutilons of any kind, especially A. Thompsonianum, Heliotropes of strong growing habit; but best of all for elegance and beautiful colour is Plumbago capensis. The old-fashioned Pelargoniums like Rollisson's Unique and Fair Helen are now uncommon plants, and those following are deserving of consideration, and the various hybrid Clematises which flower in early summer and again in the autumn, together with Cassia corymbosa and Jasminum revolutum. Some annuals of a scandent habit are not to be despised as trellis coverers, and are well adapted for pyramids. These are the varieties of Lophospermum scandens, of Maurandya, of Cobœa scandens, Loasa aurantiaca, &c. The seeds of these annuals require to be sown early in April, and the plants grown on quickly, so as to be of a good size at planting-out time. In certain formal arrangements some of the handsomest coloured Japanese Maples, variegated and golden Oaks might be used with good effect. With subjects such as those last mentioned, a considerable amount of pruning would require to be done to keep the plants in form, but when once the right shape had been obtained, they could be kept in order with the minimum of labour.

The different varieties of Pyrus japonica, as P. alba, P. princeps, and P. Maulei, can be made effective solitary plants, when they acquire age, by being trained; or, still better, by pruning with the shears each year after the flowering period is over. By this latter method the habit of the plant becomes very dense, and the annual growths short, and with the essential proviso that the situation is in full sun, so that the shoots coming after the summer pruning get well ripened, the plants become year by year more floriferous.

The photographs from which our illustrations are taken were executed by Mr. Poole, photographer, Putney.

MARKET PLANTS.

POINSETTIA PULCHERRIMA.

During the dull months of December and January the Poinsettias are among the most valuable plants for decorative purposes. At any season of the year their bright-coloured bracts would be found serviceable, but they seem to defy all attempts to induce them to depart from their natural season of flowering; however, as this is at a time when so few bright-coloured flowers are to be had, we ought not to complain on that account. Unfortunately they are easily damaged by exposure to the cold. It is perhaps on this account that they are not more extensively grown, for considering the time it takes to grow them, they realise a good price. Good plants will usually fetch from 9*s*. to 18*s*. per dozen, while those that have grown too tall or lost a few leaves will come in for cuttings from, good heads of bracts being worth from 4*s*. to 8*s*. per dozen.

Culture.

In growing Poinsettias for market purposes, the main aim should be to keep the plants as dwarf as possible, with clean healthy foliage down to the base, and to finish them off with broad heads of well developed bracts; to this end the first thing is, to look after the stock plants; these should be selected from plants with well ripened wood, and stored away in a position where they can be kept quite dry, and where the temperature does not fall too low, say not below 45° or 50°. I like to keep them dormant as late in the spring as possible, but as soon as they show signs of starting into growth, they should be brought forward and given every encouragement to start into vigorous growth, good strong cuttings being one great point towards success.

Propagating.

Cuttings struck in July or August will make good plants for flowering the following winter, but as the old plants cannot be depended upon for giving good cuttings so late in the season it is best to commence as soon as good cuttings can be obtained, and the early struck plants can be topped; if this is done so as to leave three or four eyes, the plants will break out and produce two or more heads of bracts. In taking the cuttings off some quite dry sand should be at hand to put the ends of the cuttings in as soon as taken off, to prevent bleeding, and also to prevent the milky sap from getting on the leaves, as this causes the leaves to damp off. It is best to put the cuttings in singly in thumbs or small 60-size pots, using loam, leaf-mould, and peat in equal parts, with plenty of sand added; the cuttings should be put in only just deep enough to keep them firm, and no water should be given the first day. They should be kept quite close and well shaded until they begin to root, which will be in a few days if plunged where there is a good brisk bottom-heat. As soon as they are sufficiently rooted they should be gradually exposed, and by the time they are hardened off they will be ready for potting.

Potting.

Various kinds of compost are used for growing Poinsettias in. I have seen them grown in pure loam, and also in compost that consisted largely of peat, the result being equally satisfactory in each case. The compost I prefer, however, consists of fibrous loam, leaf-mould, and a little well-rotted stable-manure, with a sprinkle of sand or the addition of a little horn-shavings is very beneficial, and has a more lasting effect than most manures.

General Treatment.

The plants at all times should be kept as close to the glass as possible, and they require but little or no shading. Watering must be carefully looked to, as the leaves burn very quickly if allowed to get withered. After plants are well established plenty of ventilation should be given. The early struck plants may be kept in cold pits through the summer, but they should be removed to where a little artificial heat can be given before the nights get chilly. As soon as the bracts begin to develope they should have more heat, and should be liberally supplied with liquid manure, or a sprinkle of Clay's fertiliser occasionally is a capital stimulant. *A. Hemsley.*

GOOSEBERRIES.

Market growers of bushes for trade sale display somewhat crude methods of planting, as evidenced the other day when I saw a big breadth of some thousands of yearlings being planted with an ordinary dibble. The ground had been deeply ploughed, then lined out into shallow drills about 15 inches apart, and into these the plants were dibbled. To enable this dibbling to be performed effectually the plants, after being lifted, are all run through the hands of women trimmers, who cut hard back both the roots and the heads. It is pleaded that this hard cutting of the roots, if apparently destructive of root-power, on the other hand promotes the formation of a cluster of roots close home; and at the end of the second year, when the bushes are as a rule found fit for disposal, and are so disposed of to the trade in great numbers, the roots are all the better fitted for replanting than would be the case were not the present hard pruning given. It is obvious that market growers are most anxious to ensure early fruiting, and which this cluster rooting promotes materially. In private gardens, and probably in nurseries, very little root trimming would be given, and the plants would be put out in rich soil in lines planted by the spade, thus giving the roots every encouragement to develope strongly and spread. Such rooting, of course, will promote very strong and often spreading top-growth, which, whilst assisting to form big bushes, is less favourable to early fruiting than is the case with the root-pruned bushes of the market grower. Then the latter has to produce his bushes very cheaply, for the price per thousand seems exceedingly low, especially having regard to the fact that two years culture and considerable labour have been expended upon them. Certainly the cuttings cost nothing, and in any case would be removed from the old bushes in the ordinary course of pruning. The first real cost begins with the collection of the best shoots, bunching them, removing them to sheds for proper making and then dibbling out into some properly ploughed and levelled land. As this work is performed at a season when other work is scarce, it at least assists to keep labour employed which might otherwise be turned adrift. There is just the possibility that a dry season combined with a heavy fruit crop may tend to reduce the strength of the summer shoots, and thus give poor cutting wood. The market practice of removing so much of the

fruit whilst in a green state happily tends to lighten the burdens of the bushes early, and thus, enables them to recuperate during the same season in a way which the bearers of ripe Gooseberries cannot do. Then, should a severe winter follow the planting of the cuttings, and especially after a somewhat sunless summer, there is often much harm done, and large numbers of the cuttings fail. Even a few late white frosts just as they are bursting in the spring, and of course ere roots are formed, restrain them, and will often destroy many cuttings; and again, a hot or dry summer is as much to be feared, for, having such poor roothold, the new-struck cuttings can make but little headway. However, all these contingencies have to be faced and their results tolerated if mischief follow.

During the past year or two the demand has been limited about London; evidence that of late fewer breadths of Gooseberry bushes have been planted. Good cultivation and careful pruning have much to do with the life of Gooseberry bushes, and they may, so cared for, remain good for twenty years; but, as a rule, fifteen years is a good life, and with bad culture a much less period suffices to deteriorate them. Thus it happens that very large renewals may fall in during some years, and few in others, but it is far wisest to grub out and replace a breadth every year. Of course many market growers provide their own successional bushes, but still many prefer to buy plants when needed, and to employ their own ground in more productive ways. Large planters seem to prefer two-year-old stuff to three-year bushes, as the transplanting at the former age seems to offer less check then than later. The price is of course lower also, and the raiser prefers to dispose of his stocks early than to hold over for a third year The gathering and making of the cuttings is chiefly performed by women—indeed, one large grower the other day expressed pleasure that this work would at least enable him to employ his women up till Christmas, as other work was getting slack. The bundles are usually made up in half-thousands, as in that way count is easily kept of the numbers of cuttings to be planted. Naturally allowance has to be made for failures, and 25 per cent. of these may be looked for, but much depends upon the maturity of the cutting wood, and the nature of the seasons which follow on the planting. *A. D.*

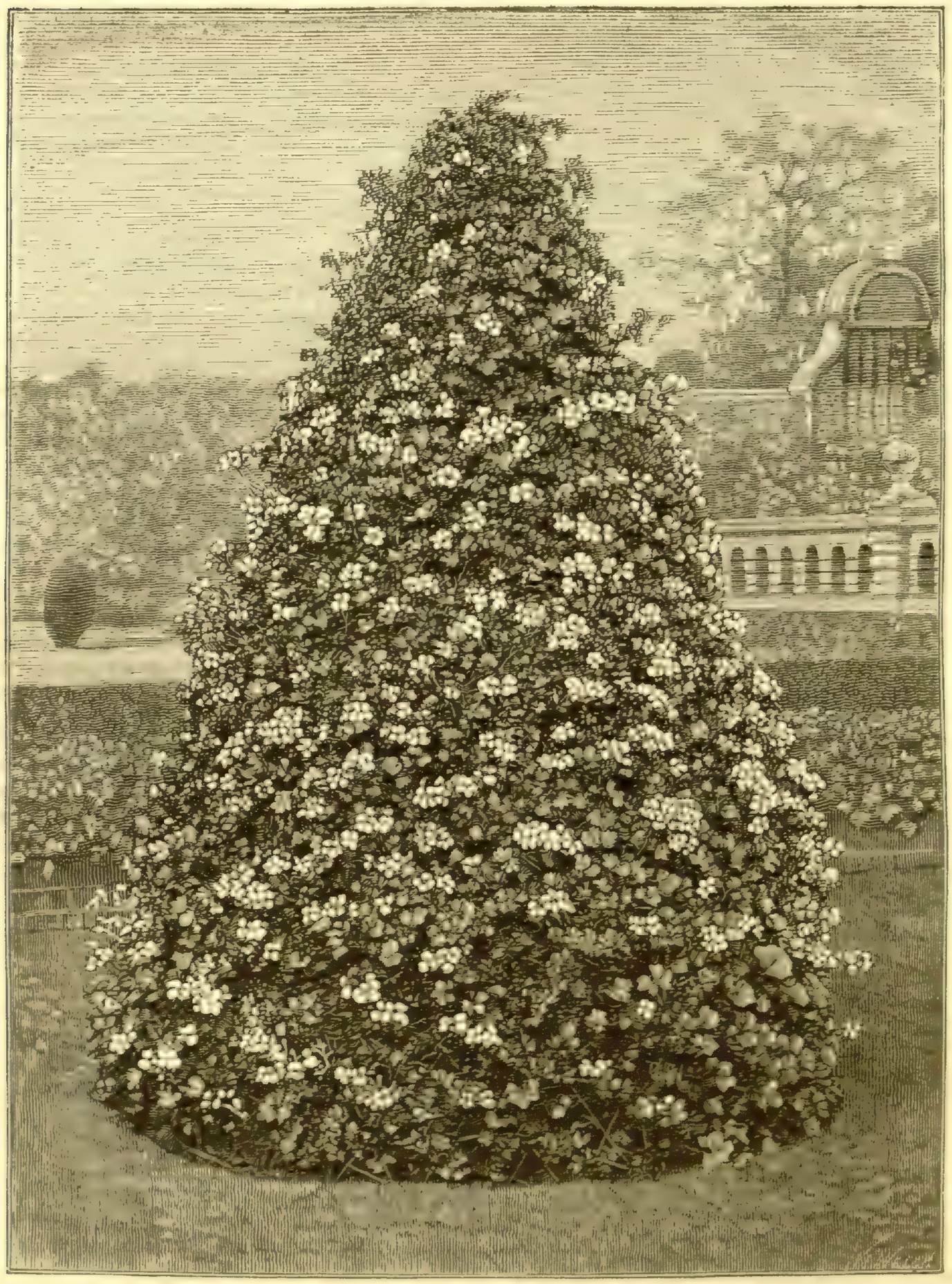

FIG. 16.—PYRAMIDAL IVY-LEAVED PELARGONIUMS AT COOMBE WARREN. (SEE P. 76.)

INDIA.

VANDA CŒRULEA, &c.—In reply to your question concerning the climate and temperature in which Vanda cœrulea and other large tropical-looking Orchids live and flower in the Khasi Hills, I have not much to add to what Sir J. D. Hooker says in his *Himalayan Journals*, vol. ii., p. 322. He there says that in the Jaintea Hills Vanda cœrulea grows at 3000—4000 feet elevation on small trees in exposed situations, that its roots sprawl over the rough bark, that at flowering time the temperature ranges between 60° and 80°, and in wintet hoar-frost forms on the ground.

In Shillong station, alt. 5000 feet and facing north, the Potatos were cut by the frost early in December, 1885, and there must have been 8° or 10° of frost in January, 1886. At this level (and higher, as at the Deputy Commissioner's house) Vanda cœrulea grows very fast and flowers profusely: it comes into flower in October at the end of the rains, when the temperature may be 50° to 70° (I only guess at these temperatures); but it remains in flower long after this. The plants are merely tied with string on the bare stems of Fir trees, and I have noticed that the roots get very little hold of the bark though they grow fast into large plants.

In January, 1886, when I was in Shillong station, though there was frost at 5000 feet every night, there were various tropical looking Orchids in flower and coming into flower.

In the Naga Hills in November, 1885, at 7000—8000 feet elevation, there was continual mist and frequent rain; the forest was both wet and dark and very cold at night; indeed the Nagas said that there would soon be snow at that level. Yet under these conditions I collected a large Cymbidium, two or three other large Orchids, and a "tassel" Hoya just coming into flower.

Pleione (a large white one) was in profuse flower on exposed bare rocks (the very summits of the hills) on the road to Lailankote on October 28, 1886, at 5500 feet elevation. The common and abundant Pleione Wallichii runs in Sikkim to 8000 and 9000 feet. In these cases even the highest day temperature in the shade must have been very low.

Dendrobium Devonianum flowers (as Sir J. D. Hooker, *l.c.*, states) at 3000—4000 feet elevation in very exposed situations; it is abundant on Oaks scattered on bare grass, with a north exposure below Nunklow, at 4000 feet elevation; but this Orchid flowers in the middle of the rains (July) when the shade temperature would reach 70° daily, and would hardly fall below 60° at night.

Vanda undulata I collected in flower on a very exposed hill side with north-east aspect, alt. 5600 feet (at least) above Shillong.

I am sorry that I can only refer so loosely to the species of Orchids referred to; but my specimens have not yet arrived, and I write only from memory. *C. B. Clarke, F.R.S.*

CONTRAST AND HARMONY.

A CLEVERLY written and well thought-out paper on "Contrast and Harmony" was read on the 15th ult., at the Birmingham and Midland Counties Gardeners' Improvement Association, by Mr. John Pope, of the King's Norton Nurseries, before a well attended meeting.

Alluding in the first place to an important work in the Birmingham Art Gallery, "The Martyr," by Gerts, in which the snowy garment and deathly features of the maiden, and the crimson-scarlet clothing of a male figure in the procession, as illustrating his idea of "Contrast," then turning his attention to other works, also in the same gallery, by Albert Moore, in which the lovely tints of azure-blue, greyish-white, and soft canary are so exquisitely blended as conveying his—Mr. Pope's—idea of what was meant by true "Harmony," he passed to what may be called the legitimate part of his

paper—"Contrast and Harmony"—with special reference to flowers.

Flower painting, Mr. Pope said, was, in the majority of instances, left in the hands of ladies and amateurs; gardeners as a rule, like professional artists, were in the habit of thinking the arrangement of flowers somewhat beneath them, though why it should be so he was unable to explain. He was well aware there were excellent exceptions, but the remark held good in the great majority of instances; many first-class bouquet makers never entered their productions for competition, alleging as a reason that they were often unfairly judged. He, the lecturer, was not quite prepared to endorse this statement, his opinion being that every gardener whose qualifications entitled him to act in that capacity conscientiously gave his verdict in an honourable manner; notwithstanding this, many errors of judgment did occur, the reason being, he believed, that gardeners as a rule did not give sufficient attention to the subjects he had chosen—"Contrast and Harmony."

Perfect harmony was found in combination with the most brilliant hues, as, for instance, in Cattleya Dowiana, which possessed colours almost impossible to depict. Take, again, the grand, rich, indescribable crimson of C. Mendelii; the Masdevallias, all giving such brilliant yet harmonious combinations of colour, as utterly to defy the most accomplished artist to reproduce.

The Cypripedium was next referred to as illustrating the harmonious blending of colouring matter, which singly, or shown in other subjects, would be positively ugly, here naturally extremely beautiful.

If ladies had been present Mr. Pope said he would have thrown out a suggestion that, if to dress in perfect taste were their object, let them take one of the Cattleyas as an ideal—imitate the perfect combination of its tints, and their end would be attained. Here, however, in the opinion of the writer, Mr. Pope made one omission—he neglected to inform the meeting how or by what means the *modiste* would succeed where the artist would fail. Had ladies been present, no doubt the lecturer would have had this most important question to solve; as it was, he escaped. The beautiful tints found in the Nerium (Oleander), and the length of time which its beauties had been appreciated, entering largely as it did into the internal decorations of ancient Pompeii; the lavender-blue which has no rival in the beautiful Plumbago capensis; the exquisite colouring of the familiar Forget-me-Not (Myosotis), whether seen in its native habitat, by the running stream, or bunched for market, were all alluded to, or dealt with in an interesting style by Mr. Pope, who also mentioned the fact that it was chiefly by the aid of the three preceding subjects he won the prize for bouquets when the Royal Horticultural Society last visited Birmingham; this, considering there were about sixty entries, was an achievement of which any one might be proud.

Bougainvillea glabra was next mentioned by the lecturer as an indescribable tint of colour, which, if asked to define—familiar as he was with every conceivable shade—he should acknowledge himself beaten; it was unique, and he should be compelled, for want of a better name, to describe it as Bougainvillea colour. Mr. Pope said he had always experienced a difficulty in harmoniously associating this peculiar tint ,with any other subject; it was true white was passable, but for his own part he objected even to this, and advised his hearers, who had to use this in any quantity to set it up alone, cutting with it sufficient of its own foliage, than which nothing was better, illustrating thus the unerring correctness of Nature in all her works.

Old-fashioned bedding was next touched upon, combinations of such subjects as Centaurea, Cineraria maritima, as producing with blue very pretty and chaste effective contrasts; and in conclusion Mr. Pope apologised for so briefly alluding to "contrast," remarking that, to him, harmony was infinitely preferable, the shrine at which he had worshipped in the past, and his ideal for the future. *J. H. H.*

FLORISTS' FLOWERS.

EARLY AND LATE FLOWERING PRIMULA SINENSIS.

Many acceptable results have flowed from the attempts made of late years to improve the strains of Primula sinensis fimbriata; one is that we are now in possession of varieties, some of which naturally flower early, and some which bloom much later. This is noticeable in the large and varied collection of Primulas at Messrs. Sutton & Sons' Portland Nurseries at Reading. And it is not a matter of individual plants only, but batches of varieties, so that the illustrations are on a large and reliable scale. Snowdrift, a charming single white variety, not in full bloom, dozens of plants having thrown up large heads of flower; and it was not that one variety was sown earlier than the others, but all were treated alike, and Snowdrift led the way. Closely following it was Reading Scarlet, one of the brightest of the high-coloured varieties, well named Scarlet, with a bright yellow eye, and a variety that retains its colour well to the end. Now these two varieties are well adapted for exhibiting in November, at such Chrysanthemum shows as have a class for Primula sinensis. At the Crystal Palace exhibition, for instance, Primulas were invited, and several collections were sent, but not one of them was in anything like show form; and the judges would have been justified in withholding the prizes altogether. Of the Reading batch, the next to succeed these are Rosy Queen, Pearl, Superb, and Superb White; when the two foremost are beginning to fade, then the quartette just named are getting towards their best, taking up the floral succession and carrying it on until quite early in the spring. Then follows, as forming the third blooming period, Ruby King and Reading Blue; and in this way April is reached. The natural tendency of each variety under ordinary treatment is to flower at the period named: of that there can be no doubt. But what a singular Primula of the sinensis type is Gipsy Queen! It is a Fern-leaved type, with the foliage almost as black as that of Perilla nankinensis. The flowers are almost pure white when they first open, and after that they become spotted and suffused with red. It is a type undreamed of—impossible of realisation a few years ago. Then there is a batch with crisped leaves, like those of the curled Mallow, a very distinct type of foliage, of a decidedly pleasing character; indeed, now that we have Primula sinensis with black foliage, and another with blue flowers, there is no knowing what is in store for us, and what surprises may confront us during the next year or two. *R. D.*

[A selection from Messrs, Sutton's collection formed the principal feature at the meeting of the Floral Committee on Tuesday, Jan. 11: see our report in the present number. Ed.]

FRUITS UNDER GLASS.

VINES.

A second house of Black Hamburghs and other early or mid-season varieties, such as Madresfield Court, Buckland Sweetwater, and Foster's Seedling, may be started at once if this succession has to be maintained. The Vines should be tied horizontally to the trellis over the front hot-water pipes, and ought to be syringed three or four times a day with tepid water. This treatment, together with a night temperature of 50°, and from 55° to 60° by day with fire-heat, and 10° higher by sunshine, will provide a genial atmosphere, and cause the buds to push into growth within a month or five weeks from the time of keeping the house close and moist.

Muscats, &c.

Houses containing Muscats and long-keeping varieties should also be started—the Muscats next week, and the others a week or two later, so as to get the fruit well ripened and coloured by the end of September. This can only be accomplished by starting the Vines early in the new year, and afterwards pushing them on consistently with securing stout lateral growths and compact bunches until the berries begin to colour, when, if the production of well coloured and bloomed bunches is desired, they should be allowed sufficient time to acquire these various points of good culture. In short, if fine bunches of Grapes be required by September, the "forcing" must be effected in the interval between the time the Vines show bunches and the berries begin to colour; as Grapes which are forced hard during the ripening process seldom colour very well.

Grape Room.

Any berries that are decayed, should be removed by a pair of scissors as soon as they appear, otherwise they will affect those surrounding them. Berries are frequently damaged in the centre of heavily shouldered bunches owing to being pressed on each other, and, in order to remove these without spoiling the appearance of the bunches the shoulders should be raised, while the affected berries are being cut out. *H. W. Ward, Longford Castle.*

Hotbeds.

Equal quantities of stable-dung (including the droppings) and leaves should be thrown together in sufficient quantities to make as many hotbeds with as may be required ten or twelve days hence, and after they have been turned over a couple of times during the interval to allow the rank heat and steam to escape, the hotbeds should be made in a southern aspect, or all the better if in front of a wall or Laurel hedge, planted for the purpose of breaking the north winds and preventing them from cutting into the back of the frames when air is applied. The ground on which the bed is made should be a few inches higher than that surrounding it, so as to prevent the lodgment of water at its base. The bed should be a couple of inches larger all round than the frame intended to be placed thereon, and sufficiently high (6 feet) to allow for its shrinking, which will be about one-third its height when finished, beating the fermenting material down with the fork as the work proceeds. When the frame is placed on the bed put sufficient dung and leaves therein to raise the surface of the bed to within 15 inches of the glass before placing thereon the mould for the Melon and Cucumber plants to be planted in later on. *H. W. Ward, Longford Castle, Salisbury.*

THE PEACH AND NECTARINE AS WALL TREES.

These choice fruits have been so much cultivated under glass, or protected by what are termed Peach-cases, against walls, that culture in the open air is in many parts getting more and more neglected. The trees must be grown against walls facing south or west; and now that we have such early varieties as Alexander, Hale's Early, &c., with a good succession of mid-season and late varieties, very fine fruit can be obtained from open walls. Failure to produce good fruit may be attributed to various causes.

Reasons of Ill-Success.

A not uncommon source of failure arising from trying to do too much. A fruit tree requires space for its roots as well as its leaves, but as the roots happen to be out of sight they are too often not cared for. Supposing the trees are planted against a wall 10 feet high, the roots should have the run of a border in front of the wall 10 feet wide; this border may have been carefully prepared in the first place, but the gardener sees an excellent opportunity to obtain a crop of early Peas, Potatos, or Cauliflowers, and the temptation to crop the border from one end to the other cannot be resisted. The Peas luxuriate in the well-worked soil of the border, and may grow 5 feet high or more, their roots massed and entangled amongst the roots of the trees, and the tops shading the branches at a time when every ray of sunshine is wanted to develope leaf

and fruit and bud. The broad leaves of Cauliflower plants do much injury by shading the borders, and the roots exhaust the material resources of the soil. Potatos do harm in other ways. In fact, to do the trees well, nothing at all should be grown on the borders. Lettuce, Radishes, and small salads of various kinds would do least harm. We do not think of cropping the border inside a Peach-house: why should we crop the same extent of surface allowed for the roots outside? The best place for the roots is near the surface, but what with digging the ground for crops, and working the surface as well, they are driven deep down into the subsoil, away from the life-giving influence of heat, air, and warm summer rains. I have been told more than once that choice fruits cannot be produced of such good quality now as they used to be, because the seasons have changed for the worse. This question of the seasons changing has been discussed periodically, and it has not yet been decided whether they have changed for the worse, or the better, or at all. My own opinion is that we do not give so much attention to Peach trees on walls as the old gardeners did.

The Way a Border should be Made.

When quite a youth I knew old gardens where splendid Peaches were produced from wall trees, but they were planted in prepared borders, which were not exhausted by injudicious cropping. To succeed with Peach and Nectarine trees out-of-doors on walls the preparation of the ground is more important than it is if they were intended to be planted in a Peach-house, because success depends very much upon the early ripening of the young wood. Suppose the border in front of the wall is 10 feet wide. It ought to be well drained. In most cases a gravel path runs parallel with the wall, the border for the roots being between them. A drain 3 feet 6 inches deep should be dug in the path, the drain to be formed of 3-inch tiles; at intervals of 12 feet drains should be cut across the border up to the wall, of 2-inch tiles. These, being connected with the drain in the path, will perfectly drain the border. Of course a good outlet must be provided for the effluent water. If a good border can be provided for the trees so much the better. If the loam is heavy it may be 20 inches deep, if light sandy loam it should be 2 feet. The turf ought to be stacked in a heap for six months, when it may be chopped up and mixed with a fourth part of mortar rubbish. Some crushed bones may be added, half a bushel to a cartload of loam will be enough. If manure be added the trees make very gross growths, which do not ripen well in unfavourable seasons, and the trees have a tendency to canker If a border of this kind can be formed, it is also desirable to place some stones or brick rubbish in the bottom for drainage; for instance, where my lot is cast we can obtain plenty of turf, and this we would place in the bottom of the border freshly cut, and with the grass side under. In many cases it would not be possible to obtain turfy loam, and the border has to be formed of the natural soil of the garden, whatever it is. In that case it ought to be trenched to the depth of 20 inches or 2 feet; but if it is stiff loam, mix with it some road scrapings, or, what is better, mortar rubbish. Crushed bones are also an excellent manure for them: it may also in this case be desirable to work in during the process of trenching some decayed stable manure. *J. Douglas.*

(To be continued.)

Davallia fumarioides.—This species, apparently a recent introduction to cultivation, belongs to a small section of which perhaps the only other member represented in British gardens is D. aculeata. All the five or six species of this section have fronds in fully matured plants several feet in length, and are usually climbing in habit. Both D. aculeata and D. fumarioides have the rachises armed with strong hooked spines, but the latter has fronds of a much lighter and brighter green, and the segments are smaller and more deeply cut. Plants of both are to be seen in the Kew collection, where they flourish and look remarkably handsome in suspended wire baskets.

Orchid Notes and Gleanings.

CATTLEYAS AND LÆLIAS AT PRESTON HOUSE.

During the past twelvemonths I have made it a rule to take a list once a week of the Orchids in flower. This, I think, is advisable, as it is then possible to compare the flora of one year with another, and note whether any particular species is earlier or later coming into flower. and also to note the length of time any particular form has remained in bloom.

During the twelve months now past we have not been a single day without flowers of Cattleyas or Lælias, and the new year opened with C. Trianæ, C. dolosa, C. Harrisoni violacea, L. anceps, L. Amanda, and L. albida, in variety. Taking the months in their order, the following were in flower during 1886:—

January.—C. bicolor, many fine forms, including C. Measuresiana, C. Wrigleyana, C. Percivaliana, C. Trianæ, and C. luteola; L. anceps, L. Schilleriana, L. autumnalis, L. Perrini, many; and L. albida.

February,—C. bicolor, C. Trianæ, C. Percivalliana, C. Walkeriana, C. amethystoglossa, and L. albida.

March.—C. bicolor, in variety; C. Trianæ, a great number of fine varieties, including C. triumphans, C. Percivaliana, many; C. Lawrenceana, two very distinct varieties; and C. amethystoglossa.

April.—C. bicolor, C. citrina Lawrenceana, nine spikes; C. Trianæ, C. amethystoglossa, C. Mendelii, C. dolosa, and C. Mossiæ; L. cinnabarina, and L. Schilleriana,

May.—C. citrina, C. dolosa, C. Mendelii, a large number; C. Mossiæ, very many; C. Lawrenceana, three plants; C. amethystoglossa, C. Skinneri; L. elegans, L. cinnabarina, L. purpurata, and L. majalis.

June. — C. Mossiæ, C. Mendelii, C. citrina, C. purpurata, C. Mossiæ Arnoldiana, a most beautiful variety; L. majalis, many fine blooms; L. cinnabarina, and L. elegans.

July.—C. Mossiæ. C. Mendelii, C. Mossiæ Arnoldiana, C. Eldorado, C. Gaskelliana, C. Sanderiana, twenty-seven flowers on one plant; C. labiata (true); Lælia Schilleriana, L. monophylla, L. purpurata elegans, and L. majalis.

August.—C. Gaskelliana, many fine forms; C. Dowiana, C. Eldorado, C. velutina, C. crispa, C. crocata (true), and C. superba; L. monophylla, L. Amanda, L. Schilleriana.

September.—C. Eldorado, C. superba, C. Gaskelliana, C. crocata, C. exoniensis, buds pinched off; C. bicolor, and C. marginata; L. Dayana, L. Schilleriana.

October.—C. bicolor, over fifty spikes, some with seven flowers on a spike; C. Gaskelliana, several with four flowers on a spike; C. Eldorado, C. marginata, C. maxima, C. superba; Lælia Dayana, L. Schilleriana, L. præstans, L. elegans, very dark form; L. Perrini, and L. autumnalis.

November.—C. bicolor, C. Gaskelliana, C. superba, C. maxima, C. Harrisoni violacea, C. luteola, C. Regnelli; Lælia Perrini, many fine spikes; L. præstans, L. autumnalis, L. elegans Wolstenholmiæ.

December.—C. dolosa, C. luteola, C. Harrisoni violacea, C. Trianæ; Lælia anceps, L. autumnalis atrorubens, L. elegans Wolstenholmiæ, and L. albida.

The foregoing list is in most respects pretty satisfactory. We, however, anticipate a far greater number of spikes and flowers, as well as more variety, as several sorts have not bloomed during the past year. Already we can count over 500 sheaths of Cattleya Mossiæ, over 300 of C. Trianæ, a large number of Mendelii and Percivaliana, whilst Gaskelliana and many others, though dormant at present, give every promise of bringing good growth and bloom in their season. *W. Swan.*

Masdevallia Backhousiana.

This is one of the Chimæra section, grotesque as a mask in a Christmas pantomime. The flowers measure 12 inches across (tails included), and have broadly triangular or wedge-shaped sepals of a yellowish ground colour, irregularly blotched with purplish-brown, and beset with bristly hairs, prolonged into very long, slender, purplish tails; the lip is relatively very small, white, in shape like a sabot or blunt-bowed boat. It is a native of Antioquia. It grows best in the Cattleya-house, in a compost of sphagnum, peat, sand, and lumps of charcoal. It requires abundance of water for the greater part of the year, diminishing the supply in winter. The temperature should not be allowed to fall below 50° in winter, and the plants require to be shaded in summer from the direct sun. *Reichenbachia*, t. 19.

Cattleya citrina.

People who like popular names will be interested in knowing that Professor Reichenbach, with not unbecoming hesitation, has identified this with the "Cozticcoatzontecoxochitl" of Mexican botanists. For our own part, we prefer Lindley's name of Cattleya citrina. The plant is figured at t. 20 of the *Reichenbachia*, and is well known for its singular habit of growing head downwards, as well as for its large egg-like citron-yellow flowers. The newly imported plants should be bought in in December and January, when at rest, and grown on blocks without any soil in a temperature of 55°—60° Fahr. in full sunlight. As growth begins the temperature should be increased even up to 80° Fahr., and more water given. After growth is finished a long period (at least six months) of rest should be given.

Odontoglossum Lucianum, *Rchb. f.*

This Odontoglot, recently introduced from Venezuela, is possibly a natural hybrid between O. nævium and O. odoratum. It was described recently in our columns by Professor Reichenbach. The flowers are in racemes, the sepals and petals ovate-lanceolate, white, with purple spots; the white ovate-acuminate lip has a large violet blotch in the centre near the base. *Lindenia*, t. 65.

Catasetum galeritum.

This is the species lately described by Professor Reichenbach in our columns, and now figured in the *Lindenia*, t. 67. The oblong-acute sepals are greenish, spotted with purplish-brown spots, the column purple, the lip canoe-shaped, green, spotted with purple.

Trees and Shrubs.

A HARDY VERONICA.

The Veronica, which I showed before the committee at South Kensington on the 7th ult., excited some interest owing to the flowers and foliage having stood 17° of frost. I was asked to get the correct name, as the one I had it under (V. salicifolia) was disputed. A sprig was therefore sent to Kew to Mr. Baker, and he has kindly named it, saying that it will not pass muster for a form of parviflora, but considers it to be V. ligustrifolia, A. Cunn. *George F. Wilson.*

Ilex insignis.

Unfortunately this noble Himalayan Holly has not proved hardy in this country; it was killed in the open at Kew two or three seasons ago. Its splendid foliage, however—we have measured leaves which were 11 inches long and 2 inches broad—render it a very suitable ornament for the unheated corridor or cool conservatory. In colour the arching leaves are dark dull green, and the veins whitish; the margins are very wavy and armed with strong spines.

The Golden Scotch Fir.

Unlike the golden-leaved form of the Austrian and Stone Pines, which are nearly green during the winter months, and only in character during summer, the Golden Scotch Fir is seen at its best in mid-winter. When in full growth the needles are green, but as winter approaches they gradually assume the rich colouring which renders the tree so conspicuous at the present time. In the Pinetum at Kew there is a good series of forms of the Scotch Fir, but the one here noted is by far the most attractive now. *G. Nicholson, Kew.*

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APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

WEDNESDAY, JAN. 19—Society of Arts, at 8 P.M.

THURSDAY, JAN. 20—Linnean Society, at 8 P.M.

SALES.

MONDAY,	JAN. 17	20,000 Lilies in variety, from Japan, at Stevens' Rooms.
WEDNESDAY,	JAN. 19	Roses, Fruit Trees, Shrubs, Border Plants, Bulbs, &c., at Stevens' Rooms.
		Various Lilies from Japan, Roses, Plants, &c., at Protheroe & Morris' Rooms.
THURSDAY,	JAN. 20	Orchids from Mr. F. Sander, at Stevens' Rooms.
FRIDAY,	JAN. 21	Imported Orchids, at Protheroe & Morris' Rooms.
SATURDAY,	JAN. 22	Roses, Fruit Trees, Shrubs, Border Plants, Bulbs, &c., at Stevens' Rooms.
		Roses, Plants, and Bulbs, at Protheroe & Morris' Rooms.

Things in General.

BRIEF respite indeed is enjoyed by the horticulturists. The closing weeks of the past year were more or less occupied with the meetings of the Royal Horticultural Society, and other societies more or less connected with it. The early weeks of the present year find us engaged in noting the doings of the same societies, and in assisting at a Chrysanthemum show in January, which is certainly a novelty. The meetings of the several committees of the Royal Horticultural Society, on Tuesday last, were exceedingly well attended, some new faces appearing amongst the old ones. The Scientific Committee was strengthened in this way by the presence of Mr. GEORGE MAW, Mr. D. MORRIS (the Assistant-Director of Kew), and Professor MARSHALL WARD, of the Indian Forestry College at Cooper's Hill. At the Floral Committee we were glad to see new friends, such as B. WYNNE, and W. GOLDRING, as well as a return to office of such tried friends as JOHN FRASER and CHARLES PILCHER. At the Fruit Committee Mr. FITT was almost the only newcomer.

At all of the committees reference was naturally made to the sense of grievous loss occasioned by the death of Mr. THOMAS MOORE, and an appropriate resolution was proposed by the Chairman of the Floral Committee, for Mr. SHIRLEY HIBBERD, and seconded by Mr. FRASER.

At the Floral Committee (a full report of which is found elsewhere) Chrysanthemums, Orchids, and specially Messrs. SUTTON'S Primulas, formed the staple exhibits. The voting was, we believe, sometimes very close, as, for instance, in the case of the Chrysanthemum named Mrs. Jones, which is a sport from Ethel, and which obtained a First-class Certificate by about ten votes as against eight, many members not voting at all. Other Certificates were granted *nem. con.*—that is to say, while a few voted for, no one voted against the subject proposed. This was entered as a "unanimous" vote, which was not quite the correct state of the case. We give these figures approximately, and without authority; but we think it should be an instruction to the Secretary of each committee to furnish the gardening journals, not only with a list of the subjects certificated, but also with a list of those members present, and of the numbers of those who in each case voted for or against, or who abstained from voting at all. Among plants honoured on this occasion with a unanimous vote was the curious Korolkowia discolor, elsewhere described, and a very desirable winter flowering Kalanchoe, shown by Messrs. VEITCH as K. carnea. This has pale rosy-lilac deliciously fragrant flowers, qualifications which, added to the fact that the plant flowers in January and February, should render it a most desirable plant for decorative and market purposes. Baron SCHRODER showed some lovely varieties of Lælia anceps, and the luminous rosy-lilac flowers of Barkeria Vanneriana, borne in graceful panicles, secured a Certificate, about twelve voting in favour, and none against it. An elegant greenhouse Fern, Pteris tremula var. flaccida, was certificated by a vote of about seven, whose opinion was not challenged.

But the most remarkable exhibit was that of varieties of Chinese Primrose shown by Messrs. SUTTON. For variety, brilliancy, novelty, and good cultivation, this collection obtained universal praise, while no fewer than six out of ten named varieties selected for special honour were certificated. The single and double blues perhaps obtained most admirers, but the rosy-crimson and flesh-coloured varieties were, if less strange, more beautiful. The variation in the foliage is remarkable, rounded leaves, oblong leaves, red leaves, green leaves, Fern-like leaves, and leaves like curled Parsley or those of Malva crispa. This is the more remarkable, as Primula sinensis is a pure species, not yet crossed with other species. Some interesting particulars concerning this species, we may remark parenthetically, are contained in the Report of the Primula Conference, lately published.

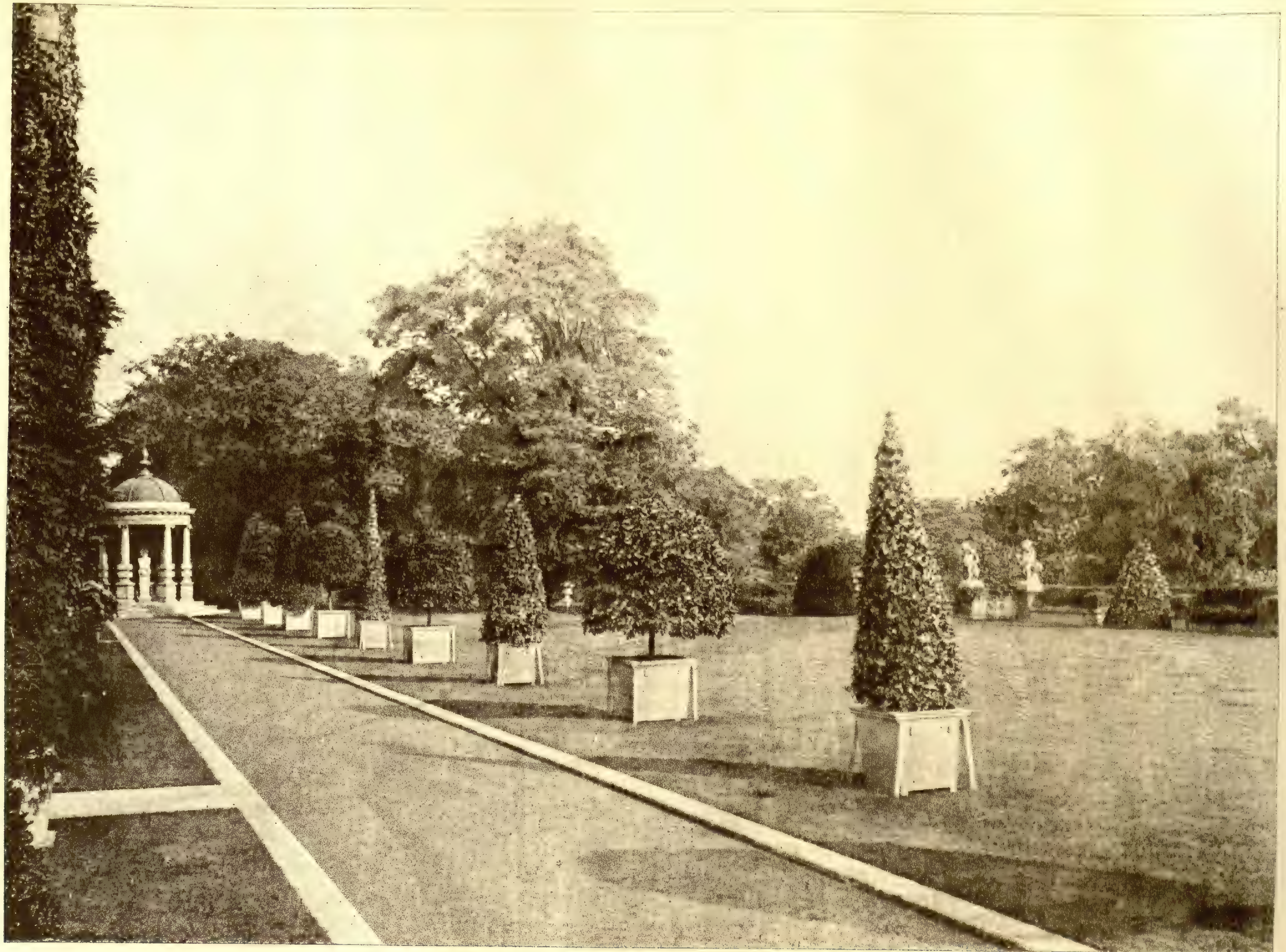
At the Fruit Committee, as was natural at this season, there were not many exhibits. Among the more remarkable were some bunches of a new white Grape, called White Gros Colmar, but which did not obtain an award; and the best fruits we have yet seen of the Kaki (Diospyros Kaki), from the gardens at Appley Towers, near Ryde.

In addition to the three committee meetings of the parent Society there were more or less formal gatherings of the members of the Dahlia Society, the Auricula Society, the Turner and the Veitch Memorial Committees. We mention these matters to show what a large amount of business is pleasantly transacted on these occasions, and to show what loss and inconvenience would arise were these gatherings allowed to lapse.

The mention of this subject leads us to say a word or two as to the present position of the Royal Horticultural Society—a subject which formed the principal subject of discussion at the dinner of the Horticultural Club in the evening. Of course, such discussion is wholly informal, but it is pleasant to record that the feeling of confidence in the Council and of the desire to support the old Society in every possible way was universal. Every one knows the unhappy, homeless position in which the Society now is, and now that the Exhibitions have come to an end the number of Fellows is likely to diminish rapidly, so that the Life Fellows, who contribute nothing financially, and the horticulturists proper, who, though they do the work of the Society, are yet numerically small, will, we fear, shortly constitute the Society unless some proper home be found for it. With so restricted a body of subscribers the income available for horticultural purposes must be most seriously curtailed. In order to provide, if possible, against this contingency it is understood that the Council is negotiating with the promoters of a scheme for utilising the Albert Hall—an institution which, at present, is in no more flourishing condition than the Society itself. The proposal to co-operate in the Albert Hall scheme is looked at askance in many quarters, from a fear that the nature of the entertainments to be given, and the quality of the company likely to assemble to partake of them, may not be such as it is consistent with the dignity of a chartered society to countenance. For our own part we do not know more than what rumour tells, but if the rumour be well founded we should certainly protest against any direct association with the Albert Hall scheme. It is, however, quite likely that the fears we have mentioned may be groundless. Abroad such associations are not uncommon. The Flora Society of Cologne is one, for example; and although the gardens and the conservatories are the scenes of occasional meetings not precisely of a horticultural character, yet we believe horticulture does not suffer in public estimation by the association. Again, in the case of the Royal Botanic Society, the evening *fêtes* have as little to do with horticulture or botany as possible, but they are well conducted and very attractive to thousands who care as little for plants as they do for Chinese music. We are sorry that Horticulture and Botany cannot run alone, but if the companionship be honest we cannot see that there is anything wrong in the copartnership. If, then, the Council come to the conclusion that the Society can without incurring risk or suspicion, co-operate with the Albert Hall scheme, well and good, only let us have separate organisation and our own door knocker.

Far more to our taste, and far more consistent with the objects of the Society, would be an alliance with the Imperial Institute. We assume that the Institute will be founded, and that it will be located at South Kensington. One great object of this Institute must naturally be the display of and the development of the resources of the vegetable kingdom in the various colonies, and the promotion therein of agriculture and of horticulture. The co-operation of the Royal Horticultural Society, as a body in which science and its practical applications are represented, would be most valuable and appropriate and much more consonant with the dignity of the Society than association with a place of mere amusement, however well conducted. But, in the meantime, the Albert Hall exists, and the Institute is still in the clouds, and the Council may be excused for devoting their attention to practical rather than ideal aims.

The mid-winter show of Chrysanthemums, inaugurated by the National Chrysanthemum Society, and held on Wednesday last at the Aquarium, Westminster, bids fair, judging from the specimens of the flowers shown, to become an affair of increasing importance. Much of what



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was there exhibited gave signs of some unpreparedness on the part of exhibitors, but the fairly good quality observed in Mr. OWEN's flowers, which consisted of nearly the same kinds as those seen at the early winter shows, affords hope that another year will see an advance in the culture of these flowers at a late period of the winter. And it will be admitted that these mid-winter flowers, which will in some places take the position held by forced subjects, seemed more seasonable then, than when we get them in July and August.

THE LATE MR. MOORE.—At the funeral of the late Mr. MOORE, it was suggested that, provided the proposal met with the acceptance of Mrs. MOORE and her family, his old friends and associates would feel it a privilege to be allowed to place a memorial-stone over his grave in the Brompton Cemetery. We are now in a position to say that Mrs. MOORE, grateful for the respect paid to her husband's memory and the sympathy extended to herself, desires to leave this matter entirely in the hands of her late husband's friends. A statement to this effect was made at the committees of the Royal Horticultural Society at the meeting on Tuesday last, and several subscriptions of ten shillings and upwards were received or promised. No doubt many of our readers will be glad to co-operate in this slight mark of respect for one of the most disinterested of hard workers in the cause of horticulture; if so, they should communicate at once with Mr. HARRY VEITCH, or with DR. MASTERS at the office of this journal. The names of the subscribers will eventually be published but not the amounts they contributed. In such cases the amount subscribed is of course never taken as the actual measure of the sympathy felt.

VEITCH MEMORIAL PRIZES.—At a meeting of the Trustees held at South Kensington on Tuesday, the 11th inst., it was decided that a £5 prize and medal should be offered for competition at the principal shows of each of the following Societies:—York Gala, Liverpool, Birmingham, Leicester, Oxford, Derby, and the Royal Horticultural, May 24 (Cypripediums). Also at the National Dahlia Show to be held September 2, a prize of £2 10*s.* and a medal is to be offered in each of the following classes:—Self-show, particoloured-show, pompon, decorative and single. And further, at the National Chrysanthemum Show, to be held in November, a prize of £3 3*s.* and a medal is to be offered for 24 incurved Chrysanthemums, distinct; a similar prize and medal for 24 Japanese kinds, distinct; also a prize of £2 2*s.* and a medal for each of the following:—24 reflexed, 24 large-flowered Anemone, 24 Japanese or hybrid Anemone-flowered, and 24 pompons, including Anemone-flowered. The object of the Trustees in the two latter competitions is to make the exhibitions as complete as possible by inducing exhibitors to bring together specimens of all the best sections of Dahlia and Chrysanthemum in cultivation. The number of prizes offered during the year are therefore 7 special prizes, 5 Dahlia prizes, and 6 Chrysanthemum prizes, or 18 in all, each prize being accompanied by a medal. These prizes are open to competition amongst amateurs only.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—We are requested to announce that, pending the election of the Secretary in the place of Mr. J. F. MCELROY, deceased, all communications respecting the Society should be addressed to Mr. J. HUDSON, The Gardens, Gunnersbury House, Acton, W.

NATIONAL AURICULA (SOUTHERN SECTION), PRIMULA, CARNATION AND PICOTEE SOCIETIES.—At a committee meeting of these societies, the Rev. H. H. D'OMBRAIN was unanimously elected chairman of committees in place of the late Mr. THOMAS MOORE. ROBERT HOGG, Esq., LL.D., was appointed auditor in conjunction with HARRY J. VEITCH, Esq., F.L.S.. The prizes offered by the trustees of the Turner Memorial Fund were accepted with thanks. The suggestion that something be done to mark the Jubilee year was not adopted. It was thought best to leave this matter to be dealt with by the Royal Horticultural Society, who could deal with horticulture and allied sciences as a whole. The balance in favour of the Auricula Society was stated to be £27 1*s.* 4*d.*, that against the Carnation and Picotee Society being £6 16*s.* 1*d.*

ROYAL OXFORDSHIRE HORTICULTURAL SOCIETY.—The exhibitions of this Society will take place during the coming season as follows:—June 21, July 28, Sept. 8.

LINNEAN SOCIETY OF LONDON.—At the next meeting, to be held on January 20, at 8 P.M., the following papers will be read:—1. "Stimulation on Turgescent Vegetable Tissues," by F. DARWIN and A. BATESON; 2. "Hydroids and Polyzoa of Mergui Archipelago," by Rev. T. HINCKS; 3. "Tissues of Sporophore in Mosses," by J. R. VAIZEY.

DUMFRIES HORTICULTURAL IMPROVEMENT ASSOCIATION.—The first monthly meeting of the second session of this Association was held in Greyfriars' Hall on Thursday evening, January 8. Mr. M'CREATH, the President, read an interesting and instructive paper on the Gloxinia. Starting its history from its introduction, when its flowers were only about the size of our present type of Pentstemon, he traced it to its gorgeous and immense size at the present day, to which care and cultivation have brought it. The cultural directions were treated in a masterly way, which showed that they had been drawn from practical experience.

MESSRS. WEBB & SON'S SPECIAL PRIZES.—As special encouragement to good cultivation in the vegetable garden, this enterprising firm of seedsmen and nurserymen, Wordsley, Stourbridge, intend to give prizes of sums of 5*s.* to £1 (and, in certain cases, seeds), for collections of six kinds of vegetables. In the case of the Royal Horticultural Society of London special prizes will be offered besides, for Melons, Peas, Beans, Cabbages, Tomatos, Banbury Onions, and Potatos. In many of these competitions the prizes are awarded to kinds that have been raised or selected at Wordsley. The various shows at which the prizes can be contended for number eighty-three, and are distributed over all parts of England and Wales.

CITY OF LONDON COLLEGE.—During Lent Term, 1887, Professor BOULGER, F.L.S., F.G.S., will deliver a course of ten lectures on Forestry, commencing January 14, at 7 P.M., with special reference to the examinations of the Surveyors' Institution. Practical demonstrations in the country will be given during the Spring. The text-books recommended are BROWN's *Forester* and BAGNERIS' *Elements of Sylviculture* (translated by FERNANDEZ and SMYTHIES). The syllabus:—Climate and Trees—Land Suitable for Arboriculture—The Draining and other preparation of the Land—Nurseries and their Management—Planting Operations—Thinning and Maintenance—Felling and Barking—Timber Measurement—Exploitation and Management of Coppice—The Distinctive Characters of the various British Timber trees.

EARLY VARIETIES OF TOBACCO.—The following kinds of Tobacco have been recommended to Mr. R. VEITCH, of Exeter (R. VEITCH & SON) by some of his American correspondents, as being well suited for cultivation in this country:—

"*Sterling*, which is the newest and brightest of the yellow type, and, being the earliest to ripen, is surest in localities liable to early frost. Second, we would give the place to

Hopgood, which is allied to the Yellow Oronoko, but it is a fine and desirable variety. Next in order comes the

Granville County Yellow, a superb variety, and a favourite with many planters, and among the earliest to mature and ripen.

Tuckahoe, a first-class variety in every respect, new, and preferable to most of the older varieties, in that it possesses more body; leaf long and extra fine.

White Stem Oronoko.—From the yellow Oronoko, which it resembles, and a most excellent variety. This variety is greatly preferred in localities where the finest types are grown.

Yellow Oronoko.—A reliable old yellow variety, grown for more than fifty years, and improved with reference to the production of yellow stock.

Hyco.—A new variety, and the easiest cured of all the yellows; fine texture, good flavour, and sells well. This is a hybrid Oronoko and Gourd-leaf; a beautiful and desirable variety.

Gold Leaf.—One of the newest and best of the brights.

These are the most popular sorts, and are all earlier than any of the varieties that you named. For growing in England Yellow Prior is the most suitable of all named in your list, but the sorts we name are even earlier than Yellow Prior, and therefore, most suitable for cultivation in your latitude."

CHLOROPHYTUM ELATUM.—The variegated form of this species makes one of the most charming of foliage plants, either for pot culture, or, better still, for planting out on the rockery or in the border of the conservatory. Some masses in the Temperate-house at Kew are especially attractive at the present time. In gardens and in nurserymen's catalogues generally this is known as Anthericum latifolium albo medium pictum!

A PLEASING CONTRAST.—In the conservatory at Kew one of the prettiest groups is formed by a number of well grown and well flowered plants of Peristrophe speciosa (the old Justicia speciosa) and Reinwardtia trigyna (Linum trigynum). The mass of colour, violet-purplish and golden-yellow, is relieved by Grevillea robusta and Albizzia lophantha

NEPHTHYTIS LIBERICA.—At present this rare Aroid is somewhat attractive in the Aroid-house at Kew. The heads of bright yellow fruits—each of which is about the size and shape of a small Coffee berry—are borne on erect scapes nearly as long as the petioles of the triangularly sagittate green leaves. The species was introduced from Liberia half-a-dozen years ago.

"TURNER MEMORIAL" PRIZES.—The money subscribed twelve months ago as a memorial for the late Mr. C. TURNER, of Slough, amounted to £182 18*s.* 6*d.* That sum was invested in Consols, and £20 will be available for prizes every year for a period of ten years. The £20 will be given in prizes next season, at the following exhibitions:—The National Auricula (Southern section) and Primula Society; at South Kensington, on April 26, 1887, for six show Auriculas: the exhibits must contain at least one representative of each of the four classes—green, grey, white, and self-edged. Four prizes: 40*s.*, 30*s.*, 20*s.*, and 10*s.* The National Carnation and Picotee Society, to be held at South Kensington on July 26, for six distinct Carnations, and six distinct Picotees, Four prizes: 40*s.*, 30*s.*, 20*s.*, and 10*s.* The foregoing prizes are to be competed for by amateurs who do not employ a gardener regularly. The Newcastle-upon-Tyne Botanical and Horticultural Society's Exhibition, to be held in the Jubilee Exhibition Grounds on August 30 and 31, for twelve distinct Roses, three prizes: 50*s.*, 30*s.*, and 20*s.* For twelve distinct Dahlias, three prizes: 50*s.*, 30*s.*, and 20*s.* To be competed for by amateurs or gentlemen's gardeners.

THE "BOTANICAL MAGAZINE."—The January number opens with a good illustration of

Hedychium Gardnerianum, t. 6913, a very handsome yellow-flowered Scitamineous plant, the capsules of which when they burst reveal the seeds covered with a brilliant red aril, which renders them

as striking as the flowers. It is a native of Nepaul. This plant, with its noble spikes of yellow fragrant flowers, ranks in beauty and stateliness with any Orchid, and may moreover be grown in any greenhouse, a stove temperature being by no means essential.

Solanum Wendlandi, t. 6914, is a new species described by Sir Joseph Hooker, and stated to be a climbing plant, native of Costa Rica; at Kew it covers the rafters of the Water Lily house. The leaves are pinnately divided, and the large lilac flowers are borne in terminal cymes, each flower being about 2½ inches in diameter. This is a very handsome plant, and should be valuable for the decoration of corridors, conservatories, and similar places.

Amasonia calycina, t. 6915, is the species lately introduced by Messrs. Veitch from British Guiana and North Brazil, under the name of A. punicea, but Sir Joseph Hooker points out that it differs from the species so named by Vahl, and therefore assigns to it the name here given. Nothing need be added by us to the account of a stove shrub which has received a general meed of applause.

Primula erosa and *P. capitata*, t. 6916, are both purple flowered Primroses in the way of P. denticulata.

Nymphæa flava, t. 6917, is a very elegant species, native of Florida. The flowers are 4 inches in diameter, pale yellow, opening at noon and remaining expanded till sunset. Mr. Watson, describing this species in the *Garden*, notes the elongated rootstock, which becomes covered with scale-like tubercles and forms successive apical crowns of foliage and flowers subtended by a ring of roots, whilst the lateral tubercles develope stolons from which the plant is reproduced. Mr. Watson further remarks that it has been established in ponds in Kent, but at Kew it is grown in the Water Lily house.

Elaeodendron Chabrieri.—We have already mentioned that the plant called in gardens Aralia Chabrieri is really Celastrineous, and probably a species of Elaeodendron. M. Pynaert, in the *Revue de l'Horticulture Belge*, says that the lateral shoots, treated as cuttings, never produce good plants, and are of no more use than are cuttings made from the side branches of Araucaria excelsa.

Horticultural Club.—The usual monthly dinner and *conversazione* were held at the Club rooms on Tuesday last. There was a large and influential gathering of the members, including the Hon. and Rev. J. T. Boscawen, Chairman; Dr. Hogg, Dr. Masters, the Rev. F. H. Gall, Messrs. Harry Veitch, Geo. Deal, H. J. Pearson, Arnold Moss, Francis Rivers, C. T. Druery, A. H. Pearson, Geo. Paul, Geo. Prince, H. Herbst, &c., and the Secretary. The subject for discussion was the Royal Horticultural Society. A very animated discussion followed the introduction of the subject by the Chairman, who stated that he was sure that the utmost confidence might be reposed in the Council. A very strong desire to be of use to the Society was expressed by all present, and a sub-committee was appointed to take the whole matter into consideration, to consist of Mr. H. J. Veitch, Chairman; Mr. W. H. Pearson, Vice-Chairman; Dr. Masters, Messrs. Geo. Deal, Arnold Moss, A. H. Pearson, Francis Rivers, H. Herbst, and Wm. Bull, with power to add to their number.

Publications Received. — *Permanent and Temporary Pastures.* By M. J. Sutton. Second edition. (London: Hamilton, Adams & Co., Paternoster Row.)—*Handbook of Practical Botany.* By E. Strasburger. English edition, edited from the German by W. Hillhouse, M.A., F.L.S. Also *Elementary Textbook of British Fungi.* By W. D. Hay, F.R.G.S. (London: Swann, Sonnenschein, Lowrey & Co., Paternoster Row.)—*The National Footpath Preservation Society: Second Annual Report*, 1885—6. (London: Essex Street, Strand, W.C.)

The Orchid Houses.

GENERAL REMARKS.

The beginning of the year has not been a favourable time for Orchids, much artificial heat and very little fresh air being very trying to the constitution of all Orchids, especially those from the East Indies.

The sun will shortly be gaining strength, and care must be taken to check the fires in time to prevent the temperature rising too high, it being never safe practice to give air at the winter season. Although many plants are starting to grow, they should be kept moving slowly, for if excited by a high temperature that cannot be maintained for the next two months, it will make them tender, and less able to withstand any check that might occur. Among Saccolabiums now flowering is the beautiful S. violaceum Harrisonianum, which presents a beautiful picture when profusefy flowered. Our plant with a dozen spikes makes a charming plant for a basket. Masdevallias, that were broken up and repotted last September and October, are now making new growths, and rooting freely, the old foliage appearing as fresh as if no disturbance of the roots had taken place. They will require more water at the root, and plenty of moisture should be diffused through the house, These and cool Odontoglossums can still be potted, if not already done, but I would advise the temperature being kept up to 50°.

Sophronitis grandiflora, now growing and flowering, does best in a temperature of from 50°—55°. During the winter it should be top-dressed with live sphagnum, and be kept always moist. Oncidium sarcodes sometimes behaves in a rather perplexing manner, as it will often refuse to make new growth at the proper time, but flowers again from the same pseudobulb; when this happens the plants soon show signs of being weakened. For the last two summers we have placed the plants in an Odontoglossum-house, taking them to a warmer house to flower; this treatment seems to suit them so far. Some of the Cœlogynes now starting to grow, are C. Massangeana, C. viscosa, C. sparsa, and the small C. fimbriata. These varieties should be top-dressed or potted, if found necessary. Brassavola Digbyana, if starting into growth, should be attended to. This Orchid grows and flowers best suspended in a basket in the lightest part of the East Indian-house, but B. glauca flowers best in the Cattleya-house. The following scale of temperatures for the various houses will suit all requirements for a short time to come:—Phalænopsis-house, 65° to 70°; East Indian, 63° to 68°; Cattleya, 58° to 65°; cool Odontoglossum, 48° to 55°. Cattleya Trianæ and Odontoglossum crispum will open their flowers better if the temperature is allowed to rise several degrees on bright days with sunshine. *C. Woolford, Downside, Leatherhead.*

The Flower Garden.

The late heavy snowfall of the 26th ult. has seriously injured the Coniferous trees, and permanently disfigured many old Cedars. Junipers, Cupressus, and the Thuias of many species, have come in for a full share of damage, few of them but have been opened out. It will be necessary to tie such plants up, so as to get them into their original shape. This may be done with tar twine and a few hoops of galvanised wire, so placed as to be hidden by the foliage. The large wounds caused by the breaking off of large branches should be neatly trimmed in mild weather, and painted over with some dark-coloured paint, to prevent bleeding, and to hide the wounds.

Advantage should be taken of bad weather to rename all the plants in the herbaceous borders and beds, as well as Roses, also the pegs which mark bulbs and other deciduous plants which bear no indication of their existence, otherwise such plants are liable to get disturbed in planting and digging the beds and borders.

Anemones and Ranunculuses.

Anemone japonica and its varieties make a charming bed on a lawn in autumn, and it is worth a little extra trouble. The bed should be well trenched, and should have a liberal addition of new soil, and a fair amount of well-decayed manure mixed with the staple as the work proceeds.

Towards the end of the month Anemones and Ranunculuses may be planted out in dry situations. A good deep sandy loam suits them best, well enriched with rotten manure. They will make a good succession to such as were planted in October. If the roots are very dry, as they invariably are when purchased at a seed shop, they should be put in moist sand in a room for a few days prior to planting them; this will plump them up. If put in the cold moist ground as they are received many of them decay before they start into growth. Where it is desired to increase the stock seed may be sown, and, if properly treated, some of the strongest will flower in autumn, but most, if not all, will flower the following spring. The ground at planting time must be in a dry state; if otherwise, defer the operation until it is in a suitable condition. The best way to plant Anemones and Ranunculuses is to throw the ground into beds and open little drills with the corner of the hoe about 3 inches deep and 6 inches apart Place the roots 4 inches from root to root, well dust them over with sharp sand, and cover up with the soil. *W. M. Baillie, Luton Hoo.*

Plants and Their Culture.

CHRYSANTHEMUMS AND FUCHSIAS.

Those who grow Chrysanthemums principally for exhibition will have taken cuttings before this time, but cuttings to be grown into plants for decorative purposes may be taken as late as the middle of February. For decoration, varieties that will keep up a succession of blossom over as lengthened a period as possible are the most useful; such kinds as La Bien Aimée and Petite Mignonne are, however, too early to be valuable; but a collection which commences with James Salter and Lady Selborne, and ends with Ethel, Meg Merrilies, Golden Dragon, and Princess Teck, &c., are invaluable; and where a quantity of white flowers is required at Christmastide the latter should be grown in numbers.

Fuchsias may now be brought from their resting quarters, be pruned, and placed in a light house where they can be syringed on fine days; when their buds begin to swell moisten their balls of soil through, and as soon as growth commences remove the old soil from the roots and repot.

Watering.

At all times this requires care, but during the winter months, when the majority of plants are at rest, and consequently more susceptible to injury by being indiscriminately supplied, it is very important that it should be skilfully attended to. When procurable soft water should be used, and at the maximum temperature of the house in which the plants are: water containing lime or iron is injurious to some plants. Pot plants should be examined individually, and as far as possible one man should always attend to the same plants. It is difficult to lay down lines satisfactorily for watering, it demands diligence and intelligence on the part of the operator.

Climbers and Pillar Plants.

These may now be looked to. Allamandas should be taken down from their trellises and pruned, and those that have filled the space allotted them should be cut well back into firm wood. Stephanotis, Thunbergias, Clematis indivisa, and others, if crowded, should be re-arranged, and have their weak and useless growths removed. Such strong growers as Tacsonias, Passifloras, and Bignonias, are excellent for furnishing the roofs of large conservatories where in pruning them it is not advisable to spur all the shoots in at once, but to regularly cut out the longest growth as

they finish flowering, and never allowing them to become entangled. Plumbago capensis and P, rosea form good pillar plants; the former should be cut back in such a manner as will ensure an even break of young growth to blossom in due time. If the points of the latter are removed with their faded racemes latent buds will burst and yield a second supply of flowers. Jasminum gracillimum is a fit companion to grace a pillar.

EARLY FLOWERING STOVE PLANTS.

The fragrant clusters of Toxicophlæa spectabilis now opening are very suitable for mixing in bouquets, &c. The plant blossoms freely in a young state; after flowering its longest shoots should be stopped to cause them to break, and the plant kept in a uniform shape. Tabernæmontana and Psychotria (Glonera) jasminiflora are also valuable for cutting purposes, and require similar treatment to the above. Mussænda frondosa is likewise a desirable plant. It occupies little room, and produces its heads of white bracts profusely. These useful plants all deserve to be generally cultivated. They are as easily managed as the Gardenia, and can be increased by cuttings in spring if placed under a bellglass and afforded stove temperature. *Thomas Coomber, Hendre Gardens Monmouth.*

HOME CORRESPONDENCE.

THE BLUE TIT A CARNIVOROUS BIRD.—Having for the last two or three days observed the movements of the different kinds of birds, to try and get at their various modes of living at this sharp season, I am enabled to set before your readers some peculiar instances of the means adopted to satisfy their hunger. The first is respecting the common blue tit. On looking round my fruit trees, thinking the birds might have been taking the buds from them, I observed under several Green Gage trees a quantity of what, at a distance, appeared to be the outside scales of buds, but which, on crossing over the border, I was surprised to find were the legs, wings, and the lower parts of the bodies of bees. It occurred to me at once that something had been robbing my beehives; so I watched for a few moments, and a blue tit made its appearance on the top of the wall, and suspecting he was the depredator, I had not long to wait before I saw him hop on to a beehive, and in an instant enter the smallest hole of the hive; and when he came out he had a little busy bee in his beak, when, hopping on to the Green Gage trees, he quickly devoured it except the parts I have before named. I at once determined to put a stop to these nefarious doings of the blue tit, and had some little steel traps set on purpose to catch them. But the first bird caught was a sparrow, which I was surprised to observe was being devoured by these blue tits; who had set about their task with so much energy that they had almost eaten off his head whilst still in the trap. Not being an advocate for the destruction of birds, knowing the incalculable amount of good they do, I would not kill birds indiscrimately; but this particular bird (the blue tit) does a great amount of harm at all seasons, for if they are not eating bees in summer, they are picking holes in Apples, Pears, and other fruit, entirely spoiling them for dessert purposes. In my garden the blackbird has been detected in eating snails and slugs (although this is not generally believed), but we may assume that it is hunger that obliges these birds to eat sorts of food they would otherwise reject. *Alfred Bishop.*

EARLY SEED ORDERS.—Those horticulturists who are about to purchase seeds would confer a great benefit upon their respective seedsmen by sending their orders early, especially during snowy or frosty weather, as by this means the great strain upon the seedsmen's staff that must otherwise arise immediately the weather changes, would be considerably relieved, and equal advantage would accrue to the purchaser, inasmuch as a greater amount of care could be devoted to the proper execution of the order. *A Working Seedsman.*

BLACK SPOTS ON PELARGONIUM LEAVES.—My attention was drawn to some minute black spots on the leaves of some Pelargonium cuttings in a vinery, the inside border of which had been dressed with cow-dung (both upper and under sides); under the lens they look like very small Onion seeds. Have I traced them to the right source—viz., that they are spores of a fungus (Pilobolus crystallinus), which I found very plentifully on the surface of the border? The mycelium white, flocci crystalline, yellowish, and terminated by a black spore-case. The cuttings are 2½ feet above the border. Is the fungus likely to injure the Vine rootlets? *Robert M. Lingwood.* [Yes; we do not think the Vine will be injured. ED.]

CHRYSANTHEMUM BELLE PAULINE.—Many complaints have appeared in the Press about this variety during the past season. It is now flowering here in a cold house in very good condition, and proves very acceptable now that most of the other varieties are over. Our plants were grown on naturally without "taking" any of the buds, as we require them for cutting and conservatory decoration. *W. H. Divers, Ketton Hall.*

A CHEAP FUMIGATOR.—The following description of a handy, cheap utensil for fumigation (fig. 17) is taken from the *American Florist* of December 1, 1886. It is the invention of Mr. J. L. Dillon, an American florist:—

"Have a tinner make a cylinder of sheet iron (the same as that used for stove-pipe) 2 feet long and 8 inches in diameter. Cut a small piece out of the lower end to allow for draught, and make a loose fitting cover for the top, the latter to be pierced with forty quarter-inch holes, A brick placed against the hole at bottom will regulate the draught.

FIG. 17.—A CHEAP FUMIGATOR.

"We make our Tobacco stems quite wet, turn the fumigators upside down, fill full of stems, place a few shavings on top, place it on the ground or cement-walk, light it, and proceed with the others in the same way. We use three of them in a house 23 by 130 feet. As soon as the stems have caught fire we put on the lid and place a brick before the hole so as to give but little draught, and retire, knowing that the stems will smoke for nearly an hour and need no further attention. In fumigating 10 feet houses we fill the fumigators only half full. Used in this manner we have never burned any plants, and consider them fully equal to anything we have seen for the purpose."

HORTICULTURAL EXHIBITIONS.—Your correspondent, Mr. J. Rust, on p. 757, of vol. xxvi., raises some important points in connection with this subject, one that may now be profitably discussed, the campaign for this season being over and the heroes of many hot struggles resting on their well earned laurels. Mr. Rust states, and with truth, "Some exhibitors sometimess place on the tables articles not of their own growing," although in the schedule it is stipulated that subjects intended to be shown for competition must be in the possession of the exhibitor at least a month previous to the date of exhibition. The question naturally arises, How is the evil to be averted? Not easily or satisfactorily answered. If exhibitors choose to be dishonest, detection being well-nigh impossible, no amount of rule-making will make them honest. While, therefore, we deplore the evil, we can only hope for its extinction by the action of those who cause its unpleasant existence—the evil-doers themselves. Regarding the matter of "own growing," although it may not be quite pertinent to the question at issue, I raise the point. Here it is:—Is an exhibitor who allows another to "dress" his flowers acting quite straightforwardly when, in the absence of such "dresser," it is probable his flowers would be simply nowhere? I know we are told, "What is not forbidden is allowed." I shall be reminded, probably, I am radical and not practical in my ideas. But why not abolish this dressing business entirely? It is a mild species of deceit, particularly to the public, who go home thinking they can bring their pets to the same pitch of perfection, utterly and blissfully ignorant of the process which the subjects on the exhibition table have gone through. As a practical test of the matter it would not be a bad idea for some public-spirited and independent society to leave the "beaten track," and in the case of prizes for florists' flowers stipulate that all dressed flowers will be disqualified; the public would then see flowers in their true natural dress, in which aspect they would be none the less truly charming to those of cultivated taste. Another point: the repeated exhibition of the same subjects. Only recently talking to a successful exhibitor, he, pointing to some things in his collection which had gained him first honours, gave me quite a catalogue of the different places at which they had figured. This would appear to be a matter requiring the attention of schedule framers. The whole subject of horticultural exhibitions is an interesting one, and the present time, when thoughts will soon be turned to making arrangements for next season's tournaments, seems an appropriate one in which to discuss the subject. *B.*

CALANTHE VEITCHII ×.—It may interest you to know that a couple of sprays of the striped form, referred to at p. 45, are just now, and have been since Christmas, adorning a corner of my sitting-room in an old china vase. It may not be so uncommon as is supposed. *A. D. Webster.*

LÆLIA ANCEPS HILLIANA.—On reading the notes of your correspondent, "An Amateur," in the present week's *Gardeners' Chronicle*, respecting the fragrance of this Orchid, I was reminded of a circumstance which occurred a few years ago and somewhat perplexed me for a while. We have a variety of L. anceps which is deliciously fragrant for a few hours in the early part of the day, if the sun shines upon the glass immediately above the bloom, or when the sun's rays touch the bloom, but which on dull and cloudy days yield no perfume. May not this be the case with the variety spoken of by "An Amateur," which, according to his showing, is fragrant in some places but not in all? *N. Blandford, The Gardens, Moor Hill, West End, Southampton.*

THE DERIVATION OF THE WORD PICOTEE.—I think I can find a more savoury derivation of the word Picotee than that suggested by the Rev. C. Wolley Dod in your last number. I cannot understand anyone loving a pretty flower naming it after the small-pox (or to be more strictly exact, the small pock). Picotees are fringed with points, and it seems probable that this departure in character from the entire edge of the Carnation suggested the distinctive name of Picotee, from the French *pic* = peak or point, or the Spanish words, *pico* and *picacho*, meaning a sharp point and other allied things. *George Maw.*

SALVIA RUTILANS.—I find this new Salvia very useful, as it flowers after S. splendens is over and before S. Heerii commences, thus keeping up a continued supply; the spikes are also more useful for many purposes than either of the above-mentioned varieties would be, as they are much lighter in appearance; in colour it is very similar to S. Heerii, and the same treatment suits it well. S. Pitcheri is a very telling thing also at this season, when blue flowers are very scarce, but it is far from being as vigorous and free in growth as the others. *W. H. Divers, Ketton Hall.*

EPIPACTIS OVALIS.—A new station for this interesting and pretty Helleborine has been found during the past season; and one, fortunately, where it occurs in great abundance. How this plant survives is a mystery to more persons than myself, for to see it springing from the cracks of the limestone rocks, where there is not a particle of soil, and exposed to the full sunshine at one time, and withering blasts at another, is certainly apt to arouse one's suspicions as to whether or not the plant is not closely allied in manner of growth to some epiphytal member from the Indies. *A. D. Webster.*

PEARS.

A SELECTED LIST OF ONE HUNDRED VARIETIES OF PEARS.

(Continued from p. 20.)

October.

1. Alexander Lambre.—Medium size, very even and regular, quality uniformly good; great cropper.
2. Autumn Nelis.—Small, but rich and pleasant; crops well.
3. Baronne de Mello.—Medium size, extremely juicy, sometimes rich; good cropper.
4. Beurré Hardy.—Large, handsome, very richly flavoured, juicy; moderate cropper.
5. Beurré Bosc.—Large, moderately good; great cropper.
6. Beurré des Charneuses.—Large, pale, fine, melting; good quality.
7. British Queen.—Medium, rather pretty, but of moderate quality.
8. Comte de Lamy.—Rather small, crisp, juicy; flesh very rich; great cropper; good (Fig. 21).
9. De Maraise.—Medium, very tender and juicy; excellent; good bearer.
10. Doyenné Boussoch.—Large, handsome, generally of poor quality; great cropper.
11. Eyewood.—Bergamot-shape, melting, brisk acid flesh—extremely pleasant.
12. Fondante d'Automne.—Of medium size, very juicy and rich—one of the richest Pears; crops well.
13. Gansell's Bergamot.—Large, handsome, fine quality; poor cropper.
14. Louise Bonne of Jersey.—Handsome; the leading Pear of its season; fine quality—great cropper (Fig. 19).
15. Jersey Gratioli.—Large, melting, brisk acid; excellent; great cropper (Fig. 22).
16. Maréchal de la Cour.—Large, melting; excellent sub-acid flavour; one of the best.
17. Seckel.—Very small, but extremely rich; musky flavour (Fig. 20).
18. Suffolk Thorn.—Medium, fine, tender, flesh rich; a good hardy sort.
19. Thompson's.—Medium, very juicy, and richly flavoured; great bearer.
20. Urbaniste.—Large, very melting, and juicy; richly flavoured, excellent; a spare cropper (Fig. 23).

The month of October may be termed the height of the Pear season, the choice of good varieties being almost unlimited. Many others might be added to this list, but those we have named appear to us to meet all requirements. They are all adapted for growing as pyramids or bushes, or on walls if desired.

SOCIETIES.

ROYAL HORTICULTURAL.

Tuesday, January 11.—This, the first meeting of the year, was held in the Conservatory at South Kensington on the above date. As might have been supposed, the number of objects brought forward was rather limited, but several were of considerable interest, especially the fine varieties of Primula sinensis sent by Messrs. Sutton & Sons, and the varieties of Lælia anceps, and a few other beautiful Orchids, from the gardens of Baron Schroder.

Scientific Committee.

Present: Dr. M. T. Masters, F.R.S., in the chair. Messrs. Lynch, Lowe, Maw, Wilson, O'Brien, Church, Bennett, Pascoe, McLachlan, Michael, Smee, Smith, Ward, Morris, Hon. and Rev. Mr. Boscawen, Col. Clarke, Rev. G. Henslow, Hon. Sec.

Araucaria Leaves Attacked by Rhizoccus Araucariæ.

Mr. McLachlan reported on the specimens exhibited at the last meeting, and pronounced them to be immature forms of the species above named. It is noticed by Maskell, a careful writer on New Zealand Coccidæ, and identified by Comstock, an American writer, with a similar form on imported Araucarias in California. It appears to be specially abundant on A. excelsa, the Norfolk Island Pine.

Carbonised Prehistoric Wheat.

Dr. Masters exhibited specimens from a lake near Neufchatel, on which Mr. W. G. Smith will report.

Orchid Leaves attacked by Cocci.

The Hon. and Rev. Mr. Boscawen showed leaves with black cocci upon them, of which the eggs or young

Fig. 18.—corm of ixia diseased.

are devoured by a small species of ant. Mr. O'Brien said he was familiar with the coccus on Cypripediums. Mr. Maclachlan will report upon it at the next meeting.

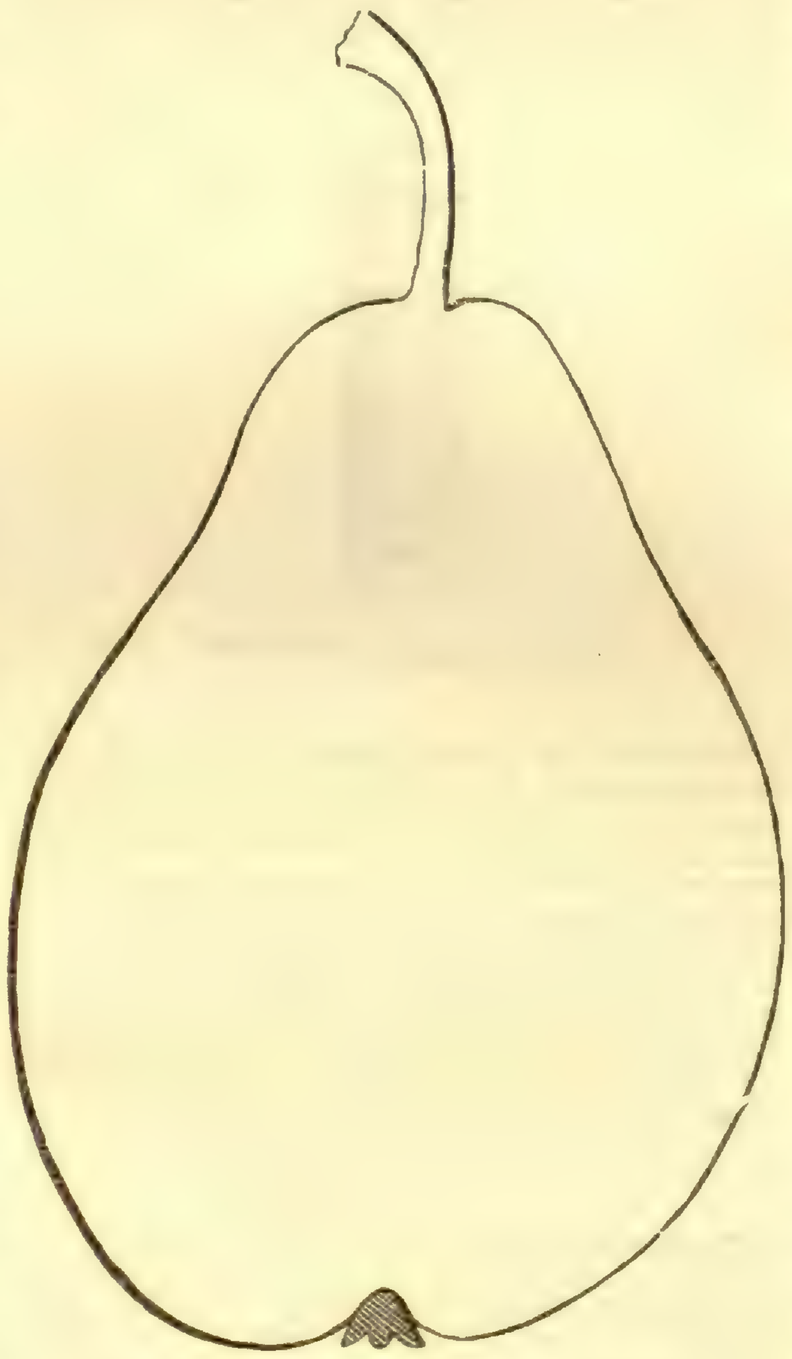

Fig. 19.—pear, louise bonne of jersey.

Pleurothallis Proliferous.

Mr. O'Brien exhibited a plant which, after flowering, produced a leaf-bud from the base of the peduncle.

Abies grandis.

Dr. Masters exhibited a portion of a thick trunk broken across horizontally by the late severe gale and snowstorm, received from Mr. Noble.

Narcissus Pannizianus.

Mr. G. Maw exhibited a specimen from South Portugal. It is allied to N. papyraceus, and was found by Mr. A. W. Tait in 1886 in the province of Algarve, not having previously been known as a native of Portugal.

Disease in Corms of Ixia.

Mr. Maw referred to the specimens brought before a previous meeting, and remarked that the affection was due to the change of starch and cellulose into dextrine; a common occurrence in the presence of animal matter, and which, he thought, in this case, might be produced by the excessive or ill-timed use of animal manure.

Malope malacoides.

Mr. Maw also exhibited a coloured plate of this plant, together with the rhizome and fleshy roots, which are used in Tangiers, &c., as a "saponary."

Figs Attacked by Ustilago ficuum.

The following communication, with specimens, were received from Mr. Plowright:—"Herewith I send you half a Fig which came out of a box of Figs opened for dessert on Christmas Day. It is affected with Ustilago ficuum,. It is alluded to in the new edition of the *Handbuch der Pflanzen Krankheiten*, by Dr. P. Sorauer, p. 209, as occurring in the interior of the fruit of Ficus carica, and is closely allied to the Ustilago Phœnicis, Corda, which occurs in Dates. Fischer van Waldheim, in his *Ustilaginées*, p. 18, describes the spores *en masse* as black but when seen separately they are blackish-violet, smooth, globose, with a thick epispore, and measure from 3—8 micromill. This accords with the specimen sent herewith. The spores, as I find them, are in the vast majority of cases about 3 micromill. across, but scattered here and there amongst them are a few much larger ones (8 micromill.), but I do not find any intermediate ones. The spores of Ustilago Phœnicis are very similar, but as far as I know are more uniform in size (4—5 micromill.)."

Plants Exhibited.

Two rare species of Salvia—viz., S. Leonuroides (Chili) and S. pulchella, by Mr. Lynch, from the Botanic Gardens, Cambridge; Korolkowia discolor (from Central Asia): this is perfectly hardy: forwarded by Mr. Ware, Tottenham.

Obituary.

Dr. Masters drew attention to the loss of two members of the Society—Marshall P. Wilder and Mr. T. Moore. It was agreed that a letter of condolence should be sent to Mr. Wilder's son.

Floral Committee.

Present: G. F. Wilson, F.R.S., in the chair; and Messrs. H. Turner, A. F. Lendy, E. Hill, J. O'Brien, H. M. Pollett, G. Paul, J. Dominy, H. Ballantine, C. Pilcher, C. Noble, R. Dean, Amos Perry, B. Wynne, W, Holmes, A. Bradshaw, T. Baines, G, Duffield, H. Herbst, J. Walker, W. Goldring, G. Maw, W. H. Lowe, H. Bennett, J. Douglas, M. T. Masters, and J. Fraser.

The beautiful collections of cut flowers of the different varieties of Lælia anceps, shown by Baron Schroder (gr., Mr. H. Ballantyne), comprised the whole of those known to cultivators, and as they were well grown, with generally fully developed flowers the collections was of much interest. The following are the names of the varieties:—Laelia, anceps, the original of the species, L. a., alba, L. a. Williamsi, L. a. Percivaliana, L. a. Sanderiana, L. a. Dawsoniana, a very fine flower with sepals and petals of the purest white; and Laelia Stella. Other species of Orchids shown were Laelia triophthalma, a flower having a lip of a beautiful shade of maroon and throat of yellow, striped with the first named colour; Cattleya Percivaliana superba. The lip, which was the finest feature, purple, margined with mauve, the colour of the sepals and petals, and the throat a deep orange colour; Cypripedium Leeanum superbum with the usual predominating dorsal sepal, white striped and spotted with dark purple. C. microchilum superbum, a flower almost circular in outline, the petals and sepals being broad enough to touch each other. All parts of the flower are striped and spotted with minute spottings of carmine.

C. G. Hill, Esq. gr., S. Davenport, Arnott Hill, Arnold, Nottingham, showed Lælia Sanderiana, a plant with two spikes of almost 3 feet in length, each terminating with four blooms of good size, the large pure white sepals and petals contrasting finely

with lip of purple, which is stained with yellow at the base.

W. Vanner, Esq., Camden Wood, Chislehurst, exhibited two plants of Barkeria Vanneriana, the long waving flower-stalks being surmounted with a rispe of bright purple blooms, and making this Orchid a graceful subject for cutting or for standing amongst dwarfer plants.

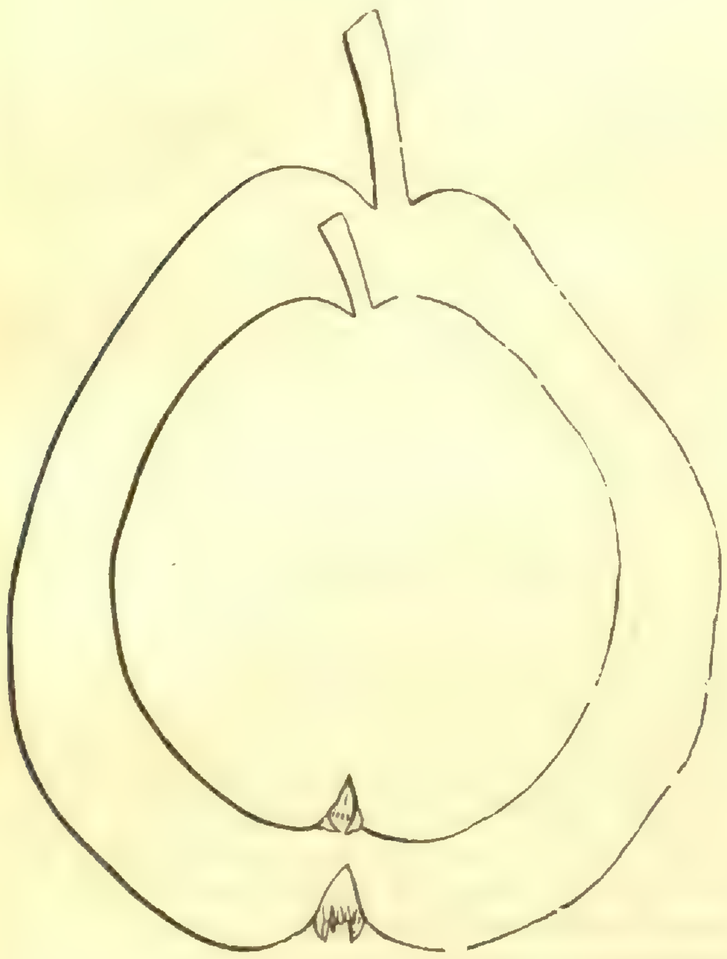

FIG. 20.—PEAR, SECKEL.

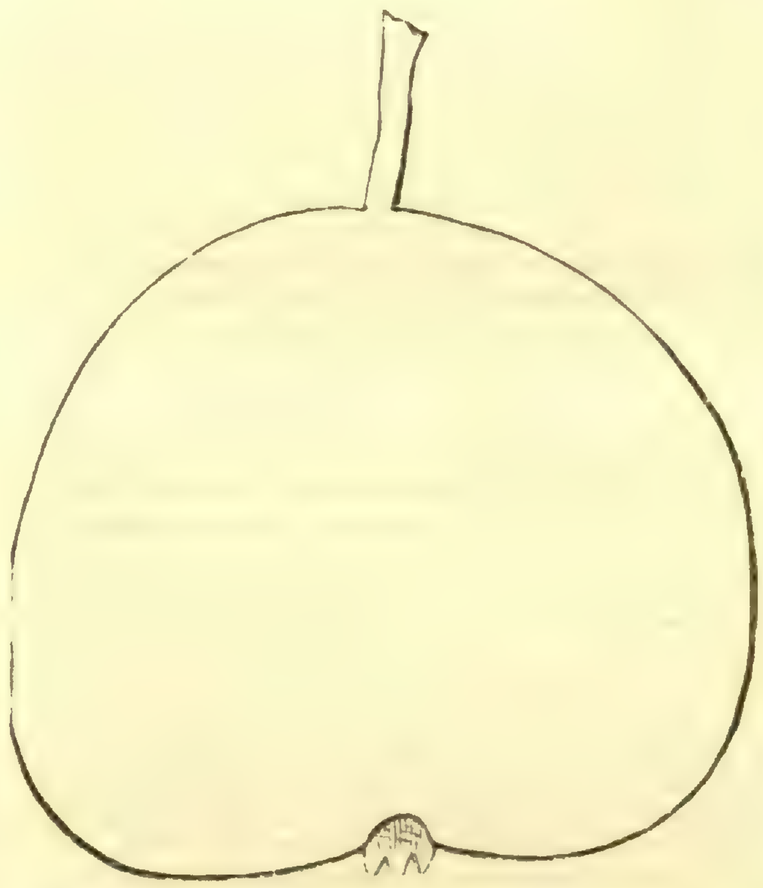

FIG. 21.—PEAR, COMTE DE LAMY.

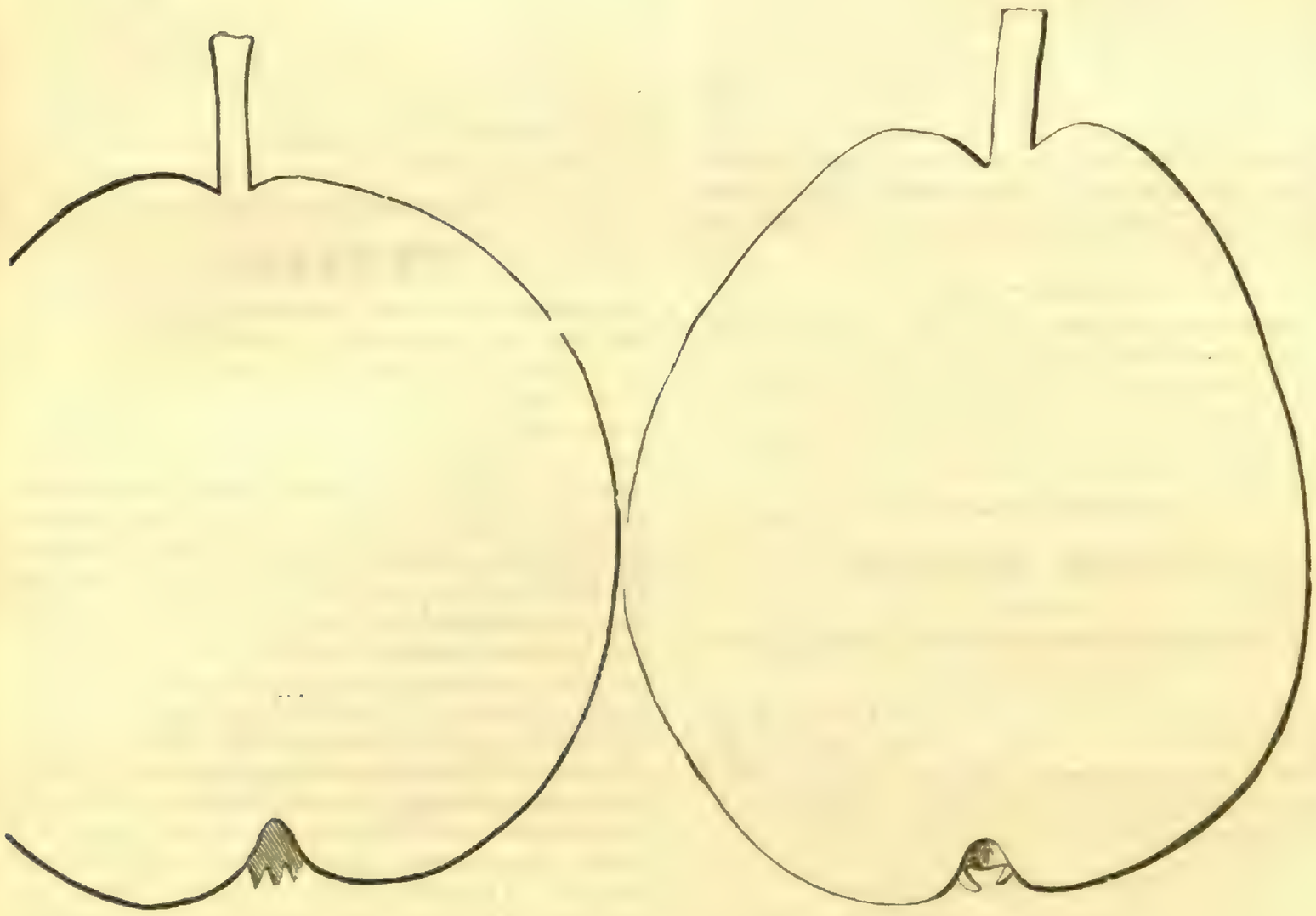

FIG. 22.—JERSEY GRATIOLI.

FIG. 23.—URBANISTE.

OUTLINES OF PEARS. (SEE P. 84.)

T. G. Tautz, Esq., Studley House, Hammersmith (gr., Mr. Cowley), showed Odontoglossum Lucianum, a starry flower, with a ground of pale lemon colour, spotted with light brown; Cypripedium Marshallianum, a pretty variety, the dorsal sepal white, with minute reddish spots, placed with great density, similar spottings finding place over the surface of the sepals. The lip is pale yellow. Camellia Lady Dolly, a semi-double, rose-pink, striped crimson in colour, came from the same garden.

Messrs. Maseereel Frères, Ghent, showed a species of the singular Restrepia with golden-brown flowers thickly sprinkled with small dots; Odontoglossum crispum guttatum, and Odontoglossum species, a flower whitish-yellow spotted with chestnut, forming a pleasing flower, the spike being as large as that of a good O. crispum, and of which it is doubtless a variety only.

H. M. Pollett, Fernside, Bickley, showed a cut bloom of Odontoglossum brevifolium, a plant that usually blooms in March and April.

Messrs. J. Veitch & Sons, Chelsea, exhibited the new Kalanchoe carnea, a dwarf Daphne-like plant, producing corymbs of pinkish flowers of a waxy consistency. The plant is a valuable addition to the winter flora, is of easy culture, good habit, and a free flowerer. It is, moreover, deliciously scented, so that it has all the points of a plant for market and for general cultivation.

Mr. T. S. Ware, Tottenham, showed Korolkowkia discolor, a plant allied to the Fritillarias. The flowers are funnel-shaped with a flat six-parted limb, of a yellowish-green colour, with purple anthers; Freesia refracta, Primula floribunda, alba Lachenalia pendula, a few Corbularias, and a yellow Chrysanthemum, a sport from Ethel, named Mrs. H. J. Jones. The flower is a late flowerer, and has straight flat florets of bright yellow.

Mr. H. B. May, Edmonton, showed Pteris tremula var. flaccida, a fine strong-habited Fern, withal graceful; the fronds are 4 feet in length and 1 foot in breadth at the base, the frondlets diminishing gradually upwards to the apex of the frond.

Messrs. H. Cannell & Sons, Swanley, showed Primula sinensis Queen of Stripes, a pale rose-coloured flower, spotted with crimson; and P. Jubilee, a deep crimson flower with prominent yellow eye; both varieties have much substance in the flower.

Mr. R. Clarke, florist, Twickenham, showed Cyclamen Albert Victor, a very dark reddish-purple—a fine colour; and C. giganteum compactum album, a fine flower with dwarf flower-stalks; C. g. Advance, a bold, strong grower, and fine quality of bloom.

Mr. F. Kinghorn, Sheen Nursery, Richmond, showed a large number of the white variety of Erica hyemalis, very nicely bloomed. This is an excellent plant for market purposes.

Messrs. C. Smith & Son, Guernsey, showed a late decorative Chrysanthemum Guernsey, of a pale yellow colour, and convoluted florets.

Mr. J. James, Woodside, Slough, showed Primulas of various shades of colour.

Mr. R. Owen, Floral Nursery, Maidenhead, exhibited Chrysanthemum Golden Gem, a beautiful bright yellow, the florets reflexed somewhat; and C. Princess Blanche, a white Japanese variety of good form.

Mr. Chuck, gr., Brodsworth Hall, Doncaster, showed an excellent boxful of cut bloom of Azalea indica, consisting of twenty-four varieties.

Messrs. Sutton & Sons, Reading, showed a very large collection (500) of Primula sinensis, well-flowered and robust, the flowers showing in all cases well above the leaves. The choicest were:—Double Rose, with at least the rudiments of a double flower in the small petals springing from the centre of the flower (this form of doubling appearing in the so-called double kinds). The flower is of a pleasing shade of rose colour, and has plain foliage. Reading Blue is also a double flower, the colour being that of a Neapolitan Violet. The foliage is Fern-like. Gipsy Queen is of the palest suffused pink with here and there spots and flakes of carmine; the foliage is like the last named, and of quite a black-green tint, making a most effective setting for the flowers. The flowers have a pretty crimped edge, showing slightly the reverse side of the petals. Rosy Queen is flesh-coloured, and has Fern-like foliage; the flower has great substance and was one of the prettiest; Double Scarlet was of a bright crimson, a neat medium flower, and possessed the usual kind of leaf. Others were Reading Scarlet, now well-known. Pearl, a white, suffused pink; Reading Blue, a single flower, with Fern foliage, the colour that of the double Reading Blue. Double Carmine, a dense truss of bloom, well elevated, the centre of the bloom having the before-mentioned form of doubling. A few other kinds of lesser merit were shown. Altogether the show of Primulas was quite imposing from its numbers, and the fine quality of the plants individually.

THE FOLLOWING FIRST-CLASS CERTIFICATES WERE AWARDED BY THE FLORAL COMMITTEE.

For Primula Double Rose, P. Gipsy Queen, P. Rosy Queen, P. Double Scarlet, and P. Sutton's Reading Blue, shown by Messrs. Sutton & Sons.

For Chrysanthemum Golden Gem, shown by Mr. R. Owen, Maidenhead.

For Lælia anceps, Sanderiana and L. a. Stella, shown by Baron Schroder.

For Lælia Sanderiana, shown by C. G. Hill, Esq., Nottingham.

For Barkeria Vanneriana, shown by W. Vanner, Esq., Chislehurst.

For Kalanchoe carnea, shown by Messrs. J. Veitch & Sons, Chelsea, S.W.

For Pteris tremula var. flaccida, shown by Mr. H. B. May, Upper Edmonton.

For Chrysanthemum, Mrs. H. Jones and Korolkowkia discolor, shown by Mr. T. S. Ware, Tottenham.

For Cypripedium Leeanum superbum, shown by Baron Schroder.

Fruit Committee.

Present: Dr. R. Hogg, in the chair; and Messrs. F. T. Rivers, W. Warren, G. Norman, W. Denning, J. Burnett, T. J. Saltmarsh, J. Roberts, G. T. Miles, J. Fitt, J. Willard, J. Woodbridge, W. Paul, A. H. Pearson, H. D. Blackmore, Harrison Weir, A. Sutton, T. B. Haywood, H. Veitch, P. Crowley.

Mr. Roberts, gr. to Messrs, Rothschild, Gunnersbury Park, showed two very fine specimens of Pine apple Smooth Cayenne, and obtained a Cultural Commendation.

Mr. Roberts, gr., Charleville Forest, Tullamore, showed his new Grape, White Gros Colmar, the berries when fully ripe attain to nearly the same colour as that of a ripe Sweetwater. It will form a welcome addition as regards colour to our late keeping varieties.

Some few seedling Apples were shewn by various persons, but no awards were made, and a Potato, Kevan's Hybrid, obtained a Certificate.

Some fine fruits of Diospyros Kaki came from General Hutt, (gr., Mr. Myles), Appley Towers, Ryde. The fruits would measure 4 inches by 3 inches in the larger and lesser diameters. so that the fruit may be regarded as being of the full size. A photograph placed alongside, showed a plant with fruit hanging thereon. The colour was orange, and the skin of a waxy texture.

Mr. Norman, gr. to the Marquis of Salisbury, Hatfield House, showed a trugful of excellent specimens of Mushrooms, which was Culturally Commended.

The following Certificate was Awarded by the Fruit Committee.

For Potato Kevan's Hybrid, shown by Mr. S. Kevan.

NATIONAL CHRYSANTHEMUM.

This first attempt on the part of any society to hold a show of Chrysanthemums so late in the winter met with a spirited response from growers, and some fairly good collections of cut blooms were witnessed at the Royal Aquarium, Westminster, on January 12 and 13 last. No attempt was made to put up Chrysanthemum plants, so that the exhibition of these flowers consisted entirely of cut blooms, arranged as bunches and single blooms.

The grand lot of Primula sinensis, sent by Messrs. Sutton & Sons, formed an attractive feature, and hardly less so the good assortment of the same species of plants from Messrs. Carter & Co., Mr. Cannell, and others.

A group or two of mixed foliage and flowering plants, and some tables filled with the usual forced plants of the season, assisted in making an exhibition of some considerable variety.

In a competition for a collection of Chrysanthemum blooms, any varieties, the 1st prize fell to Mr. Robert Owen, nurseryman, Maidenhead. The best blooms, so far as form, size, and freshness go, were found in Ceres, Jupiter, Diana Vernon, Reduplicata, Nuit d'Automne, Zaire, Duchess of Albany, La France, Golden Gem, just certificated; Thunberg, and La Traviata. These blooms would not have found place in a November show, but coming at this late season they may not be despised. Mr. Bolas, gr., Hopton House, Wirksworth, was placed 2d, his best being the handsome Cullingfordi, Cœur Fidèle, L'Incomparable, Le Chinoise, Souvenir d'Haarlem, M. Vivian Morel, and Victoria, a very good white bloom.

The competition with twenty-four varieties, pompons allowed, resulted in Mr. Walters, of Sunnyside, Burton-on-Trent, being placed 1st; these blooms were much smaller than those first mentioned, and consisted altogether of purely late autumn varieties. The 2d prize was taken by Mr. G. Stevens, St. John's Nursery, Putney, with flowers small, ragged, open-eyed, and irregular. A 3d prize was awarded to Mr. J. Hamlin, Bletchley Park Nurseries, Bletchley, Bucks, for small blooms of Princess of Teck.

For a dozen blooms, Mr. Stevens came in 1st, staging somewhat better blooms this time of Duchess of Albany, Ceres, and Jupiter.

In a class for twenty-four Japanese kinds Mr. Stevens was again placed 1st; and in the class for twelve Japanese Mr. Lister, gr. to Lord Brooke, Easton Lodge, Dunmow, was awarded the 1st prize. These were perhaps some of the best shown. Amongst them we noticed Sceptre Toulousaine, The Daimio, Comtesse Beauregard, and Thunberg; Mr. Stevens took 2d prize—Ceres being the best variety in the stand.

For six Japanese kinds, Mr. R. Owen was 1st, and had fair flowers of Mons. Freeman, M. Ivon, and La Japonaise.

Bouquets shown numbered six, Mr. Brown, nurseryman, Richmond, being 1st. This bouquet was composed chiefly of incurved flowers, yellow and white. Something more graceful in design might have been made of the material; Messrs. Davis & Jones, florists, Lilford Road, Camberwell, took the 2d prize, with an article not a whit more artistic in arrangement.

Mr. Clarke, Twickenham, made a pretty display with Cyclamen; but from want of sun during the past few weeks, Cyclamens are tardy in throwing up their bloom, and so these did not rejoice in a multitude of flowers, but the colours were good, and in a few instances novel.

Collections of Primulas were shown by nurserymen, Messrs. Cannell & Son, and Messrs. J. Carter & Co., showing handsome kinds in all the colours found in Primulas—Holborn Fern-leaf Pearl, being a pale pink flower with a convoluted margin, and Elaine, a white flower of fine quality with dark foliage, being shown with several others by the latter firm. Messrs. Carter are getting back to the old fringed and scalloped shaped flowers, instead of the somewhat flat blooms, found in most new kinds, and the beauty of the fringed form is apparent when comparisons are made.

We may not omit to mention the large collection of Messrs. Sutton & Sons, an account of which is to be found in our report of the Royal Horticultural Society's meeting on p. 85.

In the gardeners' competitions with collections of Primulas, Mr. Ives, gr. to E. C. Jukes, Esq., Hope House, Winchmore Hill, took 1st prize for nice plants with pyramids of bloom; 2d, Mr. Howe, gr. to Mrs. Fletcher Bennett, Upper Tulse Hill.

Of miscellaneous plants shwon may be mentioned. white double Primula, by Mr. G. Stevens, a specialty at this nursery; table plants by Mr. W. R. Wright, florist, Turner Road, Lee; and a good number of foliage plants, &c., well arranged on a table, by Mr. W. Holmes; Freesia refracta, Primula floribunda, Lachenalia pendula, Helleborus niger maximus, by Mr. T. S. Ware. Mr. Stevens showed a collection of six dozen cut blooms of Chrysanthemums, receiving an extra prize. A special prize was awarded to Mr. Ed. Mizen, Mitcham, for an incurved variety of Chrysanthemum, Mrs. Norman Davis. It has a good form, and is of a pure yellow colour. Mr. Thomas Ware, Tottenham, exhibited the new Chrysanthemum, Mrs .H. J. Jones.

Certificates.

Chrysanthemum, Mrs. H. J. Jones, by T. S. Ware.
Chrysanthemum Golden Queen, by R. Owen.
Chrysanthemum Princess Blanche, by R. Owen.
Cyclamen Albert Victor, by Mr. Clarke.
Cyclamen gigantea compacta alba, by Mr. Clarke.
Primula sinensis Pearl, by Messrs. Carter & Co.

TRADE NOTICES.

J. Wontner Smith, Gray & Co., 81, Finsbury Pavement, E.C.

Mr. George Gray, junr., who has assisted in the management of the business since the death of Mr. Joseph Wontner Smith, sen., has now become a partner; and in future the style of the firm will be "J. Wontner Smith, Gray & Co."

Steven Brothers & Co.

Recently Mr. Alexander Ritchie, who for the past twenty-seven years has been associated with the Milton Iron Works, Glasgow, was entertained at dinner by a number of private friends and the staff of the firm of Steven Bros. & Co., of Upper Thames Street, the London house of the Milton Foundry, of which firm Mr. Ritchie has for the past seventeen years been the manager.

The object of the gathering will be seen from the accompanying address:—

"We, the staff employed by Steven Bros. & Co., London, desire to offer you our congratulations on the occasion of your return to business after so long an absence, necessitated by the serious accident which unfortunately befell you. We unanimously acknowledge the Divine Providence which has restored you to health, and enabled you to resume the responsible position you have so long occupied, and which you are so eminently qualified to maintain. We trust that you may long be spared to promote, with the same untiring energy and perseverance, the interests of the firm you have been so instrumental in raising to its present high position. Asking your acceptance of this expression of our sympathy and esteem,—We are, &c."

"Silver Epergne,
Presented to
Alexander Ritchie, Esq.,
by the undersigned,
on his recovery from the long and painful illness occasioned by an accident in April, 1886, as an expression of their sympathy and also of their pleasure at his restoration to health."

Kelway & Son.

On the evening of Tuesday, the 4th inst., Mr. Wm. Kelway, of the Langport Nurseries, entertained the whole of the *employés* of the firm to a supper at his house. It is pleasant to record such instances of goodwill between employers and employed.

"IN MEMORIAM."

The Late Thomas Moore.—Permit me one brief tribute in your pages to Mr. Moore's memory. It must needs be brief, for were all your readers who feel as I do to claim the same privilege, not one, but many numbers of your well-filled columns, would be needed for our tribute of deep affection and profound respect. When I first became acquainted with Mr. Moore I was a young and inexperienced contributor to the *Gardeners' Chronicle*, and I shall never forget how deeply I was indebted to him for his kindly indulgence and wise and encouraging counsel. He will be greatly missed and deeply regretted by a large circle of friends, for to know Thomas Moore was to love him very highly, not only for his work's sake, but also for his own. Our literature, our shows, our social gatherings will all be the poorer for the sudden death of our late esteemed friend, whose gentleness, as well as his intelligence, made him truly great. *D. T. Fish.*

Obituary.

Marshall P. Wilder.—On Saturday, December 11, 1886, the Hon. Marshall P. Wilder, whose death we announced in our last issue, attended the special meeting of the Massachusetts Horticultural Society, then went to the meeting of the Agricultural Society at Parker's, and made an address, and then went in and made a few remarks at the Boston Club. He was somewhat fatigued, and took cold, and for one whole day and part of the next took to his bed. Then followed an attack of rheumatism, with the pains concentrated in the chest, and at the same time his doctor noticed that the pulse showed that the heart was not performing its functions with absolute regularity. On the following Wednesday Mr. Wilder was in better health. He received a call from the librarian of the New England Historic-Genealogical Society, and talked with him about the annual address Mr. Wilder was to deliver before the Society next month, and which he had already finished. The rheumatism had left him. On Thursday, December 16, he was more vigorous, rising at his usual hour and taking breakfast with the family. He transacted a little business, and talked cheerfully with Dr. Green when he came. He was sitting in the big armchair in the library, his sanctum, when the physician called, and asked, in conversation, "How is your rheumatism?" "The rheumatism is all gone," replied Mr. Wilder. Then he clapped his hand to his heart, and was dead. Mr. Wilder's death took place at half-past 9 o'clock, and was painless and sudden, as he had often wished it might be. Marshall Pinckney Wilder was born at Rindge, N.H., U.S.A., on September 22, 1798, and so was a few months over eighty-eight years of age.

Mr. Wilder's great work, as we have previously stated, was in the field of horticulture and pomology, and in these pursuits he has gained the fame which is so justly due to him. Mr. Wilder has himself said of his work in these fields: "Endowed from my youth with a love for rural life and rural tastes, I have only obeyed the instincts of my nature in devoting such time, ability, and means as I could command to the cultivation of the earth." But it was in pomology that he was most successful and most widely known. The Pears in his orchard of 2500 trees and 800 varieties have become noted. Fruit trees and fruit culture, floriculture, hybridising, and a proper nomenclature in pomology received his careful and assiduous attention, and these labours have been followed by the most satisfactory results. Floriculture was one of Mr. Wilder's early and favourite pursuits. His Camellia-house is supposed to have contained the best collection in the United States of America, embracing at one time more than three hundred varieties, and will compare favourably with those at home or abroad. His later years have been given almost entirely to his favourite field of work. The Editor of one of the leading horticultural journals has spoken of him as "one who by his zeal, industry and determination has not only conferred lasting benefits on his country, but has, by careful researches in hybridisation and fruit culture, laid the horticulturists of all nations under heavy obligations." He has shown a notable zeal in advancing the interests of agricultural study among others as well as in his own researches and labours in its pursuits, one of his most important undertakings in this direction being his part in the founding of the United States Agricultural Society in 1852, of which he was president for six years. He imported fruit trees from England, France, Belgium, and Germany, and more than 300 varieties of the Pear have been brought from his grounds to a single exhibition.

Mr. Wilder was one of the founders of the Massachusetts Horticultural Society, and was its President from 1840 to 1848. He also initiated the organisation of the State Board of Agriculture, and assisted in the establishment of the State Agricultural College and of the United States Agricultural Society. His long services in connection with the Massachusetts Horticultural Society were duly recognised by that body, which, upon his retirement from the presidency, presented him with an elegant silver vase, and caused his portrait to be placed in its hall. As President of this Association he headed the circular for a convention of fruit growers, held in New York, October 10, 1848, when the American Pomological Society was formed. He was chosen its first President, which office he held for many years.

In 1867 Mr. Wilder visited Europe as a Commissioner to the Universal Exposition of Paris. He was made Chairman of the Committee on Horticulture, and on the products and cultivation of the Vine. Ever since he removed to Dorchester (in 1832) he has experimented largely in the growth and cultivation of the Pear and Apple, and from his extensive nurseries the Boston and New York markets were for many years supplied. The improvements that he had made in producing choice varieties of Apples and Pears attracted world-wide attention. His opinions and methods of culture of these fruits were eagerly sought and followed by the leading fruit growers of the United States of America and of Europe.

At the time of his death Mr. Wilder was President of the New England Historic-Genealogical Society, the American Pomological Society, and the Massachusetts Agricultural Club. He was senior trustee of the Massachusetts Agricultural College, and senior member of the State Board of Agriculture, and of the Executive Committee of the Massachusetts Horticultural Society; also senior director in the Massachusetts Institute of Technology, the Hamilton National Bank, the New England Mutual Life Insurance Company, and the Home Savings' Bank, Mass. He was an honorary member of the Royal Historical Society of Great Britain, a corresponding member of the Royal Horticultural Society of London, and the Société Centrale d'Horticulture of France, and a Fellow of the Reale Academia Araldica Italiana of Pisa.

Mr. Wilder has had some notable birthday celebrations. On September 22, 1883, his eighty-fifth birthday, there was a notable gathering, on which occasion Mr. Wilder said, in terms which we commend to the attention of the author of "Locksley Hall":—"At the time of my birth there were not half-a-dozen agricultural, and for nearly a quarter of a century afterward not a horticultural society in our land, Now there are more than 1500 of these and similar associations recorded in the Department of Agriculture at Washington. Then the products of our soil were not deemed worthy of a place in the statistics of our nation; now we produce more than 2,000,000,000 of busbels of grain, with a constant reserve sufficient to supply the deficiency of the Old World. When I came to this city no steamship had ever reached our shores; now there is not a day in the year when many of them do not enter or depart from our ports. But I need not prolong this strain of remarks. Suffice it to say that, in science, art, and civilisation, and everythiug that pertains to the comfort aud happiness of mankind, the present age is transcendently superior to any that has preceded it."

The horticultural societies with which Mr. Wilder was so intimately connected receive by his will funds and special prizes. The following is an extract from the will:—

"I give to the Massachusetts Horticultural Society the sum of 1000 dol., to constitute a fund, the income of which shall be annually offered in special prizes, as follows:—One half of the income shall be offered annually in prizes for Grapes of American origin; the other half of the income in prizes for the Pear. These prizes shall be known as the Marshall P. Wilder prizes. I also give to the said society the large Gold Medal of Honour presented to me by the United States Agricultural Society. I give to the American Pomological Society 1000 dol., the income of which shall be from time to time offered in Wilder Medals for objects of special merit. Also the further sum of 4000 dol. for the general purposes of the Society."

In our columns for April 6, 1872 (p. 463), we laid before our readers a portrait of the Hon. M. P. Wilder, and gave an account of his labours in and services to horticulture.

EDMUND PHILIP DIXON, seed merchant and nurseryman, Hull, who died on the 2d inst., was born at Donnington, near Spalding, Lincolnshire, on July 4, 1804, he was consequently in his eighty-third year. He commenced his career in connection with the horticultural profession about the year 1817 or 1818, at the old Brompton Nursery, then in the occupation of Messrs. Harrison Brothers, where he remained several years.

Somewhere about the year 1828 we find he was engaged at the extensive nurseries of Messrs. G. & W. Tindall, Beverley, Yorkshire, whom he represented throughout England, his journeys in those days being principally effected on horseback with his changes of raiment, &c., in saddle-bags as was the custom in the early part of this century.

It was during the course of these peregrinations that he took orders for the earliest specimens of iron roofed conservatories to be found in Yorkshire. Relics of these are now extant at Everingham Park, Rise Park, Sunderland, Wick, and other places. And also vineries, Peach-houses, at Brocklesby Park, Lincolnshire, and the first hot-water piping used in Lincolnshire and the adjoining East Riding of Yorkshire. We think the year 1833 was the date of his first embarkation in business on his own account at No. 2 or 3, Queen Street.

In 1835 he had settled down at 67, Queen Street, where the nucleus of the now extensive seed and nursery business was formed; here he remained nearly twenty years, when the landlord sold the premises without giving him a chance to buy them. From this time he turned greater attention to the agricultural department of his business until, in 1865, his constantly increasing Clover and grass seed businesses rendered extensive accommodation necessary, he therefore purchased the site, and built the first portion of warehouses, 75, High Street, four storeys in height, to which was supplemented in 1870 one of the same height, but of still greater area of ground surface, at Nos. 76 and 77.

Of a retiring nature, he did not seek public office, although he considered it his duty to serve as a guardian of the poor, and from 1849 sat for three years in the Town Council of Kingston-upon-Hull. The repeated efforts to induce him to continue were met with a decided negative, and a request that they should ask others who were anxious for the office.

In his nursery business he was very successful, and as an exhibitor at all the principal horticultural exhibitions he carried off a very large quantity of prizes and rewards. His position was due entirely to his untiring energy and personal industry; his business qualifications were of the highest order, and to these he added a courteous and pleasant manner, whilst his personal appearance was such that in a crowd he was recognised as no ordinary man. He married in 1835, and leaves a numerous family.

JOHN F. MCELROY.—The death of Mr. John F. McElroy, gardener to A. J. Lewis, Esq., Moray Lodge, Camden Hill, Kensington, and for the last eight years the Hon. Secretary of the United Horticultural Benefit and Provident Society, took place on Sunday last, after a short illness, in the sixty-ninth year of his age. He was a gardener from childhood. His father was gardener to Mr. Christie, and the son of his employer, William Miller Christie, took a great interest in botanical studies, and young McElroy was his companion, and in the course of rambles gained a good knowledge of botany, which often served him in good stead in after years. At the age of seventeen he went as assistant, and afterwards as salesman, to a Mr. William Thompson, a market gardener at Haywards Heath. On leaving Mr. Thompson he went as flower gardener to Mr. Weeber, at Stamford Hill; then to Mr. Renshaw, at Erith, but there his health failed him, and he had to leave, and then he went into the employ of Mr. Lancaster, Stamford Hill, laying out his grounds and getting them into working order at the commencement of his service. Here he remained for nineteen years, leaving Stamford Hill on the occasion of the death of his employer, and entering the service of Mr. A. J. Lewis, at Moray Lodge. Here he lived for twenty years, keeping up the garden in excellent style, and working out many improvements. He was seized with a fit on Friday the 7th inst., and died on Sunday the 9th in full possession of his faculties to the last. In years past he contributed a good deal to the columns of the gardening papers, and especially to the *Gardeners' Magazine*. He took a deep interest in all social questions affecting the working classes, and especially in the Temperance movement, lecturing, and speaking frequently at meetings. The services he rendered to the United Horticultural Benefit and Provident Society were most disinterested, for when he became its Secretary he was too old to avail himself of its privileges as a member, and all the remuneration he received for his services was the small amount remaining as a balance from the Management Fund at the end of the year. He was a most painstaking official, and his books are to be found in perfect order. It will be extremely difficult to find a better worker and administrator than J. F. McElroy. He had been a subscriber to the Gardeners' Royal Benevolent Institution since 1869. He was buried in Brompton Cemetery on Wednesday last.

ENQUIRIES.

"He that questioneth much shall learn much."—BACON.

GOLDEN AND PURPLE VARIETIES OF WILLOW.—R. Warner, Broomfield, Chelmsford, would be glad to be informed by Mr. A. D. Webster where these can be obtained.

NOTICES TO CORRESPONDENTS.

TO THE TRADE.—Members of the Trade will oblige by sending notes of matters of Trade interest, Cultural or Commercial. Short notes of daily experience are what are most useful.

INTELLIGENT READERS, DO PLEASE NOTE.—*Letters relating to* ADVERTISEMENTS, *or to the supply of the Paper, should be addressed to the* PUBLISHER, *and not to the Editor.*

*** All communications intended for publication should be addressed to the "*Editor.*" Such communications should be *written on one side only of the paper*, and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

ANTS IN HOUSES: *E. H.* Pour carbolic acid dissolved in water, or paraffin, into their haunts.

BOOKS: *G. W.* The book is well known to the curious, but is very rare.—*W. N. M.* Yes; for names of plants. For cultural matter, Cassell's *Popular Gardening* may be recommended.

CYCAS: *E. B., Leamington.* Sago is produced from the stem, not the fruit; most of the commercial Sago, however, is the produce of a true Palm, Sagus laevis. The names of the Ferns next week.

CUCUMBERS FOR MARKET: *Market Gardener.* No one kind finds favour with the trade. In the shops during the summer we find Carter's Champion, and the true Telegraph. For market purposes any prolific sort, of medium size, is well suited.

DOUCIN STOCK: *Pome.* Our experience with the Doucin stock for Apples is, that it is of somewhat stronger growth than the French Paradise,—but almost equally precocious. It is the stock that we prefer to all others for general use. The statement that Apples grafted on this stock "do not come into bearing for 12 or 15 years" is entirely wrong.

MUSHROOMS IN A CLOSED SHED: *A. B.* If there be space for a quantity of hot manure being prepared for Mushroom beds, and the walls and roof (especially the latter) be protected by long litter or Fern, you could grow Mushrooms at any season of the year. As you seem to want more acquaintance with Mushroom growing, get J. Wright's *Mushrooms for the Million.* See our notice to "Market Gardener."

NAMES OF FRUITS: *A. B.* West's St. Peters.

NAMES OF PLANTS: *J. E.* 1, Pholidota articulata; 2, Epidendrum ciliare; 3, Grobya Amherstiæ; 4, Sophronitis grandiflora var.; 5, Sophronitis grandiflora.

RANUNCULUS ACRIS: *Exon.* Grammatically you are right, that is, if Ranunculus be considered, as it usually is, masculine. But custom is so powerful that we fear there is little chance of the adoption of Ranunculus acer.

ROBINIA CLAMATA: *W. F.* Try Messrs. Smith & Son, Newry, Ireland; or Messrs. J. Veitch & Sons, Chelsea.

STRAWBERRIES: *Market Gardener.* The sorts Marguerite and Sir Charles Napier are liked best for market work, and you can get them as early as Strawberries are worth eating. Vicomtesse Héricart du Thury, Keen's Seedling, British Queen, and Elton are employed for successional crops by various growers.

TOMATOS: *Market-Gardener.* Planting as you purpose doing, will have some advantages. For early fruiting, Earliest of All (Sutton's), Chiswick Red, Hathaway's Excelsior, and Reading Perfection, are all good.

TO RID POTTED PLANTS OF WORMS: *W. B.* Messrs. Rutley and Silverlock, 412 Strand, London, W.C., sell a worm soap, which is very effective.

WORK ON MUSHROOM GROWING: *Market Gardener. Mushrooms for the Million*, by John Wright, *Journal of Horticulture* Office, 171, Fleet Street, E.C. Price 1*s.*

WORK ON STOVE AND GREENHOUSE PLANTS: *J. P. A.* That published by Mr. B. S. Williams, Victoria Nurseries, Upper Holloway, is the best for your purpose. Third edition, price 7*s.* 6*d.*, post free, 8*s.*

ZYGOPETALUM: *W. E. M.* If you would send another flower we would identify the species for you; the other flower sent possibly got mislaid.

CATALOGUES RECEIVED.

H. CANNELL & SONS, Swanley, Kent—Vegetable Seeds, &c., and Floral Guide.

PETER LAWSON & SON, Limited, 1, George IV. Bridge, Edinburgh, N.B.—Garden Seeds, &c.; also Trade Seed List.

E. WILSON SERPELL, 21, Cornwall Street, Plymouth—Seed Catalogue.

HARRISON & SONS, Leicester—Seeds.

RICHARD CLEAVER, Bore Street, Lichfield—Vegetable and Flower Seeds.

CARTER, PAGE, & Co., 53. London Wall, City, London, E.C.—Garden and Agricultural Seeds.

CHARLES TURNER, Royal Nurseries, Slough—Garden and Flower Seeds.

DICKSONS & Co., 1 Waterloo Place, Edinburgh—Garden Seeds.

WEBB & SONS, Wordsley, Stourbridge—Spring Catalogue.

HAAGE & SCHMIDT, Erfurt, Germany—Plant and Seed Catalogues.

JNO. JEFFRIES & SON, Cirencester—Seeds, Bulbs and Plants.

STEVEN BROS. & Co., 4, Upper Thames Street, London—Revised Price List of Boilers, &c.

FREDERICK RŒMER, Quedlinburg, Germany—Seed Catalogue; also Catalogue of Potatos.

JACOB WRENCH & SONS, London Bridge, London E.C.—Wholesale Seed List.

COMMUNICATIONS RECEIVED.—H. E.—J. C. & Co.—B. H.—F. C.—D. T. F.—F. A. P.—M. T.—J. C.—P. C.—G. N.—D.—J. V. & Sons.—T. S., Timaru.—N. Z.—A. Wilson.—Corcaigensis.—J. A.—W. B.—W. E.—G. A.—N. E. B.—G. W.—*Nature*—W. S.—R. M. L.—J. De M., Boston.—G. N.—R. S. B.—A. D. W.—O. T., Chatsworth.—L. R. & Co.—W. H.—T. Hanbury.—W. B. U. (many thanks).—G. M.—Frank Miles (forwarded as requested).—W. S.—W. E. P.—H. W. W.—P. G.—T. B.—E. W.—F. W. B.—J. J. W.—A. M. K.—K. L. D.

THE WEATHER.

AVERAGE MEAN TEMPERATURE OBSERVED AT CHISWICK FOR THE WEEK ENDING JANUARY 22.

January 16	36°.7	January 20	37°.4
„ 17	36°.8	„ 21	37°.5
„ 18	36°.9	„ 22	37°.7
„ 19	37°.2	Mean for the week ...	37°.

THE PAST WEEK.

THE following summary record of the weather for the week ending January 10, is furnished from the Meteorological Office:—

The weather has been in an exceedingly unsettled condition in all parts of the Kingdom. Falls of rain, sleet, and snow were of very frequent occurrence; in most parts of England the fall of snow was unusually heavy. At some of our S.W. and W. stations thunder and lightning were experienced.

Temperature has continued below the mean in all districts; in the "Channel Islands" the deficit was only 3°. but in most parts of Great Britain and in the N. of Ireland it has been as much as 6°, 7°, or 8°. At several stations the average temperature for the week was very low; at Glenlee it was as low as 25°·7, at Newton Reigny 27°·9, and at Brookeborough 28°·4. The highest of the maxima, which were registered on irregular dates, ranged from 39° in "England E.'" to 52° in "Ireland S.'" On most days the maxima were very low,—thus at Braemar the average of the maximum readings for the week was only 32°·9, at Cheadle 33°·4, at Bawtry 33°·6, and at Armagh 34°·3. The lowest of the minima, which were generally recorded either on the 6th, 7th, or 10th, ranged from 10° in "Scotland W.'" (at Glenlee), and 12° in "Ireland N.'" (at Armagh), to between 14° and 24° in all other districts excepting the "Channel Islands," where the lowest reading was 32°.

Rainfall has been more than the mean in all districts.

Bright sunshine has been very deficient generally, but in the "Channel Islands" as much as 52 per cent. of the possible amount of duration has been recorded.

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 42° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE. Above or below the Mean for the week ending Jan. 10.	ACCUMULATED. Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 4, 1887.	Below 42° difference from Mean since Jan. 4, 1887.
Principal Wheat-producing Districts.		Day-deg.	Day-deg.	Day-deg.	Day-deg.
0. SCOTLAND, N. ...	5 below	0	59	− 5	+ 27
1. SCOTLAND, E. ...	7 below	0	74	− 4	+ 33
2. ENGLAND, N.E. ...	6 below	0	70	− 7	+ 41
3. ENGLAND, E. ...	6 below	0	74	− 10	+ 44
4. MIDLAND COS. ...	7 below	0	78	− 12	+ 49
5. ENGLAND, S. ...	5 below	0	53	− 13	+ 35
Principal Grazing, &c., Districts.					
6. SCOTLAND, W. ...	8 below	0	77	− 9	+ 50
7. ENGLAND, N.W. ...	8 below	0	71	− 11	+ 48
8. ENGLAND, S.W. ...	5 below	0	36	− 20	+ 26
9. IRELAND, N. ...	8 below	0	60	− 15	+ 41
10. IRELAND, S. ...	5 below	0	36	− 23	+ 25
— CHANNEL ISLANDS	3 below	10	21	− 17	+ 16

DISTRICTS.	RAINFALL. More or less than the Mean for the Week.	No. of Rainy Days since Jan. 4, 1887.	Total Fall since Jan. 4, 1887.	BRIGHT SUNSHINE. Percentage of possible duration for the Week.	Percentage of possible Duration since Jan. 4, 1887.
Principal Wheat-producing Districts.	Tenths of Inch.		Ins.		
0. SCOTLAND, N. ...	4 more	5	1.2	15	15
1. SCOTLAND, E. ...	3 more	5	0.8	7	7
2. ENGLAND, N.E. ...	6 more	7	1.1	9	9
3. ENGLAND, E. ...	3 more	6	0.8	6	6
4. MIDLAND COS. ...	5 more	6	1.1	18	18
5. ENGLAND, S. ...	2 more	5	0.9	21	21
Principal Grazing, &c., Districts.					
6. SCOTLAND, W. ...	2 more	4	1.2	17	17
7. ENGLAND, N.W. ...	1 more	6	0.9	11	11
8. ENGLAND, S.W. ...	3 more	6	1.3	29	29
9. IRELAND, N. ...	4 more	5	1.2	22	22
10. IRELAND, S. ...	6 more	5	1.5	30	30
— CHANNEL ISLANDS	4 more	7	1.3	52	52

MARKETS

COVENT GARDEN, January 13.

WE are again receiving large supplies of late Grapes, most samples being indifferent, and making very low prices. A few good samples are selling at improved rates. Market quiet. *James Webber, Wholesale Apple Market.*

VEGETABLES—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, per doz...	4 0	...	Mushrooms, punnet	1 6	2 6
Beans, Kidney, lb. ...	1 0	...	Mustard and Cress, punnet	0 4	...
Beet, red, per dozen	1 0	2 0	Onions, per bushel ...	3 0	...
Brussels Sprouts, lb.	0 3	...	Parsley, dozen bunch	4 0	...
Carrots, per bunch...	0 6	...	Potatos, per cwt. ...	4 0	5 0
Cauliflowers, per doz.	3 0	...	„ kidney, per cwt.	4 0	5 0
Celery, per bundle ...	1 6	2 0	Seakale, per punnet	2 6	...
Cucumbers, each ...	0 6	1 0	Shallots, per lb. ...	0 3	...
Endive, per dozen ...	1 0	2 0	Spinach, per bushel...	5 0	...
Green Mint, bunch...	1 3	...	Sprue, bundle ...	1 0	...
Herbs, per bunch ...	0 4	...	Tomatos, pet lb. ...	1 0	1 6
Leeks, per bunch ...	0 3	...	Turnips, bunch ...	0 4	...
Lettuce, per dozen ...	1 0	1 6			

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apple, ½-sieve	1 6– 3 6	Lemons, per case	12 0–21 0
— Nova Scotia, brl.	8 0–12 0	Pears, per dozen	2 0– 4 0
Grapes, per lb.	1 0– 2 6	Pine-apples, Eng., lb.	1 0– 1 6
Kent Cobs, 100 lb.	65 0 70 0	— St. Michael, each	1 6– 6 0

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz.	6 0–18 0	Ficus elastica, each	1 6– 7 0
Arum Lilies, dozen	18 0–24 0	Ferns, in variety, per dozen	4 0–18 0
Azaleas, per dozen	24 0–42 0	Foliage plants, various, each	2 0–10 0
Begonias, per dozen	6 0–12 0	Hyacinths, 12 pots	9 0–12 0
Bouvardias, doz.	9 0–12 0	Marguerite Daisy, per dozen	6 0–12 0
Cyclamens, dozen	12 0–24 0	Myrtles, per dozen	6 0–12 0
Cyperus, per dozen	4 0–12 0	Palms, in var., each	2 6–21 0
Dracæna terminalis, per dozen	30 0–60 0	Pelargoniums, scarlet, per doz.	6 0– 9 0
— viridis, per doz.	12 0–24 0	Poinsettias, dozen	12 0–18 0
Epiphyllum, dozen	18 0–30 0	Primula sinensis, per dozen	4 0– 6 0
Erica gracilis, doz.	9 0–12 0	Solanums, per dozen	9 0–12 0
— hyemalis, doz.	12 0–24 0	Spiræa, per dozen	12 0–24 0
— various, dozen	9 0–24 0	Tulips, 12 pots	6 0– 8 0
Euonymus, in var., per dozen	6 0–18 0		
Evergreens, in var., per dozen	6 0–24 0		

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Arum Lilies, 12 blms.	5 0– 8 0	Mignonette, 12 bun.	3 0– 6 0
Azaleas, 12 sprays	0 9– 1 6	Pelargoniums, per 12 trusses	1 0– 1 6
Bouvardias, per bun.	0 6– 1 0	— scarlet, 12 trusses	0 6– 1 0
Camellias, 12 blooms	2 0– 4 0	Poinsettias, 12 sprays	4 0– 8 0
Carnations, 12 blms.	1 0– 3 0	Primulas, single, 12 bunches	4 0– 6 0
Chrysanth., 12 blms.	1 0– 2 0	Roses, Tea, per doz.	2 0– 4 0
— 12 bunches	12 0–24 0	— coloured, dozen.	3 0– 6 0
Eucharis, per dozen	4 0– 8 0	— red, French, doz.	2 6– 3 6
Gardenias, 12 blooms	12 0–24 0	— Saffrano, Fr. doz.	1 6– 3 0
Heliotrope, 12 spr.	0 6– 1 0	Tropæolums, 12 bun.	1 0– 2 0
Jasmine, white, bun.	0 6– 0 9	Tuberoses, 12 blms.	1 0– 2 0
Lapageria, red, 12 blooms	1 0– 2 0	Violets, 12 bunches	1 6– 2 0
— white, 12 blooms	2 0– 4 0	— Parme, French, per bunch	7 6– 8 6
Lilies of the Valley, 12 sprays	1 0– 1 6	— Czar, Fr., bunch	2 0– 3 0
Marguerites, per 12 bunches	3 0– 6 0		

FRUIT AND VEGETABLES.

COLUMBIA (EAST LONDON): *Jan.* 12.—Demand for vegetables fairly good; the fruit trade, however, was languid. Prices:—Apples, 4*s.* 6*d.* to 7*s.* 6*d.* per bushel; pears (table), 7*s.* to 12*s.* do.; stewing ditto, 2*s.* 6*d.* to 5*s.* do.; Cauliflowers, 4*s.* to 14*s.* per tally; Cabbages, 1*s.* 6*d.* to 2*s.* 6*d.* do.; savoys, 2*s.* 6*d.* to 6*s.* do.; Brussels Sprouts, 2*s.* 6*d.* to 4*s.* 6*d.* per sieve; beet-roots (loose), 6*d.* to 9*d.* per dozen; Greens, 2*s.* to 4*s.* per dozen bunches; Turnips, 1*s.* 6*d.* to 3*s.* do.; carrots, 1*s.* 6*d.* to 2*s.* do.; Onions, 4*s.* to 5*s.* per cwt.; Carrots, 18*s.* to 32*s.* per ton; Mangolds, 11*s.* 6*d.* to 15*s.* do.

STRATFORD: *Jan.* 11.—Supplies and trade have been good. Prices:—Savoys, 4*s.* to 5*s.* per tally; Greens, 1*s.* 6*d* to 2*s.* per dozen bunches; Turnips, 2*s.* to 2*s.* 6*d.*, do., ditto, 35*s.* to 40*s.* per ton; Carrots, household, 35*s.* to 40*s.* do.; ditto, cattle feeding, 20*s.* to 25*s.* do.; Parsnips, 9*d.* to 1*s.* per score; Mangolds, 14*s.* to 17*s.* 6*d.* per ton; Swedes, 16*s.* to 23*s.* do.; Onions, 80*s.* to 100*s.* per ton; Apples, Willingtons, 6*s.* to 7*s.* per bushel; Celery, 10*s.* to 12*s.* per dozen rolls.

POTATOS.

BOROUGH AND SPITALFIELDS: *Jan.* 11.—Trade was slow, but prices of best qualities firm on short supplies. Quotations:—Regents, 90*s.* to 120*s.*; Hebrons, 80*s*, to 120*s.*; Magnum Bonums, 80*s.* to 95*s.*; Champions, 70*s.* to 95*s.*; and German Reds, 70*s.* to 90*s.* per ton.

COLUMBIA (EAST LONDON): *Jan.* 12.—The trade has greatly improved owing to slackness of supplies. Quotations:—York and Lincoln Magnums, 57*s.* 6*d.* to 90*s.*; Regents, 62*s.* 6*d.* to 80*s.*; Essex Magnums, 57*s.* 6*d.* to 90*s.*; do. Regents, 65*s.* to 90*s.*; Cambridgeshire Magnums, 57*s.* 6*d.* to 90*s.*; do. Regents, 60*s.* to 75*s.* per ton.

STRATFORD: *Jan.* 11.—Quotations:—Best Magnums, 60*s.* to 70*s.*; Fenland do., 55*s.* to 65*s.*; Champions, 50*s.* to 60*s.* per ton.

Imports.—the imports into London last week consisted of 1,001 bags from Stettin, 45 Boulogne, 627 Ghent, 25 Hamburg, and 17 boxes, 26 barrels from Malta.

CORN.

Averages.—The following is an official statement showing the average price of British corn, imperial measure, as received from the inspectors and officers of Excise, in the week ending January 8:—Wheat, 35*s.* 4*d.*; Barley, 26*s.* 4*d.*; Oats, 16*s.* 11*d.* For the corresponding week in 1886:—Wheat, 29*s.* 10*d.*; Barley, 28*s.* 10*d.*; Oats, 18*s.* 1*d.*

ROBERT NEAL begs to call the attention of Gentlemen, Builders, and others who intend planting this season, to his stock of FRUIT, FOREST, and ORNAMENTAL TREES, SHRUBS, ROSES, &c., which are in fine condition for removal, and comprise especially those kinds which are most suitable for Town Planting. Free delivery in own vans within a distance of six miles.
CATALOGUES on application.
The Nurseries, Trinity Road, Wandsworth Common, S.W.

SHRUBS and CONIFERÆ.—Laurustinus, 2 feet, bushy, 32*s.* per 100. Arbutus Unedo, 2 feet, 40*s.* per 100. Aucuba japonica, 2 to 2½ feet, 40*s.* per 100. Box, Tree, sorts, 1½ to 2 feet, 30*s.* per 100. Common Laurels, 2 feet, 12*s.* per 100. Colchic Laurels, 2 to 2½ feet, 16*s.* per 100. Grislinia littoralis, 2 feet, 35*s.* per 100. Sweet Bay, 1½ to 2 feet, 30*s.* per 100. Rhododendron ponticum, 1½ to 2 feet, 30*s.* per 100; ditto, 2 to 2½ feet, 40*s.* per 100, extra fine. Abies Douglasii, 2 to 3 feet, 30*s.* per 100; ditto, 3 to 4 feet, 40*s.* per 100; ditto, 4 to 5 feet, 70*s.* per 100, fine roots and well furnished. Araucaria imbricata, 2 to 2½ feet, 42*s.* per dozen; ditto, 3 to 3½ feet, 60*s.* per dozen. Cupressus Lawsonii, 1½ to 2 feet, 16*s.* per 100; ditto, 2 to 2½ feet, 20*s.* per 100; ditto, 3 to 4 feet, 50*s.* per 100. Cupressus erecta viridis, 1½ to 2 feet, 30*s.* per 100; ditto, 2 to 2½ feet, 40*s.* per 100. Retinospora plumosa, 1½ to 2 feet, 30*s.* per 100; ditto, 2 to 2½ feet, 40*s.* per 100, extra. Picea Nordmanniana, 2 feet, 40*s.* per 100. Thuia Lobbii, 2 to 2½ feet, 25*s.* per 100. Special offer by the 1000 for smaller sizes. GARLIES MITCHELL, Nurseryman, Stranraer.

SUTTON'S
PRIZE STRAINS of PRIMULA.
UNPRECEDENTED SUCCESS.

At the ROYAL HORTICULTURAL SOCIETY'S MEETING, on Tuesday, Jan. 11, SUTTON & SONS were awarded a Silver-gilt Banksian Medal and Six First-class Certificates for a Magnificent Display of PRIMULAS; and at the NATIONAL CHRYSANTHEMUM SOCIETY'S MID-WINTER EXHIBITION, on Wednesday, Jan. 12, they were further awarded a SILVER MEDAL and EIGHT CERTIFICATES for a similarly grand Collection.

For full particulars of
SUTTON'S PRIZE STRAINS OF PRIMULA
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BRANCHES:—Maida Vale, Twickenham, Paris, and New York.

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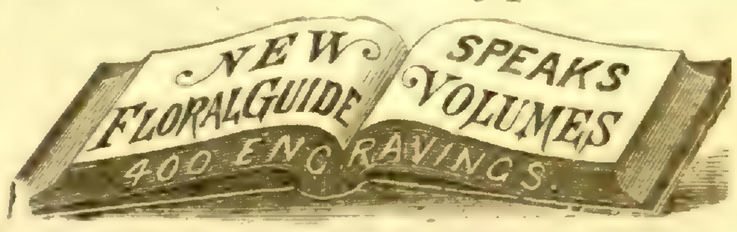

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"On leaving Brisbane three months ago for this Plantation during our sugar harvesting, I find the only book my lady people packed in my portmanteau was your FLORAL GUIDE for 1886. I have carefully perused it over and over again, and must say it contains an immense amount of information, and nicely arranged. Although an amateur gardener for forty years—and I commenced it when a boy—it is the best catalogue I have met with. Send me the annexed order."

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None genuine unless in sealed packages and printed cultural directions enclosed, with our signature attached.

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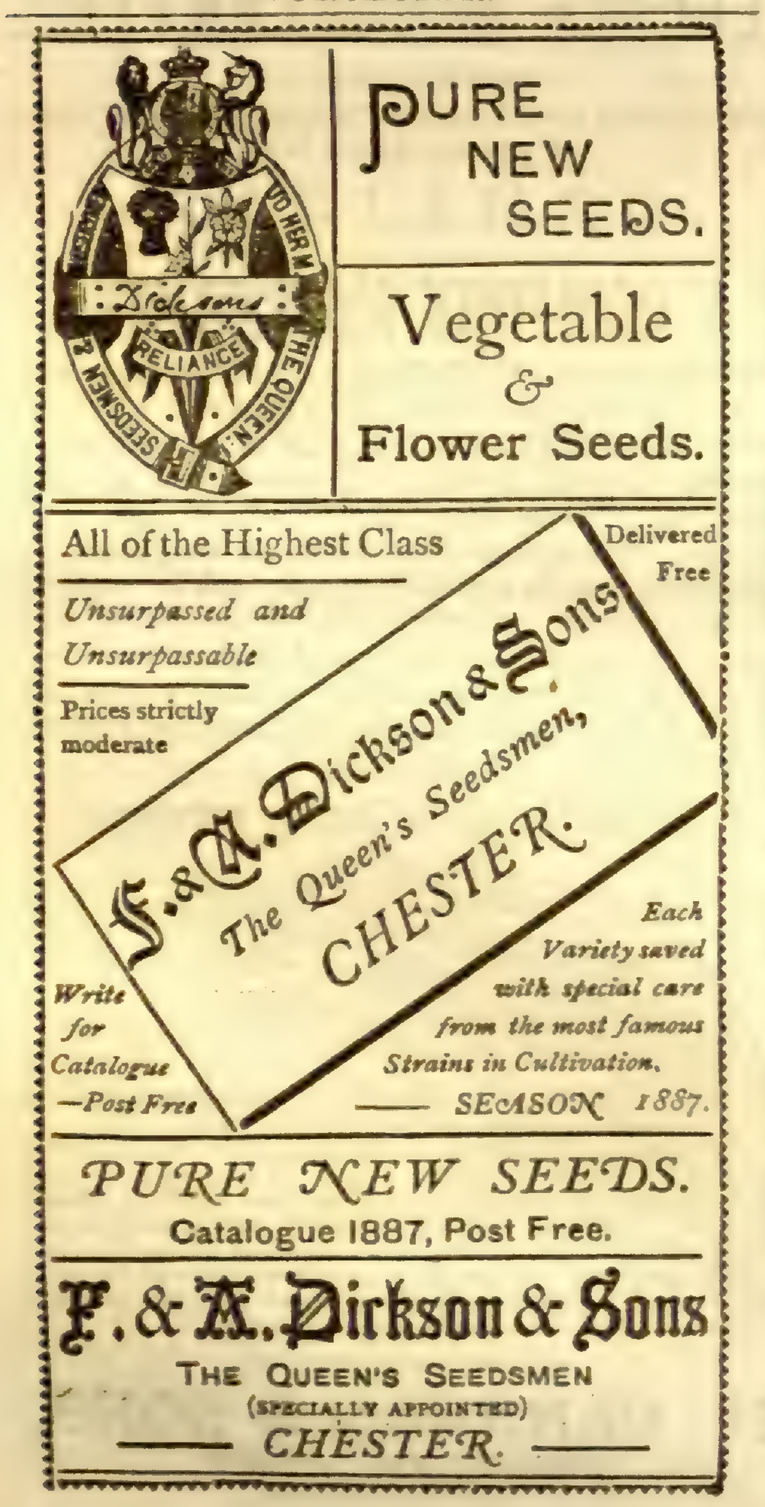

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LIGHT BROWN FIBROUS PEAT, 5*s*. 6*d*. per sack; 5 sacks, 25*s*.; sacks, 4*d*. each.

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COARSE SILVER SAND, 1*s*. 9*d*. per bushel; 15*s*. per half ton; 26*s*. per ton, in 2-bushel bags, 4*d*. each.

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	Tins.	In bags. 7lb.	14lb.	28lb.	56lb.	1cwt.
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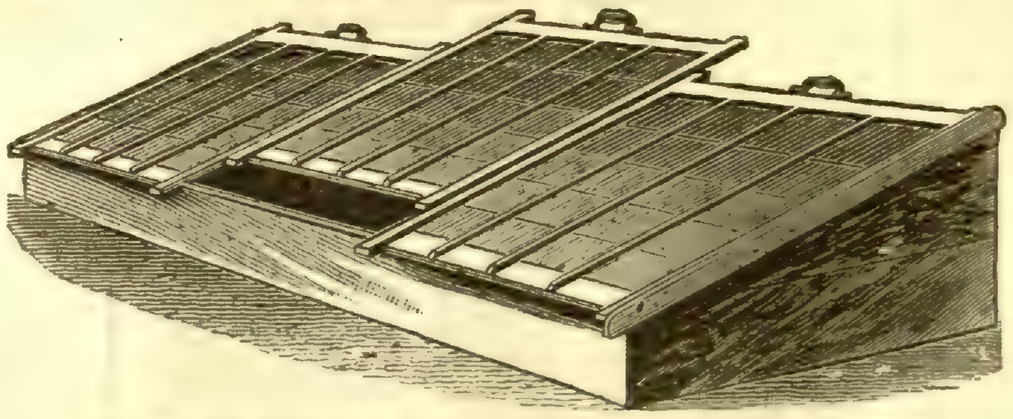

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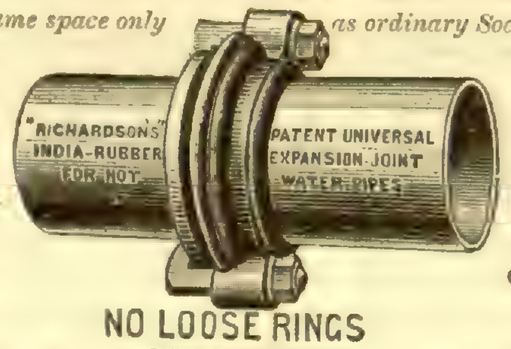

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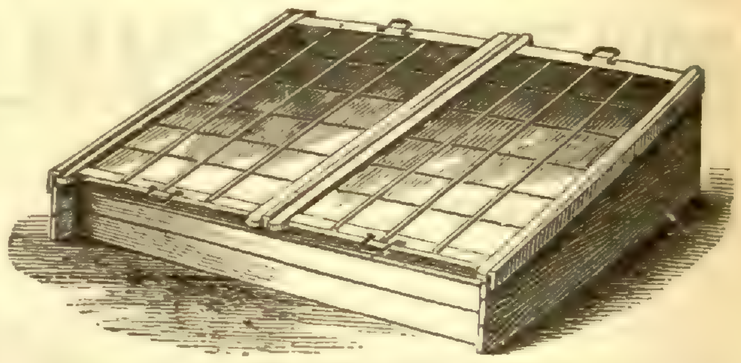

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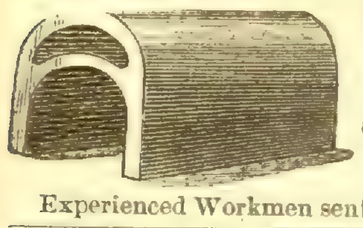

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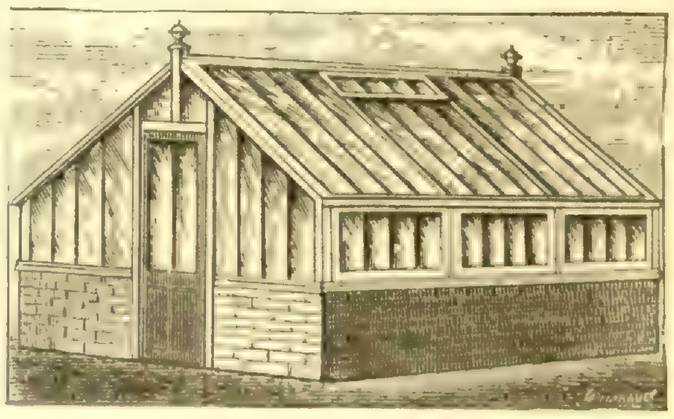

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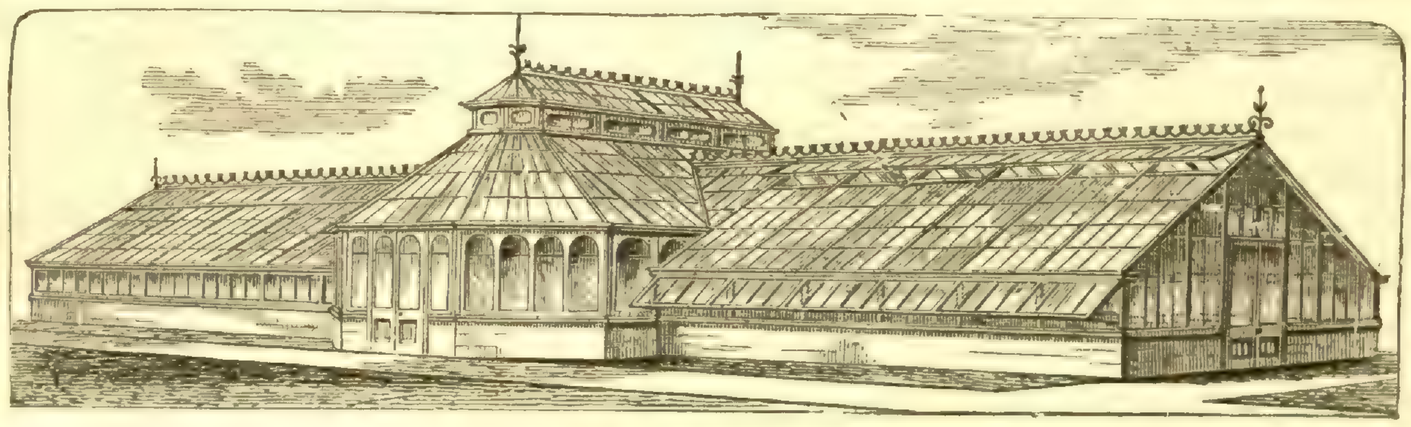

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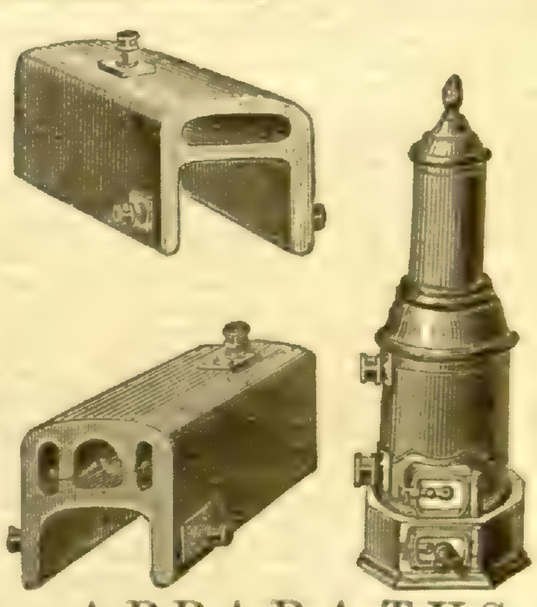

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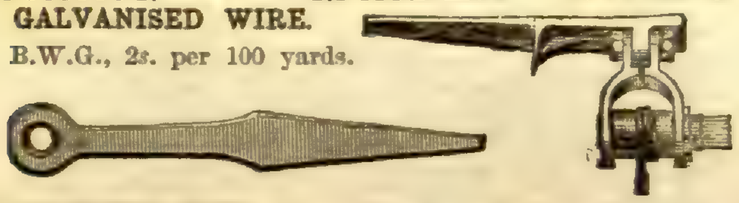

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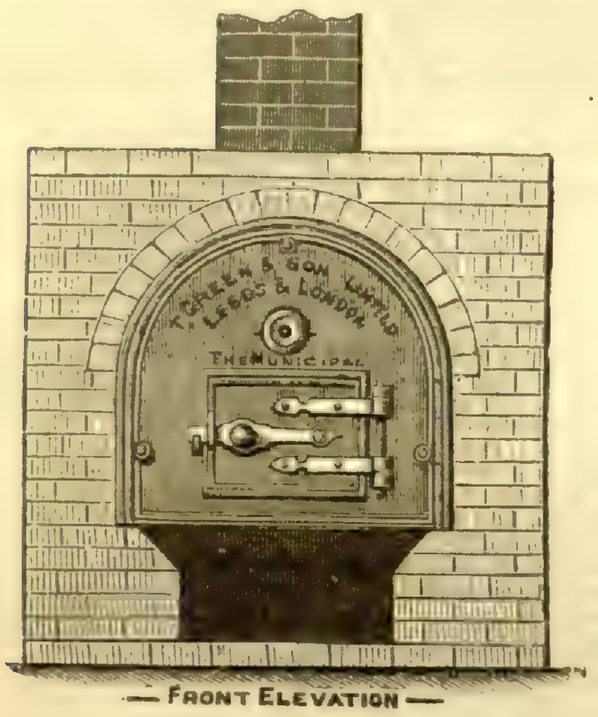

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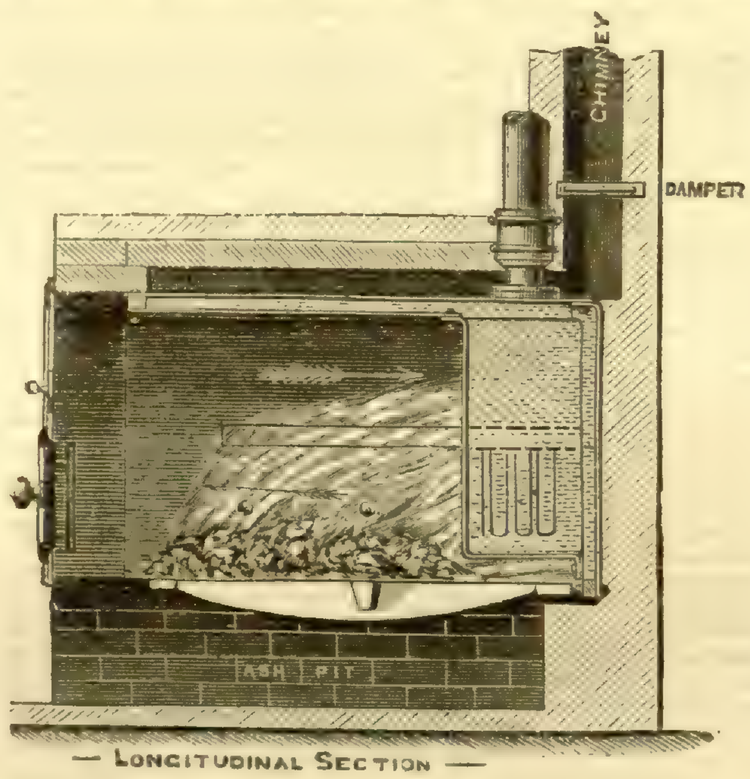

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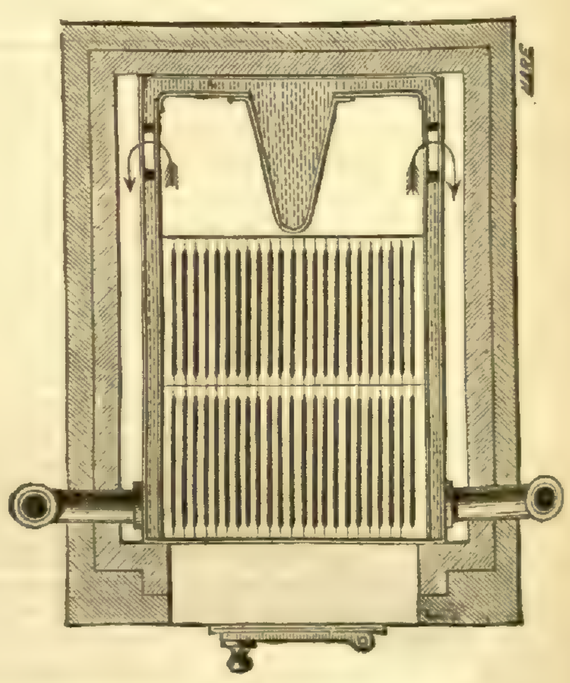

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CONTENTS.

Adiantums, a decade of new ... 110
Alocasia eminens ... 105
Alpine garden, the ... 109
Amateurs' notes 114
Cattleya × Harrisii ... 104
Certificates at South Kensington 118
Clerodendron fallax ... 108
Climate and vegetation 103
Covent Garden Market... 116
Eucharis amazonica ... 117
Florists' flowers 115
Flower garden, the ... 110
Fruit trees and bullfinches 118
Gardeners' Royal Benevolent Institution ... 112
Gardening appointments 126
Hailstorm Insurance Co. 113
Hardy fruit garden ... 115
Honours to horticulturists 113
Horticultural exhibitions 118
Insects and hoar frost ... 117
Lælia anceps Sanderiana 104
Measuring trees 117
Narcissus minimus ... 117
Normal School of Science 113
Oakley Court 107
Obituary :—
R. Laing 120
Orchid notes 107
Peach and Nectarine as wall trees, the 110
Pears, upright cordon ... 104
Phaseolus caracalla ... 118
Physiological varieties ... 113
Picotee? what is a ... 117
Plants and their culture 115
Potato, a piebald ... 110
Primula altaica 119
Primulas from Swanley 113
Queen's Jubilee, the ... 112
Rockery at Messrs. Cheal's 112
Rose Maréchal Niel ... 106
Royal Horticultural Society 117
Senecio grandifolius ... 113
Societies :—
Edinburgh Botanical... 119
Scottish Horticultural 119
Spray pumps 108
Tithe meeting at Rochester 113
Vegetables 116
Weather, the 119
Weevils, Bean 116

ILLUSTRATIONS.

Narcissus minimus 117
Nozzle, the cyclone 108, 109
Pear trees, upright cordon at Messrs. Cheal's nursery ... 105
Potatos, cross-bred 111
Rockery at Messrs. Cheal's Nursery. (See Supplement.)
Trees, measuring the height of 117
Weevil, Bean 116

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

At a General Meeting of the Subscribers to this Institution held on FRIDAY, the 14th January, 1887, for the purpose of making an Addition to the List of Pensioners, it was resolved "That in consequence of Two Vacancies having occurred in the List of Pensioners since the voting papers were issued, after the Four Pensioners for whom the Election is called have been elected the two next highest on the poll shall be declared Pensioners." The following was the result of the Ballot:— CANDIDATES.

Votes.	Name.	Age.
1095	HARRIETT CHAPMAN	64
227	MATILDA CHARLTON	60
1172	ELIZABETH COLE	74
840	DAVID DAY	65
82	STEVEN EVANS	71
270	JAMES EWING	86
904	RUTH HOOD	68
64	THOMAS MORLEY	77
268	HENRY MOXHAM	67
266	MARY NELSON	65
89	JOSEPH NORVAL...	61
540	CHARLES OSMAN	64
1053	SAMUEL PERKINS	62
183	JOHN SLOWE	77
182	ELIZABETH SNOW	72
1211	WILLIAM WADDS	77
694	THOMAS M. WALL	86

The Meeting then declared William Wadds, Elizabeth Cole, Harriett Chapman, Samuel Perkins, Ruth Hood, and David Day duly elected Pensioners from the 25th December last.

By Order, EDWD. R. CUTLER, Secretary.
50, Parliament Street, S.W., January 18, 1887.

MRS. RUTH HOOD, Exeter, begs to return her sincere thanks to all who kindly Voted in her behalf at the Election of the Royal Gardeners' Benevolent Institution last week.

Gardeners' Royal Benevolent.

WILLIAM WADDS desires to return his hearty thanks to those Subscribers who have so kindly recorded their Votes in his favour at the recent Election.
Hungarton, Leicester, January 18.

B. S. WILLIAMS begs to intimate that his ILLUSTRATED SEED CATALOGUE for 1887 has now been posted to all Customers; another copy will be forwarded to any one who may not yet have received one.

Myrobella.

PRUNUS MYROBALANA, or CHERRY PLUM.—The best stuff for Mending Old Fences or Making New Ones. Grows fast in poorest soils. Much stronger than Whitethorn. It is also an excellent Stock for the Plum. A sample hundred, 2 to 3 feet, sent on receipt of 6s., 50 for 3s. Full further particulars of
EWING AND CO., Sea View Nurseries, Havant, Hants.

Seeds.

CHARLES TURNER'S Descriptive CATALOGUE of New and Select Varieties of every class of Seeds for the Trade is now ready.
The Royal Nurseries, Slough.

Trade Price-Current—Seeds—1887.

PETER LAWSON AND SON (Limited), Edinburgh, have now Posted their Annual CATALOGUE of VEGETABLE and FLOWER SEEDS to their Customers, but should there be any not delivered, copies will be sent upon application.
The ANNUAL CATALOGUE of AGRICULTURAL SEEDS will be published later on; meanwhile Special Offers will be made upon application.

Vegetable and Flower Seeds.

THE LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, have to state that their Illustrated and Descriptive CATALOGUE of Vegetable and Flower Seeds is now ready, and will be sent post-free on application.
The Vineyard and Nurseries, Garston, near Liverpool.

Raspberries.

H. CANNELL AND SONS have a large quantity of CARTER'S PROLIFIC—the finest Plants, perhaps, ever seen—20s. per 1000.
Swanley, Kent.

PLUM STOCKS.—A few thousands to spare, carefully trimmed and with fibrous roots.
WILL TAYLER, Osborn Nursery, Hampton, Middlesex.

Floral Commission Agency.

A. HILL AND CO., 52, Hart Street, Covent Garden, W.C., are open to RECEIVE CONSIGNMENTS of Choice CUT FLOWERS in any quantity. A. H. & Co., giving personal attention to all consignments, are thus enabled to obtain the highest market prices. All Cheques forwarded weekly. Bankers and good Trade references. Boxes and Labels supplied.

MESSRS. GREGORY AND EVANS, NURSERYMEN, Sidcup, and 285, 286, 287, 288, Flower Market, Covent Garden, W.C., are open to RECEIVE CONSIGNMENTS of Choice CUT FLOWERS in any quantity for their Commission Department. Boxes and Labels supplied.
Telegraph Address—"COMMISSION, SIDCUP."

WANTED, healthy Cuttings of MISS JOLIFFE CARNATION.
MARSHALL BROS. AND CO., Barnham Nursery, Bognor.

WANTED, WELLINGTONIA GIGANTEA, 2 years; ABIES DOUGLASII, 2 years; and TAXODIUM SEMPERVIRENS, 2 years; good healthy stuff, and lowest per 1000.
GARLIES MITCHELL, Nurseryman, Stranraer.

WANTED—SPRUCE FIR, well furnished stuff, from 6 feet to 8 feet.
COMMON LAUREL, 3 feet to 5 feet.
PORTUGAL LAUREL, 4 feet to 6 feet.
RHODODENDRONS, varying, 3 feet to 5 feet.
Quote price per 100 DELIVERED to Esher Station.
Address, GARDINER, Esher.

WANTED, a medium-size, Fan-trained Pine-apple NECTARINE, on short stem, to fill up blank in house. State size and price to
The LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, The Vineyard and Nurseries, Garston, Liverpool.

WANTED, quantity of Cuttings (eyes), late varieties GRAPE VINE—Black Alicante, Mrs. Pince, Lady Downes', Gros Colmar, &c. Particulars to
W. DAUNCEY, Lambley, Notts.

BARR'S PROVEN CHOICE SEEDS selected from the finest and purest Stocks and the growths tested. Cannot fail to give every satisfaction. Send for our "Descriptive Spring CATALOGUE of Choice Seeds, for Flower and Kitchen Garden."
BARR AND SON, 12 and 13, King Street, Covent Garden, W.C

Begonias a Specialty.

LAING'S BEGONIA SEED.—Awarded Two Gold Medals. From Prize Plants, in sealed packets. Choice mixed, from single varieties, 1s., 2s. 6d., and 5s. per packet; double varieties, 2s. 6d., 3s. 6d., and 5s. per packet. Collections—12 named varieties, separate, 5s. 6d.; 6 ditto, 3s. Order direct from us, to procure the genuine seed.
JOHN LAING AND CO., Seedsmen, Forest Hill, S.E.

A Specialty.

RHODODENDRONS, grown in sandy loam.—Thousands of Rhododendron ponticum, catawbiense, hybridum, and all the choicest named varieties. Magnificent plants, 1, 2, to 3 feet, beautifully set with buds. Price per dozen, hundred, or thousand, on application to
JOHN CRANSTON & CO., King's Acre Nurseries, Hereford.

Reduced Prices to meet Depression.

DESCRIPTIVE CATALOGUE, comprising fine transplanted FRUIT TREES, ROSES, Hardy CLEMATIS, RHODODENDRONS, CONIFERS, TREES and SHRUBS, CLIMBERS, FOREST TREES, &c., free on application to
GEO. JACKMAN AND SON, Woking Nursery, Surrey.

Rhododendrons.

JOHN WATERER AND SONS, Bagshot, Surrey, are the Great Exhibitors of Hardy Scarlet and White RHODODENDRONS.
Their CATALOGUE is ready, and may be had on application.

To the Trade.

WATKINS AND SIMPSON have now Published their WHOLESALE CATALOGUE of VEGETABLE and FLOWER SEEDS, &c., for the coming season. Copies may be had on application. Any Customer not having received one will oblige by letting us know, when another shall at once be posted.
Exeter Street, Strand, W.C.

Begonia Seed.

BOX'S JUBILEE VARIETIES.—New Seed from the finest prize Plants of singles in cultivation, 1s., 2s. 6d., and 5s. per packet, all equal quality. GENERAL SEED and PLANT LIST now ready.
JOHN R. BOX (for last ten years partner with John Laing), East Surrey Seed Warehouse, Croydon.

Garden Flower Seeds and Spring Bulbs.

C. G. VAN TUBERGEN, Jun., BULB GROWER and SEEDSMAN, Haarlem, Holland, begs to announce that his CATALOGUE of the above is now ready, and may be had free on application to
Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, Crutched Friars, London, E.C.

Vertegans' Startling and Delicious Fruits.

BLACKBERRIES (Black, Golden, Pink, and White); Grape Fruit, Siberian Apricot, Blue Currant, &c. Illustrated CATALOGUE free on application.
Chad Valley Nurseries, Birmingham.

Vertegans' Startling and Useful Novelties in

SEEDS, FRUITS, and FLOWERS; Golden RADISH, CUCUMBER-MELON, MELON-PEAR, Tree TOMATO, and Bush TOMATO. Illustrated CATALOGUE of about 60 pages, free to all.
Chad Valley Nurseries, Birmingham.

Gardening Made Easy and Economical by Perusing

VERTEGANS' ILLUSTRATED CATALOGUE of Selected Seeds—specially arranged to meet these times. Gratis and post-free to all.
Chad Valley Nurseries, Birmingham.

IMPORTANT to ORCHID GROWERS.
Special offer of Light Brown ORCHID PEAT, full of Pure Bracken fibre; also a good GENERAL PEAT.
Quotation with sample on application to
THE PEAT ASSOCIATION,
10, Cullum Street, London, E.C.
Sole Agent for the Continent—E. J. Voûte, Zeist, Holland.

SALES BY AUCTION.

Tuesday Next.
ORCHIDS in FLOWER.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, January 25, at Half-past 12 o'Clock precisely, a very fine collection of ORCHIDS, in flower or bud, comprising amongst others the following :—

Lælia elegans, grand variety.	Cattleya Mendelii
Cymbidium Lowianum.	,, Trianæ alba
Cœlogyne cristata Lemoniana.	Masdevallia macrura
,, Gardneriana	Odontoglossum Alexandræ, many fine varieties and hybrids.
Cypripedium euryandrum.	,, Rossii, var. aspersum.
,, Leeanum	
,, Morganæ	

Cattleyas, Odontoglossums, Dendrobiums, &c.
On view morning of Sale, and Catalogues had.

Wednesday Next.
5000 LILIUM AURATUM, received direct from Japan.
Splendid Bulbs.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on WEDNESDAY NEXT, January 26.

Friday Next.
CATTLEYA LAWRENCEANA.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, January 28, at half-past 12 o'Clock precisely, a very grand Importation of CATTLEYA LAWRENCEANA, collected and brought home by Mr. Kromer from the Roraima Mountain. C. Lawrenceana is extremely rare in its native country, and is one of the very finest of the genus. Also the very beautiful and rare ONCIDIUM LOXENSE; in habit it resembles O. macranthum, and the sepals and petals are very dark, with a large bright orange lip; the true ONCIDIUM MACRANTHUM HASTIFERUM, in fine order; together with a splendid importation of the dark and brilliant flowered variety of CATTLEYA MAXIMA, C. MOSSIÆ MATUTINA, ONCIDIUM NUBIGENUM, CATTLEYA PERCIVALIANA, and many other rare and fine ORCHIDS.
On view morning of Sale, and Catalogues had.

Every Wednesday and Saturday.
SALES of GREENHOUSE PLANTS in variety, a choice Assortment of English Home-grown LILIES, 600 Standard and Dwarf ROSES to name, FRUIT TREES, CARNATIONS, LILY of the VALLEY, LILIUM AURATUM, and various HARDY BULBS and HERBACEOUS PLANTS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., EVERY WEDNESDAY, at half-past 12 o'Clock, and EVERY SATURDAY, and half-past 11 o'Clock, consignments of PLANTS and BULBS, &c., as above.
On view morning of Sale, and Catalogues had.

Sunbury.
UNRESERVED CLEARANCE SALE.
By order of Mr. H. Willmer, who is absolutely relinquishing the Business.
ALTERATION of DATE to TUESDAY, February 1, 1887.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, The Springfield Nursery, Sunbury (close to the Railway Station), on TUESDAY, February 1, at 12 o'Clock precisely, the whole of the well-grown NURSERY STOCK, in capital condition for removal, including 1500 Common Laurels, 2 to 4 feet; 500 Green Hollies, 2 to 6 feet; very fine Horse Chestnuts, 6 to 18 feet; 500 Lombardy Poplars, 3 to 16 feet; Aucubas, Spruce Fir, Conifers in variety, 1000 Tritoma Uvaria, 1500 Gentiana acaulis, and other stock.

May be viewed one week prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C., and Leytonstone.

N.B.—The GLASS ERECTIONS and GREENHOUSE PLANTS will be SOLD IN THE SPRING.

Hertford.
PRELIMINARY NOTICE.
Absolute Clearance Sale, by order of Messrs. Francis Bros., who are relinquishing the Business.
Highly Important Sale. To Noblemen, Gentlemen, and the Trade.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to SELL by AUCTION, on the Premises the several Nurseries at Hertford (excepting the Home Nursery, which has been disposed of privately in an entirety), on MONDAY, February 14, and following days, the whole of the extensive NURSERY STOCK, which is in an excellent and thriving condition.
Further particulars will appear next week.

Appley Towers, Ryde, Isle of Wight.
By order of the Executors of the late Lady Hutt.

MESSRS. WALLIS, RIDDETT AND DOWN have received instructions to SELL by AUCTION, on the premises, as above, on THURSDAY, January 27, 1887, at 1 o'Clock punctually, the whole of the valuable STOVE and GREENHOUSE PLANTS, FARM IMPLEMENTS, and various OUTDOOR EFFECTS, comprising about 4000 choice Conservatory and Bedding-out Plants, including specimens of the Rhynchospermum jasminoides, Bougainvillea, Astrapea, Allamanda, Rondeletia, Dichorisandra, Hibiscus, Stephanotis, Petræa volubile, Epiphyllum, Euphorbia, Franciscea, Clerodendron, Prichardia filamentosa, Geonama Hartwegii, Ptychosperma Alexandræ, Eucharis, Camellia, Azalea, Polygala, Dracæna, &c. The Farm Implements comprise a Hay Shaker, by Ransomes & Co., a Self-acting Horse Rake, by Howard, an Iron Double-Cylinder Roller, and numerous other effects.
May be viewed on the preceding day, and morning of Sale.
Catalogues may be had at the Auctioneers' Offices, Ryde.

Monday Next.—(Sale No. 7330.)
IMMENSE IMPORTATIONS from JAPAN, &c.
15,000 grand Bulbs of LILIUM AURATUM, L. SPECIOSUM ROSEUM, RUBRUM, and ALBUM, L. TIGRINUM flore-pleno; L. THUNBERGIANUM, L. AURATUM PLATYPHYLLUM, L. ELEGANS SANGUINEUM, &c., just received from Japan in the finest possible condition; 5000 South African TUBEROSES (extra fine roots), seven cases of ARAUCARIA EXCELSA as received, sixty clumps of CYPRIPEDIUM SPECTABILE, Hybrid and other GLADIOLI, Home-grown LILIES, &c.

MR. J. C. STEVENS will SELL the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, on MONDAY NEXT, January 24, at half-past 12 o'Clock precisely
On view morning of Sale, and Catalogues had.

Wednesday and Saturday Next.
HARDY PLANTS and BULBS in variety.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY and SATURDAY NEXT, January 26 and 29, at half past 12 o'Clock precisely each day:—Several hundred Standard and Dwarf Roses, including all the leading varieties; Pyramid and Dwarf-trained Fruit Trees, of sorts; Hardy Ornamental Shrubs and Conifers, Border Plants, Spiræas, Lily of the Valley, Gladioli, Liliums, &c.
On view mornings of Sale, and Catalogues had.

Thursday Next—(Sale No. 7333).
ESTABLISHED ORCHIDS, Stove and Greenhouse Plants, &c.

MR. J. C. STEVENS will in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, on THURSDAY NEXT, January 27, a small collection of Established Orchids, and Stove and Greenhouse Plants formed by A. Blackborne, Esq.
On view morning of Sale, and Catalogues had.

Thursday Next—(Sale No. 7333).
Imported and Established ORCHIDS.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King St., Covent Garden, by order of Messrs. Shuttleworth, Carder & Co., on THURSDAY NEXT, January 27, at Half-past 12 o'Clock precisely, a fine lot of Imported and Established ORCHIDS, comprising Odontoglossum crispum (best type), O. Pescatorei, Lælia anceps (white var.), rare and fine Masdevallias, Oncidiums of sorts, &c.
On view morning of Sale, and Catalogues had.

WANTED, on Lease, GLASSHOUSES, suitable for Cucumber, Tomato, and Flower Growing, with Cottage, &c.
T. H., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

London (30 miles from).
OLD-ESTABLISHED NURSERY BUSINESS, with an extensive connection.
Satisfactory reasons for disposal.

MESSRS. PROTHEROE AND MORRIS are instructed to FIND a PURCHASER for one of the oldest established NURSERY BUSINESSES within a similar distance of London. The incoming would be subject to a valuation, but probable amount about £7000, or a PARTNERSHIP would be entertained.
Full particulars of Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, London, E.C.

Middlesex.
TO CUT-FLOWER GROWERS.

TO BE SOLD, at a sacrifice, a well-known MARKET NURSERY, with 25 Greenhouses, 10 Pits, &c., containing about 15,000 feet of Glass. Moderate Rent (£47 nett).
Full particulars and terms on application to Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, E.C.

London, S.W.
TO BE SOLD at a GREAT SACRIFICE.
To Orchid, Cut Flower, Fern, or Palm Growers.
Excellent Opening for Two Persons.

TO BE SOLD, a well-established NURSERY, with nearly 20,000 feet of Glass, Stabling, detached Residence, and 1 Acre of Ground. Nominal rent of only £26. Price for whole, £1200, payable by arrangement.
Apply to PROTHEROE AND MORRIS, 67 and 68, Cheapside, E.C.

To Nurserymen and Others.

TO BE SOLD, Freehold, 21 Acres of good LAND, the Proprietor Nursery, with a good Double-fronted Eight-roomed Dwelling-house, Stabling, Harness-room, Out-buildings, Large Yard, plenty of pure Water, well, substantially-built House and other Buildings, all compact, and the land is all Ring-fenced, on high main good road, between two railways, one on main line, 23 miles from London, in the most healthy part of England.
An opportunity seldom offered for such a most desirable, compact Estate as above. Stock, all as it stands included, price £2500.
A Bargain, of which a part can remain at 5 per cent. interest.
Address DELTA, 41, Wellington Street, Covent Garden, London, W.C.

TO LET, a small FRUIT and FLORIST BUSINESS, near Oakham, Rutland; five Glass Houses, and nearly 2 acres of Fruit and Nursery Stock at valuation.
Apply, H. CLARK, Ayston Hall Gardens, near Uppingham.

Landscape Gardening.

H. F. MALLER (of the firm of B. Maller & Sons), late Pupil of the Crystal Palace School of Landscape Gardening, is prepared to FURNISH PLANS, or undertake any kind of the above work.—61, High Street, Lewisham.

W. U N W I N,
FLOWER and FRUIT COMMISSION SALESMAN,
The Piazza, Covent Garden Market, London, W.C.
Established 15 years.
Empties and Labels supplied.

APPEAL
TO
THE BENEVOLENT.

Some of the Readers of the *Gardeners' Chronicle* may remember CHAS. G. ELLIOTT, who for several years managed the Book Department and Branch Post Office at the Crystal Palace, and who was mainly instrumental in obtaining a very handsome Testimonial for the late Fred. Wilson, at that time Manager of the Crystal Palace Shows.

For the last few years Mr. ELLIOTT has been most unfortunate; first, his wife died, after a long and painful illness; immediately afterwards, his sight was impaired by cataract, and the left eye has been blind and useless ever since; and beyond this, he has suffered heavy pecuniary losses. He has now become absolutely destitute, and a few pounds to help him through the next few weeks until he obtains a situation which has been promised him, will be of great service to him.

The Rev. W. B. PHILPOT, M.A., Vicar of Bersted, Bognor, for whom Mr. ELLIOTT acted as Secretary and Librarian some two or three years, has kindly given permission for his name to be used as a guarantee of its being a case of genuine distress; and W. RICHARDS, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C., will thankfully receive and acknowledge in these columns any donations that may be sent.

To Nurserymen, Florists, and Others.

THE SCHOOL BOARD for London are prepared to RECEIVE PROPOSALS and TENDERS for FURNISHING, PLANTING, and MAINTAINING SHRUBS, TREES, &c., at the various Board Schools within the London District.
Full particulars can be obtained on forwarding an addressed and stamped foolscap envelope to the ARCHITECT'S DEPARTMENT, School Board Offices, Victoria Embankment, W.C., from TUESDAY, the 25th day of January, until THURSDAY, the 27th day of January, 1887, both inclusive.
January 20, 1887.

SQUELCH AND BARNHAM, North Row, Covent Garden, London, W.C., REQUIRE any quantity of fine Muscats, for which they can offer good prices, also fine Black Grapes, Tomatos, Cucumbers, choice Flowers, &c.

SQUELCH AND BARNHAM, giving personal attention to all consignments, they are thus enabled to obtain the HIGHEST MARKET PRICE.

SQUELCH AND BARNHAM,
ACCOUNT SALES sent daily, and
CHEQUES forwarded weekly.
BANKERS and TRADE REFERENCES.
BASKETS and LABELS supplied.

Growers wishing to Dispose of the following to advantage, should communicate with

WISE AND RIDES, Covent Garden, W.C.—Arum LILIES, ROSES, EUCHARIS, TUBEROSES, LILY OF THE VALLEY, and other Choice CUT BLOOMS; also good Grapes.

Important Notice.
To Florists, Seedsmen, Horticultural Builders, &c.
PLANTS, FLOWERS, FRUITS and VEGETABLES a Specialty.

WM. J. WELCH begs to call particular attention to his productions for ILLUSTRATING BOOKS, MAGAZINES, CATALOGUES, and for ADVERTISING PURPOSES.
For Specimens see *Gardeners' Chronicle*, 1883 to 1886.
ADDRESS:—25, Wellington Street, Strand, London, W.C

To the Trade.
VEGETABLE and AGRICULTURAL SEEDS.

H. AND F. SHARPE will be pleased to give special quotations for all their fine selected stocks of the above-named Seeds of 1886 growth. Their prices will be found very advantageous to purchasers.
Seed-growing Establishment, Wisbech.

LILIUM AURATUM. — Good, plump, sound Bulbs, 6*s*., 9*s*., 12*s*., 18*s*., and 24*s*. per dozen; extra strong, 20*s*. and 42*s*. per dozen. All other good LILIES at equally low prices.
Mr. WILLIAM BULL'S Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

To the Trade.
SEED POTATOS.

H. AND F. SHARPE are prepared to make very advantageous offers of their fine selected stocks of SEED POTATOS to purchasers of a quantity. Their SPECIAL PRICED LIST comprises all the best and most productive varieties in cultivation.
Seed Growing Establishment, Wisbech.

SHRUBS and CONIFERÆ.—Laurustinus, 2 feet, bushy, 32*s*. per 100. Arbutus Unedo, 2 feet, 40*s*. per 100. Aucuba japonica, 2 to 2½ feet, 40*s*. per 100. Box, Tree, sorts, 1½ to 2 feet, 30*s*. per 100. Common Laurels, 2 feet, 12*s*. per 100. Colchic Laurels, 2 to 2½ feet, 16*s*. per 100. Grislinia littoralis, 2 feet, 35*s*. per 100. Sweet Bay, 1½ to 2 feet, 30*s*. per 100. Rhododendron ponticum, 1½ to 2 feet, 30*s*. per 100; ditto, 2 to 2½ feet, 40*s*. per 100, extra fine. Abies Douglasii, 2 to 3 feet, 30*s*. per 100; ditto, 3 to 4 feet, 40*s*. per 100; ditto, 4 to 5 feet, 70*s*. per 100, fine roots and well furnished. Araucaria imbricata, 2 to 2½ feet, 42*s*. per dozen; ditto, 3 to 3½ feet, 60*s*. per dozen. Cupressus Lawsonii, 1½ to 2 feet, 16*s*. per 100; ditto, 2 to 2½ feet, 20*s*. per 100; ditto, 3 to 4 feet, 50*s*. per 100. Cupressus erecta viridis, 1½ to 2 feet, 30*s*. per 100; ditto, 2 to 2½ feet, 40*s*. per 100. Retinospora plumosa, 1½ to 2 feet, 30*s*. per 100; ditto, 2 to 2½ feet, 40*s*. per 100, extra. Picea Nordmanniana, 2 feet, 40*s*. per 100. Thuia Lobbii, 2 to 2½ feet, 25*s*. per 100. Special offer by the 1000 for smaller sizes. GARLIES MITCHELL, Nurseryman, Stranraer.

ROBERT NEAL begs to call the attention of Gentlemen, Builders, and others who intend planting this season, to his stock of FRUIT, FOREST, and ORNAMENTAL TREES, SHRUBS, ROSES, &c., which are in fine condition for removal, and comprise especially those kinds which are most suitable for Town Planting. Free delivery in own vans within a distance of six miles.

CATALOGUES on application.

The Nurseries, Trinity Road, Wandsworth Common, S.W.

Notice.

King's Acre Nurseries, Hereford (Established 1785).

JOHN CRANSTON begs to announce that, having PURCHASED THE BUSINESS, together with the most valuable portion of the stock, from "Cranston's Nursery and Seed Company Limited," these Old-established Nurseries will, on and after NOVEMBER 2, 1886, be carried on by him under the name of

"JOHN CRANSTON AND CO."

King's Acre, Hereford.—October 1, 1886.

WINTER FLOWERING PLANTS.

ERICA SCABRIUSCULA, in flower, 12*s*. per dozen.
" HYEMALIS, in flower, 12*s*. to 18*s*. per dozen.
" WILMOREANA, full of flower-bud, 12*s*. to 18*s*. per doz.
" SINDRYANA, full of flower-bud, 12*s*. per dozen.
GARDENIA, bushy and well budded, 18*s*. per dozen.
AZALEA INDICA, in variety, full of bud, 18*s*. per dozen.
CAMELLIA, well budded, 18*s*., 24*s*., 30*s*., and 36*s*. per dozen.
GENISTA FRAGRANS, coming into flower, 12*s*. per dozen.

Full LIST on application.

JOHN STANDISH AND CO., Royal Nurseries, Ascot.

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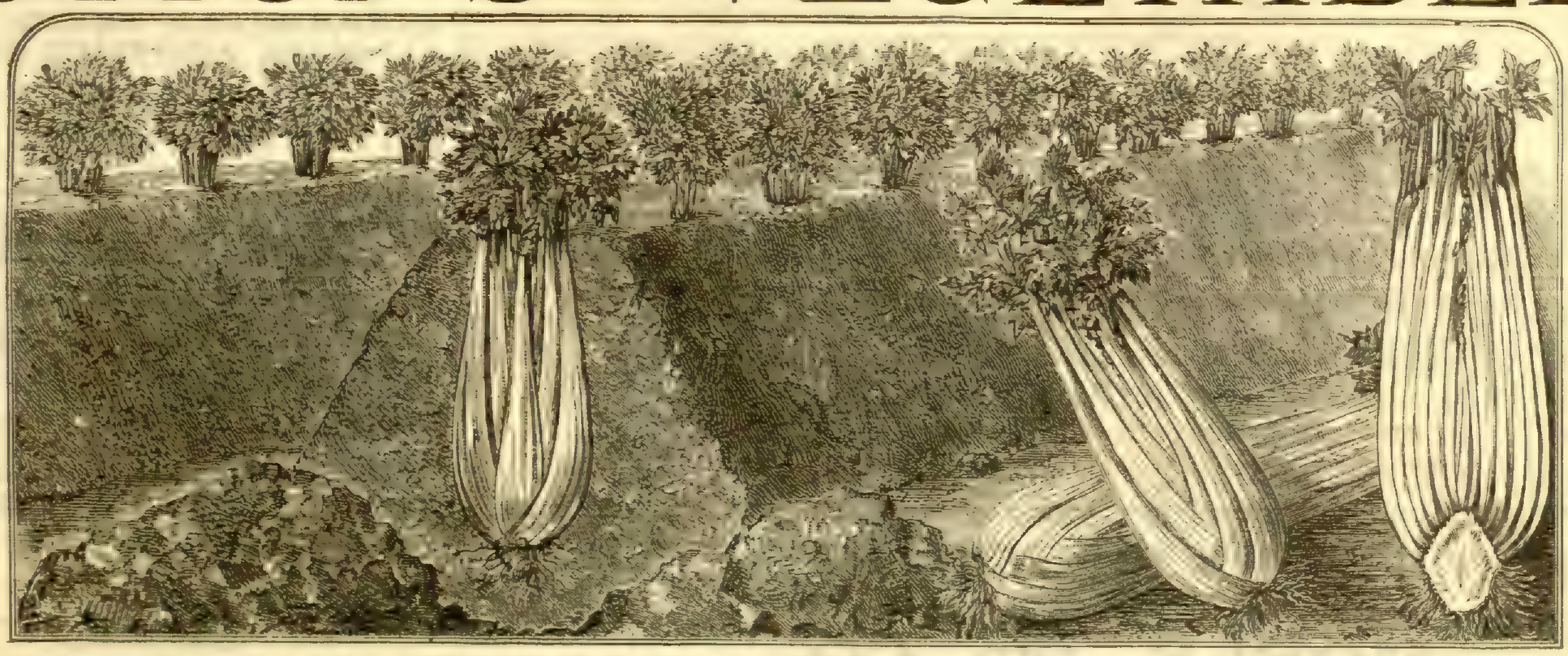

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As a Supplement to the "GARDENERS CHRONICLE" for next week, Jan. 29, will be published a Full-Page Wood Engraving, by Worthington G. Smith, of the most remarkable and beautiful Orchid of recent introduction, CATASETUM BUNGEROTHII, from the Collection of F. G. Tautz, Esq.

THE

Gardeners' Chronicle.

SATURDAY, JANUARY 22, 1887.

CLIMATE AND VEGETATION.

MANY of our readers will recall with pleasure the interesting series of articles published in this journal on the climate and vegetation of the Riviera, and on horticulture as practised by Dr. Bennet at Mentone. Those articles form part of Dr. Bennet's delightful book, *Winter and Spring on the Shores of the Mediterranean.* Of the general correctness of Dr. Bennet's views there can be no doubt, and it is certain that for the physician's purposes an investigation into the effects of climatal changes on plants at various stages of their growth affords more trustworthy information than the mere study of thermometric records. Mr. Charles Roberts, to whom we owe various interesting and useful publications relating to "phenology," is following up this question of the combined and continuous effect of various meteorological factors on plant life. "A meteorological instrument," he says, "records a momentary atmospheric condition. A plant does this, and much more; it records the current conditions, and sums up or registers all the past meteorological and geological conditions to which it has been exposed. Phenologists cannot accept mere inferences, however probable they may appear to be, and nothing short of simultaneous records will satisfy them."

Pursuing these ideas, Mr. Roberts selects for observation in the Riviera the plants mentioned in the accompanying list:—

"The plants and trees included in the schedule are well known in our winter health resorts, and require no botanical skill for their identification; but observations should not be recorded when there is any doubt on this head. The plants are arranged in three groups, to indicate roughly the chief varieties of climate of the Mediterranean basin. The first group indicates a hot, arid, sandy or rocky soil, and a dry, sunny atmosphere, like those of the south-east coast of Spain, Upper Egypt, and the borders of the African Desert. The second group characterises the

colder and damper climate and soil of the Riviera, Southern Italy, Sicily, Malta, Algeria, and Lower Egypt; and the third group the still colder and damper climates of the Italian lakes, the West Coast of France, Spain, and Portugal, end the South of England. This last group brings the ordinary climate of England into relation with that of the Mediterranean, and will connect this schedule with the one which I have specially prepared for differentiating local climates in the British Isles.

"It would be desirable to make concurrent observations on the maximum and minimum shade-temperature at each station (by means of verified registering thermometers, exposed in Stevenson's stands), to ascertain the extreme range of temperature, and the lowest which each plant will survive. We know, for instance, that the Lemon tree is killed by a temperature of 24° Fahr., and the Orange by 21° Fahr.; while the Olive tree will bear 16° Fahr., although its young shoots are killed by a temperature no lower than 25° Fahr.; and we gather from these facts that, at stations where these trees flourish, the temperature never falls so low as these figures indicate, even for a night or two, during many consecutive years. As observations on the rainfall cannot be carried on all the year, the relative dampness or dryness of different stations cannot be determined by the rain-gauge; and we must rely on the known habits of plants, in their relation to moisture of air and soil, to help us in this respect. Any one who has passed quickly between Nice, Palermo, and Algiers, cannot but have noticed the difference in the general aspect of the vegetation at each place; its greater activity at the latter station indicating a greater amount of moisture in the air and soil than at Nice, while Palermo holds an intermediate position.

"The following observations should be recorded of each plant in the list. Does the plant or tree grow at the station? Is it protected from the cold, sun, or wind? Does it blossom? and at what date does the first blossom appear? Do its fruit or seeds ripen, and at what date do they arrive at maturity? With respect to the deciduous trees (Pomegranate, Vine, Fig, Almond, and Horse Chestnut), at what date do the leaves open (first leaf-surface visible); the first blossoms open; and the first fruit or seeds ripen?

(1) Carob or Locust-Bean (Ceratonia Siliqua)
Prickly Pear or Indian Fig (Cactus Opuntia)
American Aloe (Agave americana)
Date Palm (Phœnix dactylifera)
(2) Pomegranate (Punica Granatum)
Banana (Musa sapientum)
Lemon tree (Citrus Limonum)
Sweet Orange (C. aurantium)
Olive (Olea europæa)
Australian Blue Gum tree (Eucalyptus globulus)
Bamboo (Bambusa vulgaris?)
Dwarf European Palm (Chamærops humilis)
Oleander (Nerium Oleander)
(3) Magnolia (M. grandiflora)
Camellia (C. japonica)
Myrtle (Myrtus communis)
Vine (Vitis vinifera)
Common Fig (Ficus carica)
Adam's Needle (Yucca gloriosa)
Almond (Amygdalus communis)
Horse Chestnut (Æsculus hippocastanum)

"By means of simultaneous observation on these plants, or a small number of them, it will be easy to lay down on a map isophenal lines similar to, but by no means identical with, the isothermal lines laid down by meteorologists; and thus produce a diagrammatic representation of corresponding climates, and the difference of one station from another."

Following up this subject Mr. Roberts discusses, in the *Transactions of the Sanitary Institute of Great Britain*, the evidence afforded by plants as to the relative degree of purity of the air in large towns, and he gives a diagram representing a series of squares one within the other. Thus, in his illustration it is shown that in the outermost square the Larch, the Scotch Fir, and the Heather, will grow and lichens may be found on the trees. In the succeeding square, supposed to represent a more deteriorated atmospheric state, the plants included in the outer square will not grow, but the Sycamore, the Horse Chestnut, the Yew, the Deodar, the Arbutus, the Laurustinus, and various fruit trees will still thrive, which they will not do in the next square, and so on, till we come to the central space, in which—doleful spot—no plants at all are mentioned; but even here Poa annua, and Polygonum aviculare, and Docks will grow, as every one who will visit the courts and alleys of London can see for himself.

Some quarter of a century ago and more there was a tradition that evergreens would not grow in London, and, therefore, the squares were planted with Privets and Lilacs, the deplorable aspect of which in the winter months was but too familiar. People are beginning to find out, however, that many evergreens do relatively well in the most confined places, especially those with thick leathery leaves like the Holly or Yucca, and which are well provided with chlorophyll and consequently proportionately vigorous. Conifers, as a rule, do not do well in such places, indeed one of the best rough tests of the purity of the air may be obtained by the observation of the common Arbor-vitæ, Thuia or Biota orientalis. If the reader will wend his way from the suburbs, say at a distance of 4 or 5 miles from the Thames on either side towards the banks of the river, he will have ample opportunity of noting how the lower branches of this shrub gradually become denuded of leaves, till at length the wretched plant resembles a disorganised Birch-broom with a few leaves at the top, and then it disappears entirely. Much to our surprise, however, we know of cases in which Pinus excelsa grows in localities where the Biota will no longer do so.

As a matter of practice much depends upon the care bestowed by those in charge. Frequent cleansing with a syringe or garden-engine will enable plants to grow in the most unlikely places, and in the cases we have in view this demands so little time and attention that we can but press it on the attention of the Society over which Lord Brabazon presides. We know from our own experience of a garden where Roses had long since ceased to blow, but where now not only a large assortment of choice evergreens may be found, but where also an occasional Moss Rose may now be plucked; and this we attribute, not to any improvement in the atmosphere, which is probably more smoky if not fouler than formerly, but to increased attention to syringing.

It is obvious that the sources of fallacy and exception are so numerous that it will be long before we can speak with any degree of statistical precision. Such an amount of precision is, however, quite within the bounds of probability, and it must be attained by extended comparative observations on plants under all conditions and circumstances, such as Mr. Roberts advocates from the point of view of hygiene.

UPRIGHT CORDON PEARS.

MUCH of our finest fruit is now obtained from trees trained as single stems—simple—cordon, or with two main branches, obtained by cutting maiden trees back to about 1 foot from the ground. The simple upright or horizontal cordon is not headed down, as was usual some years ago, but the stem, which may be regarded as the chief storehouse of food of the plant, is laid against the wall or wire, as the case may be, in its entire length. Messrs. Cheal, of Crawley, Sussex, to whom we are indebted for the photograph engraved at p. 105 (fig. 24), say, that by not beheading the young tree the lower part of the stem becomes furnished with fruit-buds and spurs, while if the leader be shortened the new growths assume the form of wood-buds. When the cordons are furnished with fruit-buds from top to bottom, which may occur before being permanently planted, they may afterwards be maintained in a fruiting condition by appropriate pruning. This pruning is performed in July, when the foreright and lateral shoots are cut back to within two or three eyes of the last pruning, and the process is repeated in September. The trees being thus restricted at the top must undergo similar restriction at the root; therefore, biennial or triennial lifting must be performed to check undue luxuriance, at the same time surface feeding and mulching must be adopted if fine fruit is expected—mulching being especially necessary in soils that are light or sandy in their nature.

PLANTS NEW OR NOTEWORTHY.

LÆLIA ANCEPS SANDERIANA, *Rchb. f.*

THIS glorious beauty is in flower with Mr. Alfred Wilson, Westbrook, Sheffield, grown by Mr. Edward Pidsley, from whose letter I copy the following details:—"The flower sent was cut from a three-flowered spike, which flower expanded on December 25 last. The pseudobulb (English grown) from which the flower is produced is about 5 inches long by 4 inches in circumference, and the leaf is about 7 inches long by 2 inches in breadth. The imported pseudo bulbs range from 4 to 6 inches in length by 4½ to 5½ inches in circumference, leaves 5½ to 7½ inches long by 2 to 2½ inches broad. They are thick and leathery. Old pseudobulbs are somewhat furrowed. The specimen consists of about a hundred pseudobulbs. It has been recently purchased by Mr. Wilson from Messrs. Backhouse & Son, of the York Nursery. They say it is the best white Lælia anceps they have yet flowered."

The flower arrived, after travelling seven days, in a glorious state, as Mr. Pidsley is one of those who understand packing during frost. It is uncommonly large, surpassing at least by one-fourth any common anceps flower. The substance is very stiff; broad sepals, nearly as strong as of a Vanda tricolor; petals very broad. As long as you do not look quite near you think it is Dawsoni, but a careful inspection shows the separation of the mauve blotch on the anterior disc of the lip. The red nerves or side laciniæ are, indeed, stronger than is the type of Sanderiana, but I have seen those nerves subject to many variations, and would not wonder if one of Mr. Sander's typical plants proved to-morrow to have the same strong nerves. I think of superfluous variety names—"Lasst genug sein der grausamen spiels."

Rich as England's orchidists are in nearly fabulous wonders of beauty and rarity, I think this just described must belong in the first class of them. As long as you stand before it you believe it to be the best of all. Ah! there are so many, many pound notes of high value, but how few such plants exist on the rich earth! *H. G. Rchb. f.*

CATTLEYA × HARRISII, *nov. hybr. art.*

A glorious grand Cattleya. It was raised from Cattleya Mendelii and guttata Leopoldi. I obtained those details from Mr. Harry Veitch, no doubt sent by Miss Harris. Five bulbs with leaves are all that exists of the fine novelty. Two have two leaves 1—2½ inches wide to 7 inches long. Bulbs rather flat and plaited, 1—6 inches long. The habit is that of Cattleya Mendelii.

So much for my information. Now I tell what I saw. The flower makes me think a moment of Cattleya scita, of Cattleya guttata Williamsiana and lilacina, but it is far superior. The sepals and broad petals are of the finest and clearest amethyst, with numerous dark very small point-like purple spots. The lip forms a long tube with its side laciniæ, which are bent at their fine acute point, when the remainder is light, white, rosy, lightest sulphur-coloured inside, with purple lines in the disc. The anterior lamina is stalked and goes out in a wide hastate reniform bilobed blade, toothed and wavy, of the richest purple possible. There are very obscure indigitations of the usual asperities of Cattleya guttata on the anterior disc. Column white with three purple spots at the top, as is often seen in Cattleya Mendelii. The structure is intermediate between that of the parents. The flower is as large as that of a very strong Cattleya granulosa.

The plant is dedicated to the late Dr. Harris. It has only flowered now in the collection that has been

kept by the family at The Grange, Lamberhurst. *H. G. Rchb. f.*

ALOCASIA EMINENS, *N. E. Brown, n. sp.*

A fine bold-habited and ornamental species, allied to A. zebrina, A. singaporensis, and A. Thibautiana, but quite distinct from either. It was sent to me a short time since by Mr. W. Bull for a name, and on comparison with the specimens in the Kew Herbarium I have come to the conclusion that it belongs to the same species as a specimen collected in Borneo by Beccari (No. 382), and which Dr. Masters, when describing A. Thibautiana, thought might be referred to that species (see *Gardeners' Chronicle*, April 27, 1878, p. 526), but which it certainly cannot be; Engler, on the other hand, refers Beccari 382 to A. longiloba (in Beccari, *Malesia*, vol. i, p. 292), which also is quite a different plant; and any one who saw the three in a living state would unhesitatingly pronounce them to be different species. Except that the plant came from the East Indies, Mr. Bull informs me that he is unable to give me the locality. It is a good companion plant to A. grandis described by me in these pages a short time since, also from Mr. Bull's collection. The following description of A. eminens is drawn up exclusively from living specimens furnished me by Mr. Bull:—

Glabrous in all parts. Cataphyllary, or scale-leaves, 6—10 inches long, pale reddish, soon withering. Petiole 3½—4½ feet long, terete, 1 inch thick at the base, tapering upwards, olive-green with a coppery hue, passing into very pale green towards the apex, transversely marked with rather indistinct, irregular, narrow, blackish-green bars. Blade of the leaf peltate, ovate-sagittate, 20—22 inches long, including the hind lobes, 9—10½ inches broad across the insertion of the petiole, and 7½—8 inches across the tips of the hind lobes; upper surface dark green, under surface purple with very pale green midrib and primary veins; front lobe ovate, subacute or obtuse, with a short cuspidate point ½—¾ inch long; hind lobes two-thirds as long as the front lobe, elongate-triangular, obtuse, with a subacute and perfectly triangular sinus between them 7—8 inches deep. Midrib with its postical branches and primary veins all prominent and rounded on both sides; primary veins four to five on each side the midrib, distant, the lower pair nearly straight, the rest slightly curved; the postical branches of the midrib diverge at an acute angle, and give off four stout distant primary veins from their upper edge, and one or sometimes two slender veins from their lower edge towards the tips of the hind lobes, not denuded at the sinus, the insertion of the petiole being ½—1 inch distant from the base of the notch. Peduncles in pairs (always?) from the axils of the leaves 12—18 inches long, 3½—4 lines thick, terete, light green. Tube of the spathe 16—18 lines long, ¾ inch thick, ellipsoidal, light green; limb of the spathe reflexed, 3½—4 inches long, 1—1¼ inch broad, oblong acute, pale greenish-white, veiny, and somewhat translucent. Spadix 3½—4¼ inches long; female part cylindric, ½ inch long, ovaries densely packed, sub-globose, light green, ovules about six, basal; neuter part ½ inch long, creamy-white; male part ¾ inch long, creamy-white; appendix conoidal acute, 1¾—2¼ inches long, slightly labyrinthic-rugulose, ochreous. *N. E. Brown, Herbarium, Kew.*

FIG. 24.—UPRIGHT CORDON PEAR TREES AGAINST A WOODEN SHED AT MESSRS. CHEAL'S NURSERY. (SEE P. 104.)

GRASS SEEDS FOR ROYAL PARKS.—Mr. E. J. Jarman, nurseryman, Chard, Somerset, has received an order for the supply of grass seeds to several of the Royal parks.

ROSES.

MARECHAL NIEL ROSE.

THOSE of our readers who possess more or less glass accommodation, but not a Rose-house proper, should purchase a few young pot-plants of the above much-esteemed Rose, either on its own roots or plants which were worked on the seedling Brier last January and grown on uninterruptedly from then till the fall of the leaf, and plant them outside their greenhouse in good soil, taking the long Vine-like shoots through openings made in the wall immediately under the wall-plate, and close to the trullions, and train them to a series of wires fixed horizontally to the rafters within 9 or 10 inches of the glass, and the result next April, May, and June, will be such as to repay them tenfold for their trouble. *H. W. W.*

THE MARÉCHAL NIEL ROSE FOR FORCING.

The Maréchal Niel has but one fault—for many purposes there is too much of it; though many will possibly dissent from this view, and assert that it is impossible to have too much of such a good thing. But for buttonhole and other bouquet purposes the Maréchal is regarded by many as being too massive, and may readily be surpassed by such mere budlets in comparison as Madame Falcot, Safrano, Niphetos, &c. But these are as rushlights to a sunbeam in competition with the Maréchal for general decorative and furnishing purposes. And of single blooms of this Rose it may be added that if too heavy for some kinds of bouquet-making, each flower is a finished bouquet, and in itself full to overflowing of richest golden beauty and sweetest fragrance. In precociousness and proliferousness the Maréchal Niel is also unrivalled. No Rose approaching its depth or substance of petal can be had in bloom so early, while none last in flower so long. Under skilful culture, in good condition, the plant seems all flower. Even the smallest shoots produce blooms of enormous size, while the stronger shoots break into bunchlets of blossom along their entire course. There is hardly a more magnificent sight within the entire range of horticulture than long cordons of Maréchal Niel Rose decorating roof, rafters, or richly clothing walls with golden drapery.

Many have counted Roses on the Maréchal, but I wonder if any one has weighed or estimated the gross weight of the produce of a large plant. I remember once being forcibly impressed by the lead-like weight of a twelve-dozen box, and am sure that the specific gravity of its golden harvest would so surprise most rosarians that they would cease to marvel that so little organisable matter was left over for Rose making to make presentable stems for the ponderous blooms.

There are three general modes of forcing Maréchal Niel Roses—by planting out, specially preparing plants in pots and flowering them once, treating them, in fact, as biennials, and growing bush, standard, or pyramidal plants in pots, and blooming them several or many years in succession. Each of the systems may be said to be on the whole alike in this rather startling peculiarity, that they only bloom once a year as a rule. It may be said that the same holds good of the Maréchal Niel in the open; but the surprising point here is that this does not apply so absolutely nor to the same extent to Maréchal Niel in the open as under glass. The probabilities of the case were wholly the other way. With climate under full control it might reasonably have been expected that the Maréchal Niel might have been forced into successional blooming as readily as Teas. It is, however, quite otherwise, and it is needful to recognise this at starting, to prevent disappointment. To guard, however, against misconception I must not be understood as asserting that no second flower will be gathered from Maréchal Niel under glass. Stray blooms more or less, but most less numerous, may be gathered, but nothing like a full crop, nor anything like so many as may often be gathered from standard Maréchals worked on the Dog Rose, in the open air, in the autumn.

There is no more successful mode of forcing the Maréchal Niel Rose than that of planting them out in borders a yard deep, formed of rather stiff maiden loam, enriched and slightly loosened by the addition of one-fourth rotten dung. Plant the plants at distances of a yard, or 6 feet apart according to their strength, the length of roof or wall they have to cover, and the time allowed for furnishing. In all cases it is wise to provide a sufficiency of root force, as this hastens produce, and provides against the contingency, which should be reckoned upon as a certainty among Maréchal Niels—a sudden break down of leading stems or main branches. There is no better mode of training them than over roof trellises, within 1 or 2 feet of the glass, after the manner of Peaches or Figs.

From the general method there are many differences and variations of pruning and training. Most of these, however, may be arranged under the general well-known methods—the long rod and spur system of pruning and training. The first consists in blooming a portion, or almost the whole, of the main shoots but once. The plants are furnished with two sets of wood, the blooming and the growing. The growing wood of the current year becomes the blooming of the next, and so on in succession in perpetuity. As soon as the bloom fades the flower-shoots are cut right out to their base. This either furnishes space to those growing shoots already started, or forces the production of vigorous shoots, that yet have most of the season before them to mature into fine flowering shoots for the following season. This system favours root vigour, and virtually renews the top of the Rose every year. By the dual process of severe and prompt pruning and vigorous growth the Roses renew their youth annually. Neither is any mode of training or of treatment better calculated to enable this Rose to battle with one of its most difficult and destructive ailments, that of wart strangling at the collars or on the main limbs. This radical and annual mode of pruning enables the cultivator to circumvent the warts by under-pruning, and so doing away at once with their restrictive force and strangling effect.

Spur pruning is so well understood as hardly to need enlarged definition. The foundation of the system is laid in the more or less permanent retention of most of the main shoots. After blooming the blooming shoot is cut or spurred back, as the process is called, to from one to three buds of the leading or main branch. From each of these cut-back spurs fresh shoots break into leafage and flower-buds next season, and by again pruning close back so soon as the flowers fade, and so on in perpetuity, or at least for a term of years. No system will yield a larger harvest of bloom than this simple one of spurring-in the lateral or side shoots on the main branches of the Maréchal Niel Rose, though the rod system—and this may be short or long at will or convenience—will yield a larger percentage of big blooms. This fact often suggests the adoption of a mixing of the two systems of rod and spur pruning and training, by which the advantages of both plans, and especially the recuperative force, the long rod system may be brought to bear on the extension of the life and the maintenance of the full vigour of the plant. Without dwelling at length on the vexed question of stocks, it may suffice here to say that there is no better stock for Maréchal Niel Rose for forcing than that of the Gloire de Dijon. Good results have also been obtained from own-root Maréchals, and also from Maréchals on the Brier.

Temperature, general treatment under glass, and forcing the Maréchal Niel in pots will furnish the subject of my next communication. *Rosa.*

PURITY OF WATER.—It is alleged that the presence of Watercress (Nasturtium officinale) in a stream is an evidence of the wholesomeness of the water, while, on the other hand, the presence of Duckweed (Lemna minor) is an indication of impurity.

CULTURAL MEMORANDA.

HELLEBORUS NIGER.

IN spite of the almost unprecedented severe weather, the Christmas Roses are making a brave show in the rock garden at Kew. Most of the principal forms in cultivation are there represented, and with the exception of the variety angustifolia, they have been flowering for some time past. Mr. Brockbank's variety—indeed, we believe one of the plants at present there was sent by that gentleman from Brockhurst—is a little later in flowering than the others, and carries the succession of bloom over a much longer period than in its absence, and as the greatest scarcity of flowers occurs about this time it is a plant to be recommended for every collection. It seems to be doing better at Kew than we have seen it anywhere in the neighbourhood of London, the plants being well furnished with large healthy leaves, and abundance of flowers just preparing to open. I dare say it would be kept in better health by an annual lifting and breaking up, replanting in fresh rich and well-drained soil; a good depth of soil should also be given. H. caucasicus, H. altifolius rubra and major, are all worth growing, as well as the old niger itself—not to be despised, though superseded. *D.*

EUCHARIS AMAZONICA.

In order to grow and flower this popular sweet-scented flower satisfactorily, the bulbs should be potted every second or third year in a compost consisting of three parts fibry loam and one of pulverised cow-dung and small charcoal, with a dash of coarse sand. In potting, the bulbs should be sized, and kept close to the surface of the soil, giving tepid water to settle the latter about the roots, after which no water should be given, except a slight sprinkling overhead morning and afternoon in damping the house, until the roots have pushed into the soil, when weak liquid manure should be given when necessary until the soil is well filled with roots. It should then be withheld until the flowering spikes appear, when the applications of liquid manure at the roots should be resumed, and continued for a few weeks after the plants have gone out of flower, at which time the plants should again be rested for the purpose indicated—and so on throughout the year, always giving the plants a stove temperature. *H. W. W.*

VIOLETS.

Plants of Marie Louise have been yielding us goodly supplies of their large dark blue and most sweetly scented flowers during the last four months. They were potted up singly in 3-inch pots last May, and grown on for three or four weeks in close frames on a south border, and all the superfluous runners emanating therefrom were kept pinched out prior to and after planting them out of the pots in the said frames at 6 inches apart, and within a few inches of the glass. They were kept well supplied with water at the roots and overhead when necessary during the summer months, the plants being syringed and the frames closed every bright afternoon about half-past 4 o'clock until they became sturdy and well furnished with flower-buds, when the sashes were drawn off day and night until the approach of frost, which necessitated a covering of mats and Fern being put on the frames. Excessive damp as well as frost must be guarded against during the dull winter months. *H. W. W.*

SCILLA BIFOLIA.

Scilla sibirica has so long been held in high estimation by possessors of a garden, that it is difficult to imagine a showier and more beautiful Scilla as existing. We nevertheless possess in Scilla bifolia a lovely plant, which vies with the Chionodoxa itself. Scilla bifolia is not so well adapted for pot culture, but when planted in patches in the open ground, and permitted to remain and extend itself unmolested, it certainly has no equal. Unlike Scilla sibirica, with its meagre, detached, drooping flowers, albeit of beautiful colour, Scilla bifolia blooms in

cemes, more like the better forms of Myosotis; and these clusters are more numerous, and turn all eir blooms upwards, especially if snow lie beneath around them, they exhibit a beauty it would be fficult to describe. I strongly advise all who ssess suitable spots wherein to grow this gem to tain it another year, and let it remain undisturbed a few seasons together. *X.*

Bulbs.

Hyacinths, Narcissus, Tulips, &c., which were tted when they were received from the nurcies last October, and then stood on and covered h sifted coal-ashes to the thickness of 6 or 8 inches dry situations out-of-doors, should be examined ry week, and any bulbs which have made inch or two of growth should be removed to a cing-house, the pots washed and then stood a shelf near the glass. An inverted flower-pot uld be placed over each plant for three or four s, so as to gradually inure the blanched growth light. Frequent applications of warm liquidnure at the roots will conduce to the production arge well-proportioned spikes of flowers. *H. H. W.*

OAKLEY COURT, NEAR WINDSOR.

This charming place is situate on the banks of Thames, about midway between Windsor and idenhead, and on the Berks side, although a tion of the estate is on the opposite or Bucks side he river, consisting of an ornamental plantation pasture field nearly 4 acres in extent. This was chased by the late Lord Otho Fitzgerald, in order keep free from intrusion that portion of the Bucks re immediately fronting the mansion. From ndsor the visitor passes through the pretty village Clewer. From Maidenhead the village of Bray, ous for the vicar who was determined to hold to living whatever the change in the national n of religion, is passed, and also that portion of district known as Braywick. A more desirc country residence can scarcely be imagined, ting and fishing being close at hand, and hunting he district adjoining.

The Conservatory.

rom the lofty billiard hall the visitor proceeds the conservatory, which takes the form of a are hall. A prominent feature here is the antic antlers of an antediluvian Irish elk supd to be over 6000 years old. It is in an excellent e of preservation. The square hall has a ridge inside of which the variegated Cobœa scandens ariates and hangs down in graceful festoons: a d walk paved with Minton tiles leads to a ll octagon-house, which forms the furthermost ndary. There is also a semicircular walk on the t hand also leading to the octagon-house. ween the two walks are either planted out or ving in pots specimen Camellias, Palms, and lar specimens are in the octagon-house also. e there is also a general collection of flowering ts; overhead is a very fine specimen of Maréchal Rose filling a space of 36 by 12 feet, and which ls enormous masses of flowers in spring: the egated Cobœa scandens and other plants are seen on the roof of the walks and the octagonse also. All the plants are well kept and in the best lition. This conservatory affords a delightful exe to the mansion, and being heated with hotr pipes, forms a pleasant winter garden.

The Fruit-houses.

eaving the conservatory a small court is reached, this opens to a range of ornamental iron and s curvilinear houses, each 36 by 12 feet. The is a Peach-house—a second house in point of iness, planted with Royal George and Violette ive Peaches, the front walls on arches, and the ers inside and out. Next comes the early Peachse, planted with Early Victoria and Violette ive Peaches and Rivers' Orange Nectarine. The trees are in admirable condition, and bear excellent crops of fruit; at the back are the fine specimen Azaleas, large and small, which Mr. Lockie shows so finely at the Reading spring exhibition. Tomatos and French Beans are grown on raised back stages in early spring, and Strawberries on the upper shelves. These houses also accommodate bedding plants during the winter. Next comes an early vinery planted with Black Hamburgh and Buckland Sweetwater, the Vines ten years old, and in good bearing condition, the border inside, and fully 30 inches above the level of the house; there is also an outside border, which is a foot lower than the inside one, so that the outside roots should be as near as possible to the surface. Mr. Lockie states that he has to scheme to some extent, having at times insufficient fire-heat; still the Grapes do well, and his Bucklands finish superbly. The next forms a second vinery, and here can be seen young six-year old Vines in first-rate condition—Black Hamburgh, Alicante, and Gros Colmar.

Leaving this range, next comes a small oblong house, 20 by 12 feet, used also as a vinery, and planted with young rods of Madresfield Court and Muscat of Alexandria twelve months ago last May; the inside border is also raised. This was formerly a Rose-house, but has been converted into one for Muscats. Descending to a rather lower level, the visitor comes to a range of four lean-to houses for Melons, Cucumbers, and small stove plants; these houses have hip roofs, 2 feet in height at the back. These houses all face south-east, and are protected at the back by a belt of trees. The conservatory stands due south, and its length is 108 feet.

Close by is an old verandah converted into a plant-house, and now filled with zonal Pelargoniums, for Mr. Lockie finds them very useful indeed. This house is very handy in early summer for retarding Azaleas, &c. Among the zonal Pelargoniums is a white variety of excellent quality, locally raised, and having the name "I've got it." It is a capital white.

The Pleasure Grounds.

The pleasure-grounds are rich in Coniferous plants, such as Pinus excelsa, P. insignis, Wellingtonia gigantea, Cryptomeria japonica. Abies Pinsapo does remarkably well, so does Cedrus Deodara. There is a very fine specimen of Wellingtonia close to the river, and such an example of Cupressus Lawsoniana as one rarely sees. There is a singular specimen of Abies Douglasii on the lawn, which it is believed was planted over the site of some old cellars. It has made but little growth in height, as if incapable of getting away, but has spread out laterally to a considerable extent, and at the same time assumed a distinctly pendulous growth. Mr. John Waterer stated it was one of the most extraordinary specimens of this tree he had ever seen. Near to the river is a very fine example of the weeping Beech, which has extended itself for a considerable distance, and forms a very picturesque object. The Cuckoo's Nest is close by, represented by a huge trunk of an old Elm growing close to the water, which some 10 feet or so above the ground level has put out a circle of large branches, and between these is quite an open space covered with a boarded flooring and with seats around it. Access is gained to this by a rustic ladder, and charming views of the river are had in both directions. A grand old weeping Willow is also to be seen with its branches almost dipping into the silvery Thames.

The Terrace Walk.

Then comes the terrace-walk, a quarter of a mile in length, planted on both sides with ornamental Coniferæ, evergreen shrubs, and deciduous trees, at the end of which is a grotto with a cemented court by the river side, with a seat in a Willow overhanging the river, called the "Kingfisher's Corner." The vista opened up to this point from the mansion, is charming in the extreme.

Striking across the pleasure grounds to reach the kitchen garden, the visitor passes other fine specimen trees and Coniferous plants; the Douglas Fir is seen to be very finely developed; there is an admirable Abies Lowiana, tall and singularly narrow in dimensions, and not far away, another specimen of entirely different growth; there are some fine examples of Abies Pinsapo, Pinus australis (?) is also very fine. There is also a very large specimen of a weeping Ash, enclosing a charming seat in summer. The larger Conifers were planted by Mr. Hall, say about twenty years ago; the smaller ten years ago; and nearly all of them have been shifted. Not far from the mansion is as fine a specimen of the golden variegated Wellingtonia as can be found in the country, with the variegation, good, and evenly distributed. Golden Hollies about the lawn are conspicuous by their rich variegation, and golden-headed Irish Yews are equally attractive.

The Kitchen Garden.

The walled-in kitchen garden is on the outside in the form of a square. Pears are planted on three sides, Green Gages and Cherries on the west aspect; inside Peaches occupy the south wall Cherries the west, Plums the north, and Apricots the east, but they do not do well here. The trees are short-lived, and when bearing produce uncertain crops. It is not a Pear land, the soil—loam resting upon the gravel—this character running generally through the estate—is too light. Winter Nelis is very fine in flavour, but small; Brown Beurré does remarkably well. The kitchen garden contains an orchard-house some 45 feet by 9 feet. Figs are grown on the back wall, the front portion being used for Tomatos. Early Peas are sown here, and about April the Tomato plants are put out between the lines of Peas, they begin to fruit in July, and continue doing so until the autumn. At the time of our visit, the plants were still bearing remarkably good fruit. The favourite variety appears to be a large and handsome red fruit of the Stamfordian type.

Mr. Thomas Lockie, the gardener at Oakley Court, has filled this position for fifteen years, and, as an exhibitor at the Royal Horticultural Society's shows at South Kensington, and at the exhibitions at Reading and elsewhere, he has been very successful. He was formerly with the late Mr. Henry Bailey, at Nuneham Park. *R. D.*

ORCHID NOTES AND GLEANINGS.

LÆLIA ANCEPS BARKERI.

This very handsome winter-flowering Orchid is just now in very fine form at Gunnersbury Park, a large plant, having several flower-stems surmounted with fine blossoms characterised by the rich purple on the lip. It is remarkably showy. *D.*

Calanthe vestita nivalis.

Is it usual for this variety to produce branching spikes of bloom when well cultivated, or is this a feature of rare occurrence? Will any of the readers of the *Gardeners' Chronicle* who grow this Calanthe kindly say if it has occurred with them? It has been grown here for some years, but we have never succeeded in obtaining one till this year, and now there are two. The pseudobulbs are very fine, and the foliage during the growing season was remarkable for its width and stoutness of texture. In case a doubt should arise respecting the variety I will describe it. The pseudobulbs are, under what I may term ordinary cultivation, rather longer and more tapering than those of C. vestita, but otherwise about the same size as those of that variety; but when well grown they assume the shape of the Veitchii varieties, though the pseudobulbs are not quite so long, and are larger at the base, and constricted like them. The flowers are pure white, and set thickly—generally three in a whorl, on a very strong and long spike. It is about a month later in blooming than C. vestita or C. Veitchii, and requires a little more heat than those varieties. At the time of potting last springo a fine bulb was put singly into a 9½-inch pot. Tw new growths appeared in due time, one of which took the lead and became the strongest bulb, and has now

two spikes of bloom rising from it, one of which has thrown out a branch at a height of about 15 inches above the pot. The branch itself is in bloom, and appears to have twenty or more buds yet to open while the main spike has over fifty blooms and buds on it. The other spike from the same bulb is very strong and well flowered. The second bulb has one good spike also. Everybody who has a plant-stove should grow some Calanthes of this section for winter flowering, for they are the prettiest and most graceful of plants. We have spikes of Calanthes which expanded their first flowers in the second week in October, and which from all appearance will keep on flowering till the end of this present month, if not later. They are easy to cultivate in pits, or houses where a stove temperature is kept up, and where a quiet corner can be devoted to them near the glass during their growing season. *N. Blandford.*

CALANTHE CURCULIGOIDES.

In the Kew Orchid collection this species is now in flower. It has large evergreen plaited leaves and a scape about a foot in length bearing a crowded spike of orange-yellow flowers, which are three-quarters of an inch long. In the last edition of Williams' *Orchid Growers' Manual*, the authors state that they have not for a long time seen this extremely rare and beautiful species in flower. It is a native of Malacca, Penang, and Singapore, and was figured some years ago in the *Botanical Magazine*, t. 6104. *G. Nicholson.*

CATASETUM MACROCARPUM.

This is a fine Tropical American species, with large flowers densely spotted with purplish-brown. A good specimen is now in flower in the Orchid collection at Kew. Under the name of C. tridentatum it is figured in the *Botanical Magazine*, t. 3329. The species is especially interesting as having been one studied by Darwin, who figures and explains its structure in his classical work, *The Fertilisation of Orchids*. It appears to be practically a male Orchid, as Sir R. Schomburgk states that, although he had seen hundreds of plants in Essequibo, he had never found one in fruit. *G. Nicholson.*

CLERODENDRON FALLAX.

THIS plant is well suited for the decoration of the stove and conservatory, and when grown in 6 or 7-inch pots will make a fine subject for vases to stand in the dwelling-house. The plant can be had in flower from June till October, if kept in succession and sown at different times. The foliage is of a beautiful light green, and the elegant scarlet flowers, which form a corymb at the top of the stem, and just above the leaves, will last many weeks under ordinary care. The plant is easily flowered in small pots, and, moreover, makes a magnificent plant when grown of a large size for the show tent—a purpose for which it was once much grown, and, amongst others, by Mrs. Lawrence and Mr, Cole.

This plant will grow well in a temperature of 60° to 65° till it comes into bloom, when it should be removed into the conservatory or cool greenhouse. After the plants have done flowering they should be rested by being kept somewhat dry in a cooler house till January or February, when they should be shaken and repotted into suitable size pots, according to their strength. Well drain the pots and put a little moss over the crocks to keep the soil out of the drainage, and use a compost of good peat and good turfy loam and river sand, well mixed—the first-named forming one-half of the mixture. Before potting the plants should be pruned back to three or four eyes, and placed in a temperature of 60° to 70°, and if plunged in bottom-heat they will break better and quicker. It is essential that the plants be grown near the glass, to keep them dwarfed and stocky; watering should be done carefully, and syringing only on fine days. This plant is easily propagated from seed, from eyes, and from cuttings of the ripe wood, or from cuttings taken from half-ripened shoots. They strike freely if put into a mixture of half peat and half sand; the soil should be pressed firmly round the cuttings, and carefully watered, then put into a cutting frame and kept close to the glass. The cuttings can be put singly into a 60-size pot; or seven or eight cuttings put into a well drained pan, and when struck and well rooted, potted on, lightly watered, and again placed in heat. As soon as the plants are well rooted, they can have more air admitted, and eventually be stood in a cool-house. For small plants I like to grow from seeds, which I sow early in January and February each year. I sow the seed in pans and place them in bottom-heat, and as soon as they are up they get potted in 60's, and treated as recommended above for cutting: these seedlings flower about June, and last till October. *W. Smythe, The Gardens, Basing Park, Alton.*

SPRAY-PUMPS.

FOR several years past I have advocated the necessity of gardeners and orchardists adopting some better means of spraying trees for insecticide or fungicide

FIG. 25.—THE CYCLONE NOZZLE: AQUAPULT PUMP, TO WHICH THE HOSE FOR NOZZLE MAY BE FITTED.

purposes than that afforded by the ordinary rose nozzle as attached to garden syringes and engines.

My experience in endeavouring to combat the round Orange scale (Aspidiotus aurantii) in my garden has taught me that for using solutions for this end a rose nozzle is not only extremely wasteful, but absolutely useless.

The ingenuity of our American cousins has conferred a boon on all fruit growers by the invention of the Cyclone Nozzle, for an account of which I am indebted to Mr. Hubbard's *Report on Insects Affecting the Orange*, kindly forwarded by the United States Department of Agriculture.

The article describing it is as follows:—

THE APPLICATION OF INSECTICIDES.

"*Fineness and Force of Spray.*—In dealing with an enemy so thoroughly protected as are many of the bark-lice, liquid insecticides should be applied in as fine a spray as possible, or at least in moderately fine spray, driven with considerable force, in order to increase to the utmost their penetrating power. The aim should also be to reach and thoroughly wet every portion of an infested tree, so that no individual scale-insect shall escape the action of the liquid. This result is not attainable by the old method of sending a jet from a distance into the tops of the trees. An ordinary garden syringe is practically useless. There is needed a force-pump and a nozzle giving a finely atomised spray. This nozzle should be attached to a sufficient length of flexible hose to allow it to be introduced into the top of the tree. The orifice of the nozzle should be directed at a right angle to the hose, and not in line with it. The jet of spray may thus by a turn of the wrist be directed upward or downward, and brought into contact with all parts of the foliage and branches, from beneath as well as from the upper side.

"*The Cyclone Nozzle* (fig. 27: 1, profile; 2, plan; 3, section).—A nozzle which answers the above conditions, and is easily attached to any force-pump by means of a rubber tube, is described in the report of the Entomologist ("Report of the Commissioner of Agriculture for 1881—82," p, 162). It consists of a shallow, circular, metal chamber, soldered to short piece of metal tubing as an inlet. The inlet passage penetrates the wall of the chamber tangentially, admitting the fluid eccentrically, and causing it to rotate rapidly in the chamber. The outlet consists of a very small hole drilled in the exact centre of one face of the chamber. The orifice should not be larger than will admit the shaft of an ordinary pin. Through this outlet the fluid is driven perpendicularly to the plane of rotation in the chamber. Its whirling motion disperses it broadly from the orifice, and produces a very fine spray, which may be converted into a cloud of mist by increasing the pressure in the pump. The perforated face of the nozzle-chamber is removable for convenience in clearing the orifice when it clogs. The diameter of the chamber inside need not exceed one-half inch, and its depth one-quarter inch. A nozzle of these dimensions attached to the aquapult pump (fig. 25) covers 1½ square yard of surface at a distance of 4 or 5 feet from the orifice. The amount of dispersion depends somewhat upon the thickness of the perforated face chamber. The diameter of the cone of spray may be increased by countersinking the exit-hole, and making its edges thin.

"Three-eighths-inch gum tubing is sufficiently large to supply one or a gang of several nozzles. The tubing must be strengthened with one ply of cloth.

"In use, the end of the hose is supported by being fastened to a light rod of wood, which forms a handle by means of which the nozzle may be applied to all parts of the tree. For full-sized trees a rod long enough to reach nearly to their tops must be used. For this purpose a convenient device may be made by passing the small rubber hose through a hollow Bamboo rod of the required length. A three-sixteenths brass tube inserted in a Bamboo rod has also been used."

Having had several of these nozzles made, I recommend the following modifications as advisable for reasons which either suggested themselves while experimenting with them, or proposed by the maker for cheapening their manufacture. The part *a* to consist of a solid brass rod about 1¾ inch long and three-eighths of an inch diameter. Through this is to be bored a hole, so that the inlet *k* is about one-tenth of an inch diameter, so as to be tangential to the inside edge of the chamber when brazed thereon. The diameter of the inside of the chamber should not be more than fifteen-thirty-seconds of an inch, and its depth eleven-thirty-seconds of an inch, while its walls should be at least one-eighth of an inch thick, so as to allow an indiarubber washer to rest on the top and prevent the screw cap from leaking. The outlet *s* to be about one-twentieth inch diameter, with the outer part bevelled off much more than shown in the figure, so as to enclose nearly an angle of 90°. The screw of cap *c* need not be carried down to the bottom, as shown in the engraving, a depth of one-fifth inch, with an indiarubber washer, is sufficient to keep the top firm and free from leakage.

For small gardens a single nozzle, attached to some three-eighths of an inch gas-tubing to a small force-pump, will be all that is necessary for cleaning Rose trees and small plants from aphis, or fruit trees from aphis or scale.

In larger gardens a "duplex" nozzle, shown in fig. 26 (1), is advisable, in order to save time. This consists of two nozzles attached by a Y-joint to a hose, and kept in their places by means of two pieces of brass, in each of which are two half-grooves for the nozzles to fit in, and which are held together by a screw, as shown. This allows the nozzles to be used at any angle the user likes.

For orchards I would recommend a triplet, consisting of three nozzles, two of them arranged as in the duplex, and a third beneath and between and about an inch in advance, and set at such an angle that the spray from it should form, with the others, a wide cone (see fig. 26, 2). The triplet I have had made answers admirably, but, being experimental, was much more expensive than if a manufacturer were to make a number from a single pattern. The figure shows the general arrangement, but I will leave it to any enterprising brass-worker to make them as he thinks best.

Fig. 25 gives a representation of the American catapult pump. My experiments have been made with an "Aquarius," which is somewhat different in arrangement, the pump standing outside the bucket, and having a short suction-pipe into it. I find, with ordinary care, three-eighths-inch rubber hose sufficiently strong to stand the force-pump without being strengthened with one ply of cloth, as recommended by Mr. Hubbard. The cloth might, however, tend to

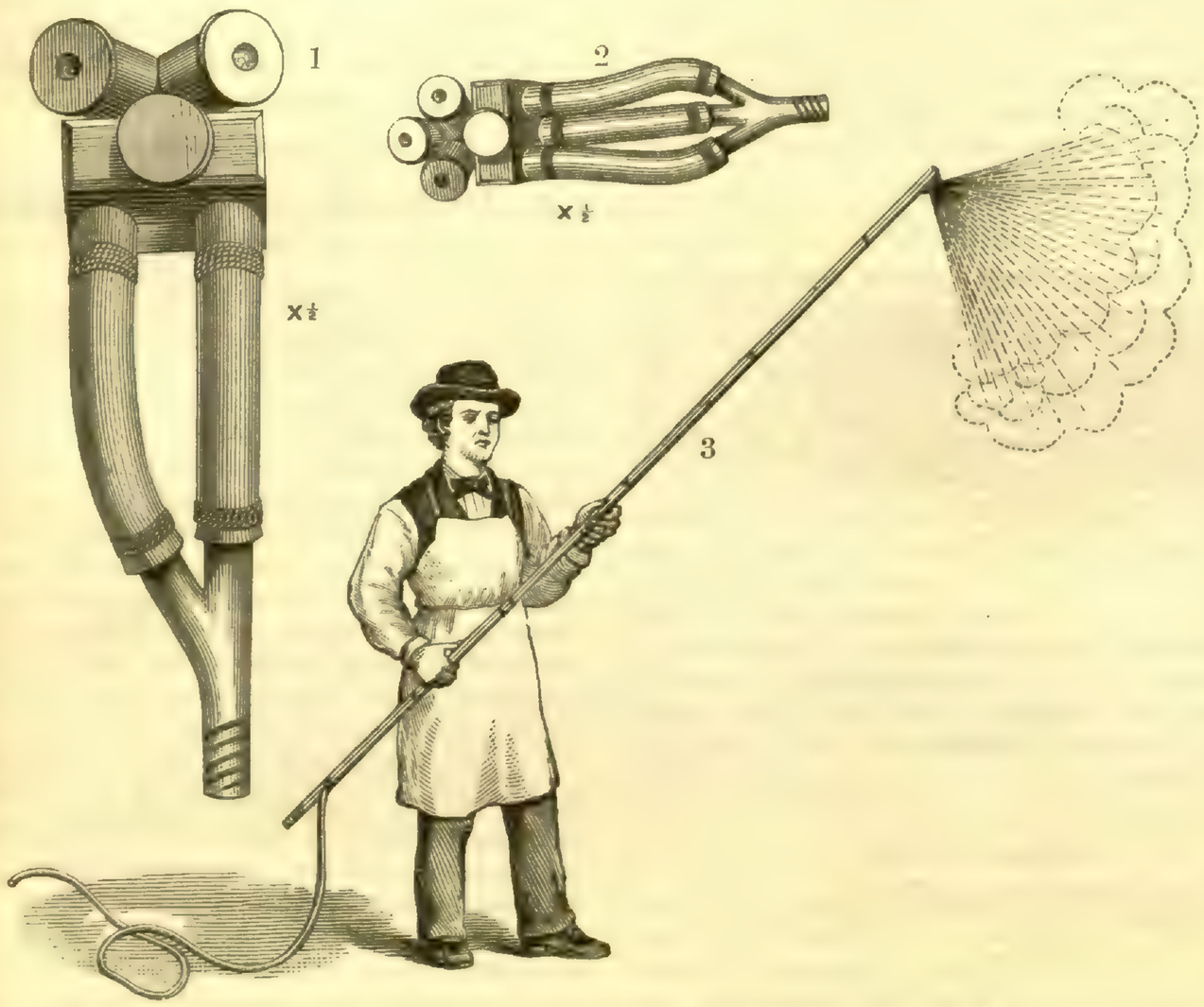

FIG. 26.—THE CYCLONE NOZZLE: 1, DUPLEX NOZZLE; 2, TRIPLET NOZZLE; 3, TRIPLET CYCLONE NOZZLE IN USE.

preserve the hose, although, as its price is but 4½*d.* per foot, it does not form a very serious item in the total cost. A force-pump can be obtained for about £2. A triplet cyclone nozzle should not cost more than 12*s.* or 15*s.*, which, with the hose, would bring the total cost to about £3.

In using this apparatus the orchardist is cautioned to have the solutions for spraying carefully strained through linen, muslin, or cheese-cloth, or other similar material, as owing to the very small exit-hole in the nozzle it is very easily choked. For the same reason the suction hose of the pump should have its entrance guarded with fine wire gauze. *Frazer S. Crawford, in "Report on the Fusicladiums, &c., attacking the Apple and Pear Trees in South Australia."*

KENNEDYA MARRYATÆ.—Undoubtedly one of the finest greenhouse winter-flowering climbers is this fine Australian plant, with its scarlet Pea-shaped flowers and pinnately trifoliolate leaves. A large specimen in the conservatory at Kew climbs up the rafters and forms a beautiful screen across the house with its pendent branches laden with flowers.

THE ALPINE GARDEN.

OROBANCHES AND PEDICULARIS.

BRITISH Orchids are not the only plants that puzzle the ordinary cultivator; there is a whole host of plants which the British botanist frequently meets with by copses, &c., in his rambles, but which are rarely if ever seen within the precincts of the garden—not because they lack beauty—many of them being as handsome as our exotics—but simply because they require more than ordinary care. There is not the least doubt that if we only knew how, we could grow them as easily as we grow our alpines. Among British plants are Bartsias, Euphrasias, Rhinanthus, Melampyrum, Pedicularis, and Orobanches; the latter genus, which contains many beautiful species natives of Britain, such as the Clover or lesser Broom-rape, the Ivy Broom-rape, ramosa, which grows on Hemp, rubra, and many others, all beautiful and capable of being managed with a little care. The Pedicularis, only two of which are natives, are to be met with in quantities in Southern Europe, Himalaya, and also in North America, are all very beautiful flowers; but so far as I know few if any attempts have been made to establish them in our gardens. That they will require something more than ordinary care is evident from what travellers tell us, and many eminent botanists are of opinion that these plants are parasitic on the roots of other plants just as we know Orobanches are. Starting myself with this basis, I had the pleasure, in my own small way, of rearing and flowering a species of Pedicularis on the top of Ivy roots; some I planted as a test where no roots could get at them, failed miserably. Seeds of these plants may be easily procured from the Continent, and experiments, as indicated above might be tried in various quarters. *D.*

GEUM MONTANUM.

I was much interested in an article on this plant that appeared in your columns December 11, p. 748, by your excellent correspondent, M. H. Correvon, of Geneva, in which the following occurs:—"G. pyrenaicum, if not identical with the above, would seem to be a closely allied species." As we regard the two species in gardens in this country they are perfectly distinct—so distinct, indeed, that in Nyman's *Conspectus Europæus* they are put under different genera, viz., Sieversia and Geum, the former containing those with straight styles, the latter containing those with hooked or jointed styles. In the *Genera Plantarum*, however, the genus Sieversia has been sunk under Geum, and for practical purposes it is perhaps better so. That these two plants hybridise I have not the slightest doubt, and the same opinion is held by many of the first hardy plant growers in this country; and any one taking the pains to cultivate a few Geums in a bed by themselves will soon find this out. G. tirolense is a cross between supernivale and montanum; it has the jointed styles, which it no doubt takes from nivale, another good plant, which is said to be a cross between pyrenaicum and montanum, but the former parentage of which I have altogether failed to see. It was largely distributed a few years ago by Miss Jekyll, of Munstead, and whatever its origin it is a very desirable rock plant, and perhaps the handsomest and most floriferous of this group. The first trace we have of it is its having been cultivated in the

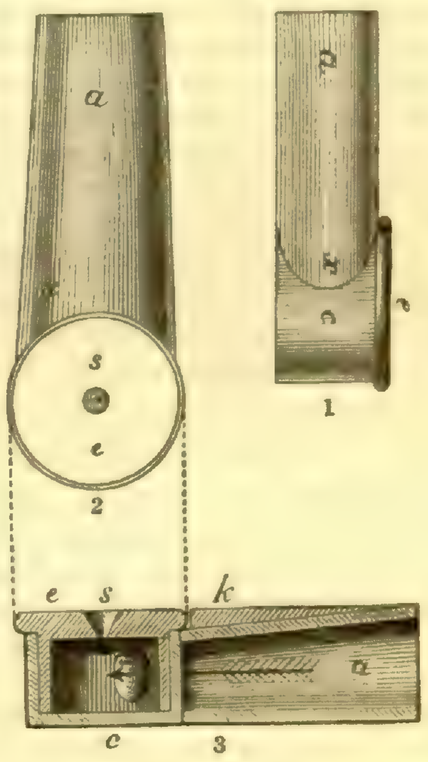

FIG. 27.—THE CYCLONE NOZZLE: 1, PROFILE; 2, PLAN; 3, SECTION.

Liverpool Botanic Garden over twenty years ago, and from that time until redistributed it seems to have been little known in gardens. The leaves are arranged exactly as in G. montanum, but they are more robust, indeed it seems to differ from the typical G. montanum only in its being taller, with branching stems, with four to six larger flowers; it has the straight styles of the typical plant, and undoubtedly belongs to the section Sieversia, and not to the true Geums. I may add that G. coccineum has been quite superseded by a selected seedling raised in Mr. Paul's, Broxbourne, and called var. grandiflorum; it is denser in colouring, and with single flowers almost as large again as the plant ordinarily cultivated in gardens; the habit is otherwise much the same. G. parviflorum, a little New Zealand species, as dwarf as the typical montanum, with pretty white flowers, is also a very desirable rock plant. *D.*

HELLEBORUS NIGER MAXIMUS.

Mr. Engleheart sent a note to the *Garden* recently which I venture to transcribe for your columns, as it furnishes us with information as to the native habitat of this fine Hellebore. He says (p. 22) he finds in his note-book the following description of a flower which he noticed in North Italy in March last:—"Between Menaggio and Porlezza fine strong growing Hellebore; flower large and cupped, pure white with slight flush

of buff-pink. Noticeable for its pink stigmata and tufted yellow anthers." I think this description accords with H. niger maximus or altifolius. In 1883 I took considerable pains to trace out the origin of this Hellebore, which has become so widely established in Scotland and Devonshire; and your readers will find very full information in your volume for 1883—October to December, and there is a very fine illustration given at p. 692 of the same volume (lately republished by Mr. Ware in his *Autumn Catalogue of Hellebores*). The native habitat of this plant I found to be Carniola and the Southern Tyrol (see *Gardeners' Chronicle*, vol. xx., p. 527), and at p. 763 I gave a list of examples from the Kew herbarium, which gave the habitat also in the Tyrolese valleys. Mr. Engleheart's observation (if my opinion be correct) extends the area into North Italy, which is extremely probable. I have obtained plants of this fine Hellebore from Carniola, and they agree exactly with our garden plants of H. n. maximus. *William Brockbank, Brockhurst, Didsbury, Jan. 8.*

THE PEACH AND NECTARINE AS WALL TREES.

(*Concluded from p. 79.*)

Planting the Trees.—In planting the trees on a border prepared in this way, it may be possible to obtain about half a barrow-load of good decayed loam to place amongst the roots of each tree at the time of planting. Obtain good trained trees in the first place—it does not require a large number for a 10-feet wall. They should be 20 feet apart, and with good management the entire surface of the wall may be covered with bearing wood in four years, that is, if good young trees are planted, each of them with seven young growths; and plenty of such trees are to be found in any good nursery.

Sorts to Plant.

The trees I would plant, if space could be found for six Peaches and six Nectarines would be:—Alexander, a very early American kind; Hale's Early, a splendid early American variety, large in size and well coloured; Early Grosse Mignonne, an excellent early variety; Bellegarde, Grosse Mignonne, and Albatross, in preference to Barrington. The last-named is a shy bearer even under glass. Six Nectarines:—Lord Napier, Stanwick Elruge, Pineapple, Violette Hâtive, Prince of Wales, and Victoria. After planting the trees, which ought to be done in December or during mild weather in January, place round the bole of the tree and as far as the roots extend a layer of dry decayed manure. It is best not to nail the young trees to the wall until the soil has had time to settle down. I have seen wall trees partly torn out of the ground owing to their being nailed to the wall before the soil of which the border was composed had had time to settle down.

Pruning the Young Trees.

The trees may be pruned in February by cutting back the shoots to two-thirds of their length, and in pruning always be careful to cut to a triple bud. The centre bud of the three will be a leaf-bud; the other two are usually blossom-buds. When the shoots are nailed into the wall the two bottom ones are placed in nearly a horizontal position, the centre one in a vertical position, the other two on each side at uniform distances from each other, and from the centre and bottom branches. The fan system of training is what I practise and recommend. The shoots ought to be trained at regular distances apart. The first year they will probably not be too vigorous; but next season all the vigorous growths will require to have the points pinched out with the fingers when they have grown a foot or so. Three or four weaker growths will be formed, which will make sound growths, better furnished with flower-buds than the more gross single growth would have been. The tendency of all well-grown Peach and Nectarine trees is to produce too much rather than too little young wood, and it is very undesirable that this young wood should be laid in during the summer months to be cut out again in the autumn. Lay in just as much young wood as is likely to be required and no more, as the more space it has to develope its leaves so much the better will it be ripened. The summer treatment consists in daily syringing the trees to keep the leaves free from red-spider and aphis. It may be necessary to syringe with soft-soapy water to which has been added some flowers of sulphur, to keep the leaves free from mildew and aphis. *J. Douglas.*

THE FLOWER GARDEN.

PREPARING THE SUMMER BEDS.

Such as are intended for the reception of Cannas, Ricinus, and other noble-foliaged plants, should receive special preparation. It may be necessary to remove the whole of the soil, and place 6 or 9 inches of brickbats or other rough material to secure perfect drainage, as without a liberal supply of water in the growing season it is useless to attempt growing such; and, unless it finds a ready exit from the soil, it lowers the temperature. The soil must also be in good heart to produce the leaf development which gives nobility to their character.

Seeds.

The earliest opportunity should now be taken to order the necessary flower seeds from the seed shops, as the choicest kinds are sometimes cleared out early, and then disappointment is the result. A good packet of each of the varieties of East Lothian Stocks should be got at once and sown in boxes. The Wallflower-leaved, white and crimson varieties are exceedingly fine. Place the boxes in a genial heat of about from 50° to 55°; be careful to remove close to the glass as soon as they germinate, and water (carefully) sparingly. As soon as fit to handle, prick off into boxes, and keep them growing on. These will keep up the succession, after those wintered in pots are over. Another batch should be sown in the middle of March, which will flower quite into the winter. We have a quantity in flower in pots now in a temperature of 50°.

General Work.

Additional protection may be necessary for Carnations, Picotees, and Pansies, in situations exposed to frost winds, but not of such a nature as to exclude light and air. The stock of Dahlia and Salvia patens should be examined to see that they are safe. The latter is rarely seen now as a bedder; the plant when associated with Calceolaria amplexicaulis, makes a most effective arrangement in the flower garden. There is no blue flowering plant I know that can exceed it in beauty.

Where a plan of the flower beds was decided upon in autumn, the stock of store plants should be looked over to see if there is sufficient of each sort to carry out the arrangement. If any are short the stock in store, should be placed in a little extra warmth, to induce growth, when the propagation of such varieties should be undertaken as speedily as possible.

One is often struck with the quantity of dead unsightly Box edgings seen in gardens, and the amount of trouble it requires to keep such edgings straight, as every severe frost lifts them out of their position, and unless they are gone over immediately it thaws, and pressed down, they require to be frequently relaid. Where Box does not succeed, and other edging plants are objected to, the small-leaved Ivies are worthy of trial. They make charming margins, and require very little attention after they are first planted. In dry seasons they are liable to the attacks of red-spider. Make the edge level, and then set a line on each side of the space allotted for planting. It is not necessary that the plants be rooted. Stick them firmly in the ground, and secure the remainder of the shoot along the side of the lines with pegs. If the margin is to be 4 inches wide, two rows will be enough; if more, increase the number of lines. When established, all that will be necessary in the way of keeping will be the clipping of the sides straight once or twice a year, and nipping off any growth above the line. *William M. Baillie. Luton Hoo.*

A HYBRID POTATO.

A short time since we gave an illustration of a striped Calanthe, to show how the mixed elements of a hybrid plant sometimes tend to separate one from the other. Thanks to Messrs. Carter & Co., who have been performing numerous experiments in cross-breeding Potatos, we are enabled to figure another very striking example of this dissociation of previously mixed elements (fig. 28). We are informed that Messrs. Carter crossed Myatt's Ashleaf and White Elephant Potatos, and that among the produce of the seedlings tubers similar to those now figured were produced, in which one-half the tuber presented the characters of the one parent, while the other showed the peculiarities of the other. The difference in the two halves of the tuber was even more striking in the tubers themselves than is seen in our illustration. We shall look with great interest to the future development of these tubers.

A DECADE OF NEW ADIANTUMS.

(*Continued from p. 42.*)

Adiantum festum, n. hyb.—Fronds glabrous, evergreen, decompound, drooping, triangular acuminate, the basal pinnæ elongate; pinnæ deltoid, spreading; pinnules of ultimate segments small, crowded, cuneate or rhomboid-cuneate, larger towards their extremities, the terminal ones symmetrically or unequally wedge-shaped, bipartite, the divisions deeply lobate and mostly sterile in one specimen, the rest lobate on their anterior edge and freely soriferous; veins dichotomously flabellate, venules free; sori roundish-reniform, placed in a sinus of the lobe, and covered by smooth entire indusia; stipes and rachides of a glossy purplish ebeneous black.

This was raised from the same sowing of mixed spores (cuneatum × amabile) as A. Daddsii, and may be regarded as an A. cuneatum which has acquired increased size, and a more spreading development together with enlarged terminal pinnules through the influence of A. amabile. It will make a good decorative Fern, and its peculiar features will no doubt attract to it certain admirers, though it must be confessed the number of "handsome decorative Ferns" we now possess makes selection no easy task. The plant now under notice has an ebeneous stipes of some 8 or 9 inches long, and a triangular quadripinnate lamina of at least a foot in length, and upwards of a foot in breadth at the base. It has a certain first-sight resemblance to an enlarged A. cuneatum—that is to say enlarged in the dimensions of the frond not in the size of its parts, except in the case of the enlarged terminal pinnules, which are very conspicuous, and at once show it to be distinct, as also does the ramification of the central part of the frond. In comparing it with an enlarged A. cuneatum, we are of course well aware that that species may by high cultivation be grown to a considerably larger size than that here recorded for this variety, but we are in this place referring to plants of ordinary not of special culture.

A. Oweni, n. hyb.—Fronds triangular-ovate, evergreen, glabrous, erect, quadripinnate, pinnæ ascending, triangular, stipitate, the lower ones on stalks about an inch in length, the upper ones gradually shorter; basal pinnules ovate; pinnulets very small, shortly stipitate, slightly lobate, the terminal ones cuneate, the others for the most part rhomboid, with the basal margin entire and falcately curved, a few of the basal ones roundish; veins dichotomously forked, the venules free; sori numerous, from two to four on a pinnule, placed in a sinus of the marginal lobes, roundish-reniform, covered by

indusia of similar form; stipes stoutish, and as well as the rachides glossy and ebeneous.

This is a hybrid Fern possessing much elegance of character, raised by Mr. Owen, of Henley-on-Thames, and exhibited by him at South Kensington in the autumn of 1881. The supposed parents were A. amabile and A. cuneatum—a happy union, from which a lovely progeny might almost certainly be predicted. In this case the taller and more compound A. amabile seems to have most clearly transmitted its aspiring characteristics, although at the time it was exhibited, and worthily gained a First-class Certificate, many of the outer and earlier fronds were much and elegantly incised, as occurs in the less matured states of that plant. The same cross has led to a different result in A. Daddsii, where the broader outline of A. cuneatum has been exaggerated into a spreading compound frond of rare beauty and great distinctness of aspect. Our present subject comes near to A. Waltoni, and at first we were inclined to think they were too nearly related to be separated; but a closer comparison shows them to be sufficiently different though belonging to the same type of hybrids, and probably having the same parentage, A. Waltoni also being a supposed seedling of A. amabile. These two hybrids agree pretty closely in the outline and ramification of their fronds, but the pinnulets or secondary pinnules are smaller, and more inclined to take the rhomboid outline in A. Oweni, while in A. Waltoni they more frequently have a long wedge-shaped base. Our specimen of A. Oweni measures about 1½ foot in the length of the lamina, with a breadth of about 1 foot, the stout stipes being about 8 inches long, and somewhat more firm and rigid in character than its Burnley ally. The pinnulets, moreover, are about two lines in length, and very few reach to the length of three lines. Hence the fronds appear to be, as they really are, made up of very small pinnules, which removes from it all semblance of coarseness in its composition.

A. Waltoni, n. hyb.—Fronds broadly ovate, erect, glabrous, quadripinnate, evergreen; pinnæ ascending, ovate, the lower on long stalks, the upper ones with the pinnules next the rachis elongated and compound; pinnulets pedicellate, more or less cuneiform, often somewhat oblique, a few of the more prominent ones near the apices of the pinnæ rhomboid, with sori on the shallow lobes of the anterior and apical margins; veins dichotomously forked, the venules free; sori abundant, from four to six on a pinnule, placed in a sinus of the marginal lobes, roundish-reniform, covered by indusia of similar form; stipes and rachides glossy ebeneous.

In this Fern we have another of the acquisitions of the hybridist, although in this case the hybridism, if real, has been clearly accidental. The plant was raised at the Edgend Nursery, Brierfield, near Burnley, from a sowing of Adiantum amabile made about two years since, and it is now 3 feet in diameter. It is not A. amabile, but what has proved to be the disturbing agent can only be a matter of speculation; probably it is A. cuneatum, which seems to lend itself freely to this intercrossing movement, the different results obtained from that of many other crossings with A. cuneatum being perhaps attributable to the prepotent influence of A. amabile, which was the species sown. It is a very distinct and elegant Fern, with the pinnulets three to five lines long, and is quite worthy of a place in our choice collections. The specimens before us have a lamina nearly 1 foot 6 inches high, and 1 foot broad, with a stipes of 9 inches, thus forming a frond large enough for all ordinary decorative uses.

The name we have adopted may well commemorate both the late Mr. H. Walton, in whose nursery it was raised, and Mr. Edward H. Walton, by whom the specimens we have examined were forwarded to London. A very similar Fern was sent to us about ten years since from the gardens at Aske, Richmond, Yorkshire, which was reported to be a seedling and to form a grand specimen plant, but we heard nothing of it afterwards. *T. Moore.*

(To be continued.)

THE KITCHEN GARDEN.

FRENCH BEANS.

These will require all the light possible at this season of the year, and should therefore be grown in pots or boxes near the glass, in light airy structures, with plenty of heat at command; a night temperature of from 65° to 70°, with a rise of 10° or 20° by day, according to circumstances, must be maintained, admitting air (but avoiding cold draughts) on all favourable occasions. For moisture, the paths, walks, &c., should be repeatedly damped throughout the day, and whenever the atmosphere of the house becomes dry and arid; the plants also should receive (excepting when in flower) liberal applications of tepid water with the syringe. To maintain a regular supply sowings should be made fortnightly in sufficient quantities to meet the demand, according to the space and accommodation devoted to their culture. They can either be sown in the pots they are to be fruited in or in shallow boxes, in leaf-soil, and afterwards, when bursting into leaf, assorted and transplanted into their permanent quarters. In the former case it is best to allow space for a top-dressing to be added when the plants have fully developed their first rough leaves, and are ready to stake and support. For soil, a light fibrous loam, with leaf-soil and dung from an old Mushroom-bed added, will be found a suitable one. Water should

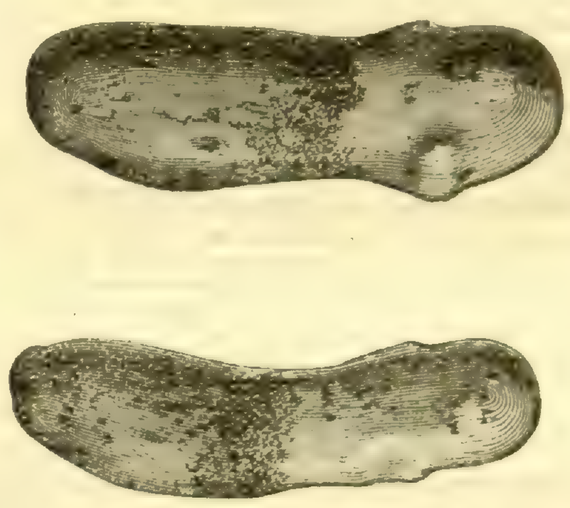

FIG. 28.—CROSS-BRED POTATOS RAISED BY MESSRS. J. CARTER & CO. (SEE P. 110.)

be given sparingly at first, but afterwards, and particularly when the plants are in bearing, copious supplies, diluted alternately with liquid manure, will be required frequently, and, in the latter stages, the plants should never be allowed to suffer from drought. If suitable pits are at command much better results may be obtained, by growing them planted out on beds; but in this case it is essential that bottom-heat be at command, and the soil resting on a basis of fermenting material, supplemented by hot-water pipes. Among the best varieties for early forcing, and also for first crops in the open, are Osborn's Forcing, Sion House, and Ne Plus Ultra; the latter variety, although a trifle deficient in colour, is a first-rate cropper, the pods tender and fleshy, and it also has the advantage of remaining some time in a usable condition.

CUCUMBERS.

If seeds of these were sown as advised in November, the young plants should now be in 6-inch pots, and ready for planting out, to make a succession to those in bearing through the winter. A house or pit well heated in every respect will be necessary for their well doing; the bottom-heat pipes should be covered with bricks and rubble in such a manner as to allow the free passage of the warm air from them to ascend and penetrate the soil above. Having filled these in to the required depth a layer of stable litter should follow, and on this one of turf, laid grass-side down. On this surface are the mounds or hillocks for planting to be formed, 3 feet asunder, and containing sufficient soil only for the plants to establish themselves in, additional mould being added and with greater advantage as they make progress and require it. For soil use two-thirds good turfy loam and one of rough leaf-mould and well decayed stable-manure, adding thereto, if obtainable, a sprinkling of coarse river-sand and charcoal; after planting and until active growth has commenced very little air will be required, plenty of heat, light, and moisture being the most essential conditions conducive to a good start. Established plants that have been in bearing throughout the winter would be benefited and encouraged by having a portion of the old soil removed from amongst the roots and replenished with fresh compost.

GENERAL WORK

will depend in a great measure upon the state of the weather. During frost good opportunity, however, will be afforded for wheeling manure on to vacant plots, and also in preparing and mixing further supplies. All frames containing Lettuces, Cauliflowers, and the like, will require extra protection, and should be well covered with litter, bracken, or mats; similar precautions should also be taken with regard to these in the open, and additional protection given by the liberal addition of Spruce or Laurel branches. Make provision for continuing the supply of such roots as still remain in the ground, as Parsnips, Artichokes, Seakale, &c., by littering a portion of the ground with fresh stable litter; also in the way of Cabbage, Brussels Sprouts, and all green stuff, which should be culled carefully during the warmest part of the day, and placed in a situation favourable to their becoming gradually thawed and fit for use. *John Austen, Witley Court.*

THE MUSHROOM-HOUSE.

During cold nights and intervals of frost a little fire-heat will be necessary to maintain the temperature, which should not be allowed to go lower than 55°, nor higher than 65°; this must be accompanied by a corresponding amount of moisture, to be secured by damping the paths and walls, as well as the surface of the beds when they appear dry; and should be done either with the syringe or fine-rose water-pot, and with warm water. *John Austen, Witley Court, Worcestershire.*

FRUITS UNDER GLASS.

STRAWBERRIES.

The fruits on the forwardest plants of Vicomtesse Hericart de Thury, if treated as recommended in the Calendar for December 11, will now be swelling fast; and in order to secure fine fruit the plants should be liberally watered with tepid liquid manure until the fruits begin to colour, when clear water alone must be given. While the fruits are swelling the plants must have a night temperature of from 55° to 60°, according to circumstances, and 10° higher by day with fire-heat, running it up to 85° at closing time with sun-heat and plenty of atmospheric moisture. The plants should also be damped overhead with tepid water on bright mornings.

Successional Plants.—A dry, buoyant atmosphere and a temperature of 50° at night and 10° or 15° higher by sun-heat should be maintained during the flowering stage, and as a means of obtaining a good set of fruit the pollen should be distributed by passing a camel's-hair pencil over the flowers daily when dry. In thinning the fruits ten or twelve of the best (crown) berries of uniform size should be selected, so that they may all ripen together: all flower-spikes that show afterwards must be cut out. Fresh batches of plants should be introduced into heat every week or ten days, the drainage having first been seen to, the pots washed, and the plants top-dressed with a sifted compost of loam and horse-droppings in equal parts. This should be made moderately firm by the aid of a potting-stick, and a space of three-quarters of an inch below the rim of each pot should be left to hold water. *H. W. Ward, Longford Castle, Salisbury.*

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APPOINTMENTS FOR THE ENSUING WEEK.

SALES.

MONDAY,	JAN. 24	20,000 Liliums in great variety, from Japan, and many other Bulbs and Roots, at Stevens' Rooms.
TUESDAY,	JAN. 25	Orchids in Flower, at Protheroe & Morris' Rooms.
WEDNESDAY,	JAN. 26	Roses, Fruit Trees, Shrubs, Border Plants, Bulbs, &c., at Stevens' Rooms. 5000 Lilium auratum, Roses, Plants, &c., at Protheroe & Morris' Rooms.
THURSDAY,	JAN. 27	Imported and Established Orchids, from Messrs. Shuttleworth, Carder & Co., &c., at Stevens' Rooms.
FRIDAY,	JAN. 28	Orchids, including a large importation of Cattleya Lawrenceana, at Protheroe & Morris' Rooms.
SATURDAY,	JAN. 29	Roses, Fruit Trees, Shrubs, Border Plants, Bulbs, &c., at Stevens' Rooms.

The Gardeners' Royal Benevolent Institution.

HALF yearly meetings, balance-sheets, declarations of dividends, or calls, form no inconsiderable part of the business of the present time, and their results inspire a glow of satisfaction or provoke a groan of displeasure as the case may be. In the case of the "Gardeners' Benevolent," the annual meeting of which was held on Friday, January 14, the satisfaction felt was universal, although partially neutralised by the fact that the applications for the benefits which the Society confers were considerably more numerous than the Society had the means of dealing with.

The balance-sheet, a copy of which is appended, is as clear as it is satisfactory. Comparing it with last year's statement, we find that £1950 were paid in pensions instead of £1655, and that while the actual expenses of management are slightly higher than last year they are less in proportion. On the other side the receipts this year are £4076 10*s.* 7*d.* as against £2727 9*s.* 3*d.* in 1885—an increase of £1349. This large increase is accounted for by additions to the annual subscriptions, larger amounts received from collecting cards, interest on deposits, &c.; but the greatest increase has been in the amount received at the annual dinner. In 1885 the amount was, in round numbers, £771, while in 1886 it was no less than £1486. This is eminently satisfactory. The only excuse for trespassing on the generosity and public spirit of outsiders is that "they draw." Well, now, here is overwhelming proof that among our own body we can find men who will draw quite as well, and even better, than any outsider, however well disposed. Far be it from us to disparage or speak ungratefully of those who have helped us in the past. That is quite contrary to our wish. We only cite the successful chairmanship of Mr. SHERWOOD (HURST & SON) as an illustration of the special virtue of self-help. On this occasion not only have we not incurred obligation to outsiders, but we have, thanks to Mr. SHERWOOD, done better for ourselves than others have hitherto done for us. This is most encouraging. The balance-sheet, moreover, bears emphatic testimony to the management of the committee and their indefatigable Secretary, Mr. CUTLER, who for the forty-sixth time returned thanks for the compliment he had so well deserved. With such a balance-sheet the proceedings at the annual meeting were mainly of a formal character. Mr. HARRY VEITCH, the new Treasurer, presided, supported by a large number of friends of the Institution. The following new members of the committee were appointed in place of those going off by rotation, viz., Messrs. BOLTON, H. BALLANTYNE, RIDOUT, DOUGLAS, DENNING, and SEXBY. We mention their names to show that gardeners may have full assurance that their affairs are looked after by their own compeers and associates.

STATEMENT OF THE RECEIPTS AND PAYMENTS OF THE GARDENERS' ROYAL BENEVOLENT INSTITUTION FOR THE YEAR ENDING DECEMBER 31, 1886.

DR.	£ s. d.	£ s. d.	£ s. d.
To Balance, 1885	...	...	387 5 9
Annual subscriptions ...	...	1311 2 0	
Donations at and in consequence of annual dinner	...	1486 16 10	
		£2797 18 10	
Advertisements... ...	49 13 0		
Collecting cards ...	185 15 9		
		235 8 9	
		£3033 7 7	
Dividends on Stock ...	633 0 0		
Interest on deposits ...	22 17 3		
		655 17 3	
			3689 4 10
			£4076 10 7

Stock in £3 per cent. Consols, £21,100.

CR.	£ s. d.
By Pensions	1950 0 0
Secretary's salary	160 0 0
Rent of office	43 15 0
Furniture, fittings, &c.	26 14 6
Printing	130 0 0
Advertising	3 19 0
Stationery	21 12 7
Book of cheques	3 9 2
Expense of annual dinner	60 14 8
Postages, travelling expenses, and sundry petty expenses	96 1 10
	£2496 6 9
Amount placed on deposit...	1200 0 0
	£3696 6 9
Balances:—	
At Bankers' £368 12 5	
With Secretary 11 11 5	
	380 3 10
	£4076 10 7

Audited, January 10, 1887. { JOHN LEE. JOSEPH F. MESTON. J. WILLARD.

Owing to the circumstance that two pensioners had died since the voting lists were sent out, it was arranged, in accordance with precedent, that six new pensioners should be elected instead of four, as originally proposed, the two additional pensioners selected being those standing highest on the list, as regards votes, after the four originally chosen. Thus, while six were placed on the list as a matter of right in accordance with the rules — from previous subscriptions to the Institute, six others were elected by the votes of the members of the Society. Those placed on the list by right of previous subscription were: — JOHN BRICE, of Worthing, aged 67; JOHN CORNELIUS, of Tolgullow, Cornwall, aged 76; SARAH COX, of Ryde, Isle of Wight, aged 74; WILLIAM HARDMAN, of Ossett, Wakefield, aged 63; WILLIAM NEWMAN, of Collingtree, Northampton, aged 70, MICHAEL WADEY, of Streatham, aged 75. Those elected at the annual meeting were:—WILLIAM WADDS, ELIZABETH COLE, HARRIET CHAPMAN, SAMUEL PERKINS, RUTH HOOD, and DAVID DAY.

On this point we may add that the selection of candidates is made with great care by the committee, while as to the votes, the system of registration and counting is such that nothing like favouritism or undue partiality is possible. We mention these facts, of our own knowledge, to show that the Society is in a sound financial position, is well managed, and does excellent work. Unfortunately, the demands made upon it are still greater than it has the means of meeting; perhaps they will always be so, but whether or no, the fact we have mentioned makes it imperative upon us all to be constantly renewing our efforts to alleviate in some measure the miseries and sorrow by which we are surrounded.

THE QUEEN'S JUBILEE.—Horticulturists of all kinds and degrees will be as anxious as any other class of the community to mark their sense of appreciation and gratitude on this occasion. We know this from the letters we have received. One such, from one of our leading gardeners, we append for consideration:—"I think I may say without any presumption, that there are few if any gardeners in the three kingdoms but who would work in some small way to show their loyal and warm attachment to HER MAJESTY on this most auspicious occasion. May I suggest that a fund should be raised by British horticulturists (commercial houses included), the sums to range, say, from 6*d.* to 20*s.*, the interest of the proceeds (after purchasing some personal memento for HER MAJESTY's acceptance) to be devoted to annual prizes to be called the Queen's Jubilee Prizes, to be given at some of our great shows in the three kingdoms, on the same principle as the Veitch Memorial Prizes are now given. The management of the fund could be vested in a representative committee of horticulturists. Should this proposal meet with approval, may I further suggest that a committee be formed in every town and district to promote the work, and to collect and receive subscriptions which should result in a good round sum, if the subject is taken up with energy and promptitude? This modest proposal need not affect any larger scheme intended to be promoted and carried out in connection with the Royal Horticultural Society. *O. T.*" We have nothing to say against this proposal in itself, but we may suggest another more ambitious plan, but one which there is good reason to believe would be specially acceptable to HER MAJESTY, and that is a scheme by which the Royal Horticultural Society as a scientific society equal in practical importance, especially when our colonial interests are considered, to any society of the kind, should be placed on a more satisfactory position than that in which it now is. That may be done by either affiliating it in some way to the Imperial Institute, or by building proper offices, committee-rooms, libraries, and supplying other urgent requirements. As a body of great public utility it has as great a claim on the Government as other learned societies have, and the Government or the Commissioners of 1851 might therefore fairly be asked to provide a site and building, leaving it to the horticulturists to supply whatever else may be required. The attempt to supply amusement to people of fashion has been as unsuccessful as might have been anticipated. Such success can only be ephemeral and subject to fickle changes, but the solid work of the Society is both far-reaching and long-enduring. A successful endeavour to reinstate the old Society would be a most appropriate exertion of Jubilee energy.

THE ROCKERY AT MESSRS. CHEAL'S NURSERY.—The rockery, a view of which is given on our supplementary sheet, was established by Messrs. CHEAL at their nursery, Lowfields, Crawley, and affords a pretty illustration of the grouping system. It has not been long established, and is on a small scale at present. The design is simply a low undulating bank, with a small

ROCK GARDEN AT MESSRS. CHEAL'S NURSERY.

piece of water at the foot, and overlooked by a steeper bank on the opposite side, which projects like a promontory, and is capped by a summer house. The conception presents no very original feature, but, as carried out, it adds an element of great beauty and interest to the nursery—and in the time of flowers, when we saw it, it was radiant with bloom.

HONOURS TO HORTICULTURISTS.—Sometimes an uneasy feeling pervades the mind of British horticulturists that their services do not receive public recognition. On the Continent one's friends are decorated with this, that, and the other order at the hands of the Government, and the non-possession of such a trinket by a man of middle-age comes to be looked on as affording ground for suspicion as to his character, or, at any rate, shows that he does not stand well with the powers that be. But no doubt, a good deal of heartburning and uncharitableness may be occasioned by the system. The *Daily Telegraph* of Wednesday last afforded an illustration of this; it occupied a quarter of a column by detailing *more suo* how a market gardener at Montreuil was fined 30 francs for pulling down an official proclamation in which the names of certain gardeners who had obtained the green ribbon of the order of the "Mérite Agricole" were duly announced. The gardener who dared to destroy the official proclamation did so because his name was not therein, but did not every one know that his Melons were superior to any one else's? We are afraid the Melon grower was very angry, for he is alleged to have publicly stated that his want of success was due to spite on the part of the Government, as he, the Melon grower, did not vote for their policy! Rather than have that sort of thing in this country, we would be content to go on as we are. In any case, an honour conferred by the State (except of course for some special object) is childish and inappropriate. An honour to be valued must be bestowed by one's fellows and compeers, who alone are capable of judging whether our Melons are of superior quality, and, if so, how much of their excellence is due to our own personal merit.

"BIRDS OF HEREFORDSHIRE."—The widow of the late Dr. BULL, of Hereford, so well known as the Editor of the *Herefordshire Pomona*, is engaged in editing her husband's notes on the birds of Herefordshire for the Woolhope Club. Dr. BULL was engaged on this work at the time of his death. Subscribers (of 5*s*. 6*d*.) should send their names to Messrs. JAKEMAN & CARVER, High Town, Hereford.

MANCHESTER HORTICULTURAL IMPROVEMENT SOCIETY.—The fortnightly meeting of this Society was held on Thursday, January 13, in the Memorial Hall, Albert Square, Mr. BRUCE FINDLAY, the President, in the chair. After a few remarks by Mr. FINDLAY on the importance of the crop of Apples and Pears to this country, Mr. J. W. PETCH read a paper dealing with four kinds of hardy fruit, namely, the Apple, Pear, Plum, and Cherry.

PRIMULA SINENSIS FROM SWANLEY.—Some very large blooms of Primulas have been sent us by Messrs. CANNELL & SONS, which are rather remarkable for their scalloped and fringed edges. The colours are of various shades of pink, carmine, crimson, and white. One of the last named—Cannell's White Perfection—is a flower of more than ordinary merit. The Primulas from this nursery which we observed at the Royal Aquarium, Westminster, on the occasion of the recent Chrysanthemum show, are very abundant bloomers, with pyramids of flowers rising clear of the foliage. It may be remarked, for the benefit of growers of these plants, that although much is due to the hybridising art and to selection, yet high cultivation, together with the intelligent use of "floral manures," exert great influence on the plants.

GENERAL HAILSTORM INSURANCE SOCIETY.—The forty-third annual meeting of this Society was held at Norwich on Saturday, the 8th inst., when H. S. PATTESON, Esq., was in the chair. The adopted report shows a quite satisfactory balance upon the business of the year, but there is a slight diminution of premiums received as compared with last year, owing doubtless to the continued depression of the farming interest, and to the great decrease of corn grown. It is also stated that the hailstorms of 1886 in this country have been fewer in number and less destructive in their effect than in any year during the past quarter of a century. They have been of frightful severity in many parts of the Continent, though their force was spent before reaching England, otherwise the directors would have had to make a very different report. The directors urge that the uncertainty of the English climate is so great that no reliance can be placed by agriculturists for future years on the comparative immunity from hailstorms during the past two seasons, as one storm alone occurring in the summer might be sufficient to destroy all the benefits of laborious industry, and the promise of a bountiful harvest. The directors have further augmented the reserve fund of the Society. The special report recommending a dividend of 5 per cent. and a bonus of 2*s*. per share, free of Income Tax, was also adopted; the Chairman remarking that although a profit had been made, if the hailstorms of the Continent had occurred in England they would not have had such a result, and, with a diminishing income, they thought it prudent to increase their reserve fund.

ANTI-TITHE MEETING AT ROCHESTER.—The following resolution was proposed by Mr. ALBERT BATH (Sevenoaks), seconded by Mr. W. WHITEHEAD COUSINS (Cliffe-at-Hoo), supported by Mr. W. NASH (Higham, Rochester, the chairman), and carried unanimously, on Tuesday, January 11:—"That tithes, being the property of the nation, should be paid by the landowner to the State, and go for educational purposes and for the relief of local burdens, due regard being paid to life and vested int erests."

NATURAL HISTORY DRAWINGS.—A sale of a remarkable collection of drawings of objects of natural history, plants, insects, made during the seventeenth and eighteenth centuries, is to be held at Amsterdam on Monday next, January 24, by FREDERICK MÜLLER & Co., of 10, Doelenstraat. The list includes works from many of the best known flower-painters of Holland. Some of the old Hyacinths of H. BUDDE (1729) would be interesting as objects of comparison.

THE ROYAL TUSCAN HORTICULTURAL SOCIETY.—Here is a hint that might be followed by our own Royal Horticultural Society in this year of Jubilee. The Tuscan Society lately presented the Queen of ITALY, on the anniversary of her birthday, with a magnificent bouquet of Orchids and Bouvardias. The tribute was offered by the members of the Council in person, and was of course graciously accepted. Knowing the interest HER MAJESTY feels in the doings of the Royal Horticultural Society, we may suggest that an offering of this character might with great propriety be made to her on the anniversary of her accession, or some other suitable occasion.

THE "JOURNAL OF BOTANY."—The January number contains an interesting account of the life and labours of Dr. HANCE in China, accompanied by a portrait. The biographical sketch has a melancholy interest, as showing how much Dr. HANCE accomplished in the study of Chinese botany *in situ*, under the most adverse conditions, and how much more he might have achieved had he been in circumstances such as a man of his abilities and unwearied exertion might fairly have hoped to have been placed. As it is his successors will reap the harvest he has sown.

PHYSIOLOGICAL VARIETIES.—Mr. DYER calls attention in a recent number of *Nature* to an interesting case of this kind in the Ipecacuanha. Some years ago Ipecacuanha plants were reared at the Edinburgh Botanic Garden, and in due time despatched to Sikkim, a few also were sent from Kew. Differences between the two sets of plants were readily noticed, but while the Edinburgh plants differed among themselves, the Kew plants were all alike. After a time it was found that the culture was not likely to prove advantageous in Sikkim, and hence all the plants were turned out in the shade, and left to take their chance, Edinburgh plants and Kew plants intermixed, the Kew plants forming less than five per cent. of the whole. After a time, however, the Edinburgh plants disappeared, and now, says Mr. GAMMIE, only the Kew variety survives. Of this there are many plants, but their growth is so slow as to render any profitable return hopeless. Under other conditions, however, the results might be different, and the existence of these variations ought to prove an inducement to try them in various localities.

MR. CHARLES PLOWRIGHT.—According to the *Lynn News and County Press*, this well known and estimable correspondent of the *Gardeners' Chronicle* has become a magistrate of the borough of King's Lynn.

PORTSMOUTH CHRYSANTHEMUM SOCIETY.—The annual dinner of the subscribers and committee to the Portsmouth Chrysanthemum show took place at the "Albany Hotel," Portsmouth, on January 12, the Mayor, W. D. KING, Esq., in the chair, and Mr. Councillor F. POWER, Hon. Sec., in the vice-chair. About sixty sat down. It is the intention of the Society to collect money for the purpose of giving still better prizes at the autumn show than was hitherto possible.

SENECIO GRANDIFOLIUS.—Perhaps this fine Mexican species is better known by the name under which it was figured by Regel in his *Gartenflora*, t. 296, viz., S, Ghiesbreghtii. The coarsely toothed-stalked, deep green, roundish oval leaves are about a foot in length, and with the stout, deep purple curiously-spotted stem, form a striking contrast to the very large corymbose inflorescence of yellow-rayed flowers. There are several well grown examples in the conservatory at Kew.

NORMAL SCHOOL OF SCIENCE AND ROYAL SCHOOL OF MINES.—The following communication has been forwarded to us by Col. J. F. D. DONNELLY, Secretary of the above schools, for insertion in our columns:—"I am directed to request that you will be so good as to allow me to state, through the medium of your columns, that the number of applications for admission to the Normal School of Science and Royal School of Mines, at South Kensington, at the commencement of the present session, having been considerably in excess of the accommodation which the school can afford, it has become necessary to adopt some process of selection for the future. Hereafter, applications for admission should be sent to the Registrar of the school before the end of May, accompanied by a statement of the studies which the applicant has already pursued, the examinations he has passed, and the name of the teacher (or teachers) to whom reference may be made. Such applications will be considered by the Dean and Council of the School, who will decide on them according to their merits. A knowledge of elementary mathematics, such as is required of all Royal Exhibitioners and National Scholars, will be held to be of the first importance for those who desire admission to the course for the associateship of the school; while for occasional students, who propose only to take up certain specific branches of science, some preliminary knowledge of them will have weight.—Science and Art Department, January 14, 1887."

ROYAL BOTANICAL AND HORTICULTURAL SOCIETY OF MANCHESTER.—Mr. BRUCE FINDLAY, Curator and Secretary of the above Society, sends us the following communication, addressed more particularly to intending exhibitors:—"In consequence of the gardens of the Society being incorporated with

the Great Jubilee Exhibition to be held in Manchester this year (and which will open the beginning of May next), the usual Whitsuntide exhibition cannot take place in the gardens. For some time it was doubtful whether the exhibition would be held this year, but after mature deliberation the Council of the Society have resolved to hold the exhibition on a suitable plot of land near the Old Trafford Railway Station, and in the immediate vicinity of the Jubilee Exhibition. The year being the Jubilee of Her Majesty the QUEEN's reign, will be a memorable one, and the Council thought that many exhibitors would like to have a memento of the event, therefore it has been determined to give First and Second-class Gold Medals, and a Third-class Silver Medal: these Medals will have suitable inscriptions upon them. The Medals will be denominated "The Queen's Jubilee Medal." The quantity and kind of exhibit will be left to the discretion of the exhibitor. The Council venture to hope that this proposal (which, of course, will only be carried out this year) will meet with your approval. I am requested by the Council to ask whether they can rely upon your cordial co-operation as an exhibitor. The exhibition will open on May 27 next."

FERNANDO NORONHA.—Mr. H. N. RIDLEY, of the Botanical Department of the British Museum, will, we understand, shortly undertake an expedition to this island for the purpose of exploring its flora. The *Challenger* expeditionists investigated the flora of the sea, and also the fauna, but no naturalist has as yet been permitted to land. Fernando Noronha is a Brazilian penal settlement, situate about 250 miles off Cape S. Roque (Brazil), and slightly south of the Equator. The trustees of the British Museum have obtained permission for this expedition from the Emperor of Brazil, and it will, in all probability, lead to many interesting discoveries.

CHISWICK GARDENER'S MUTUAL IMPROVEMENT ASSOCIATION.—On Friday evening, February 18, at 8 P.M., Mr. ALEXANDER DEAN will give a lecture on "Character in Gardeners," at the gardens of the Royal Horticultural Society, Chiswick.

EMIGRATION.—An office has been established in 31, Broadway, Westminster, under the supervision of the Colonial Office, for the purpose of supplying intending emigrants with useful and trustworthy information respecting emigration to the British Colonies. The information is mainly obtained from the several Colonial Governments and their agents in this country. The office has published a series of circulars relating to Canada, the Australian Colonies, New Zealand, the Cape, and Natal. Each circular may be had on application, for one penny. Free passages are given to selected agricultural labourers and female domestic servants to Queensland, and to female servants to Western Australia only. Assisted passages are granted in certain cases to Canada, West Australia, and New Zealand. It is stated that there are openings for tenant farmers with capital in Canada, where also farm servants and female domestic servants are in demand. The demand for female domestic servants is general throughout the Colonies, but the male labour-market is over-stocked in the Australian and South African Colonies.

AMATEURS' NOTES.

WHITE LÆLIA ANCEPS.

I AM very much obliged to "An Amateur" for so fully replying to me on this subject. I can quite confirm his statement as to their rambling habit, and the growths being well away from material of any sort; but my experience is of growths being "over the sides of pots or baskets," or receptacles of any kind, that they are good individually, but they get too far over as time goes on, and go back in size. I attribute this to the air being insufficiently damp to suit them, and supply them with the requisite quantity of moisture. You cannot in a house containing some subjects in full rooting growth, and some absolutely dormant, keep it at the full degree of moisture required by one without hurting the other, but the pot and its contents can be kept fuller of moisture to supply these roots, therefore I like the bulbs to be in, or rather within, the diameter of the pot, and the roots will not die if not too much water is given. I have given up "Teak rafts" (with but few exceptions) for them, as I find the plants require moss on them, but for establishing quickly we find nothing exceeds unconfined rooting. We have air in plenty, too. If "An Amateur" will write me, and say where his plants can be seen, I shall be much pleased to come, and hope he will do me the favour of coming to see mine. *De B. Crawshay, Sevenoaks.*

LÆLIA ANCEPS DAWSONI.

A strong and vigorous plant (formerly part of that belonging to the late Mr. R. B. Dodgson, and figured in the *Orchid Album*, vol. i., plate 44), is now bursting its flower-buds from the spathes. It carries three spikes, showing two, three, and four flowers respectively; once before this plant bore four flowers on a spike, which greatly attracted the notice of Mr. Dominy, who happened to see it when in perfection, and who stated he had never before seen more than three flowers to a spike. The *Album* drawing shows a spike of three flowers; the *Manual* (sixth edition, p. 351) says "two or three." Warner's *Select Orchidaceous Plants*, second series, plate 34, speaks of "several," but gives a drawing which at least means four, possibly seven flowers—that is, if the cut ends of the spikes are to be joined to form one inflorescence, which is not, I take it, what is really meant. It is, however, quite certain that a healthy plant should, when well grown, produce four flowers. Can any of your readers give authentic information of more than four? In the other varieties of L. anceps a spike with four flowers is uncommon, the habit of the species being generally to produce them by twos and threes; it is true L. anceps of the ordinary type is stated to produce "two to five" flowers (*Orchid Manual*, p, 349), but five must be so exceptional as to be almost phenomenal. Has any one had five flowers this season, or when? *An Amateur.*

LÆLIA ANCEPS VAR. WILLIAMSII.

Mr. H. Williams, of Holloway, was here last week, and at once identified the imported plant in flower as L. a. variety Williamsii. He stated that it was far finer and more vigorous, both in bulbs and inflorescence, than the plant figured in the *Orchid Album*, which was rather weak, and did not show the peculiarities of this variety to anything like the perfection of that now in flower. He explained further that the "reddish-brown" hue in the plate was due to the yellow pigment used by the artist, and that in reality the lines in the tube are, as in this, crimson-lake. So that there is no question that this is L. a. Williamsii, and a very fine type of the variety; but you can judge of my surprise when I received, through the kindness of a friend, one of the flowers off the spike of four just flowered by Baron Schroder, and sent to South Kensington on the 11th under the name of Stella. It is identical with mine, only not quite so fine a form, neither so strong nor large. What Stella is was unknown to me before, and appears equally unknown to others, as a good orchidist in this neighbourhood sent a bloom up to the same meeting of a Lælia he called Stella, also from one of the newly imported plants, and which really proved to be Sanderiana, and on the misnomer being pointed out it was corrected, and shown as Sanderiana.

Hence we are able to fix on what Stella is, and it turns out to be Williamsii; and as this latter has already been shown and certificated under the name of Williamsii, the name Stella must be eliminated from the list. We have thus remaining of those flowered from the new importations these two new things, viz., L. anceps Sanderiana, and L. a. Williamsii—the former a form very near Dawsoni, but not equal to that grand variety. L. a. Schroderi has not, that I am aware of, flowered yet; but I am informed it has a great patch of orange of a deep hue on the lip, and certainly the plants I have seen under this name are all remarkably distinct in habit, being peculiar in the length and small size of the bulb, in the height of the encircling black markings on it from the base, and in the evident delicacy of the plant and its difficult cultivation—by far the most so of all the new importations.

Of the varieties showing rose tints on the sepals and petals very possibly the note on p. 83 of the *Gardeners' Chronicle* this week may put some of us on the right track as to the fragrancy of L. a Hilliana, and perhaps of other Lælias; but the protracted absence of sun this season gives us little chance of bringing the matter to a test at present. *An Amateur.*

TREES AND SHRUBS.

AZALEA OBTUSA.

AMONG the many different forms of Azaleas this stands in the front rank, and with the view of bringing it more to the notice of cultivators I am induced to make this note. It was figured in the *Gardeners' Chronicle* last spring (May 8, 1886, p. 585, fig. 126), when a description of the plant was given by Mr. Nicholson, of Kew. I would just say to all who want a good, dwarf, free blooming Azalea, of the amœna type, that they should give this a trial. It has some advantages over the fast growing Indian Azaleas to small growers—it does not so quickly outgrow the room at command; also it is as hardy as A. amœna, and is a counterpart of it as an early forcing plant. In A. obtusa, A. amœna, and A. Caldwelli we have three free blooming, early, and useful plants to cut from, all distinct in colour, and very easily grown; so well adapted, therefore, to the wants of the present day when so many cut flowers are wanted. A. obtusa is by no means a new plant, it having been grown many years ago, but appears to have almost gone out of cultivation, till, a few seasons ago, it was again brought to notice by Messrs. Veitch. We treat it here just the same as the amœnas. When out of bloom they are put into a moist growing heat; and when the buds are set the plants are placed out-of-doors till late in the autumn, when they are put in a cold Peach-house, and in the early part of December placed in a warm house to bring them into bloom, which they do in five or six weeks, the early ripened growth blooming without much forcing. *John Crook.*

AZARA MICROPHYLLA AND PHOTINIA SERRULATA.

YOUR Cork correspondent is very much mistaken as to the tenderness of the above, The Azara is not only quite hardy in England, but does best in a north aspect. [It was killed at Kew a few winters ago if we remember aright. ED.] Here it does remarkably well, and I have never seen it the least injured by frost, although it gets no protection whatever. It stood the winters of 1879 and 1880 at Petworth without any protection, and came through the ordeal well. I believe it to be quite as hardy as the Laurustinus and Sweet Bay. I have more than once drawn the attention of your readers to this beautiful shrub, and it would be a pity to deter people from planting it under the idea that it is too tender for our climate, as it is quite the reverse of being miffy. Another correspondent, speaking of Photinia serrulata, states that it is seldom met with other than growing against a south wall. Here, again, I must beg to differ from him, as it is frequently met with in the southern counties as standard trees; I know several in this locality from 20 to 30 feet high. A specimen in the pleasure-grounds here flowered freely during the summer of 1885. It is certainly a very telling tree in the spring if backed up with other foliage, and well worthy a place in all gardens where ample room can be given it, as I find it dies back where crowded by other shrubs. *R. Conway, Muntham Gardens, Worthing.*

DENDROMECON RIGIDUS.

What a chapter could be written on handsome, very desirable, and reputedly hardy plants which have disappeared from cultivation within the last fifty years, or even less. Is not the plant whose name appears at the commencement of this note a case in point? It was first discovered by David Douglas in California, and first introduced to this country in a living state by Messrs. Veitch through

their collector, William Lobb. A figure appeared in the *Botanical Magazine*, vol. lxxxv., t. 5134, and the plant is there stated to have proved quite hardy. Imagine a shrub with glaucous green, shortly stalked, acuminate leaves, and fine golden-yellow Poppy-like flowers, a couple of inches in diameter, borne singly at the tips of the short spur-like lateral branches, and some idea of this beautiful shrub will be obtained.

GUSTAVIA GRACILLIMA,

This is is a very handsome Myrtaceous shrub, introduced several years ago from New Grenada by Mr. Bull, and figured in the *Botanical Magazine*, t. 6151. The large rose-red flowers—4 inches in diameter—are produced in late summer and autumn; at present the young growths, the spreading recurved long narrow wavy-edged leaves have attained their full size, are a fine creamy-white colour. and contrast admirably with the dark green adult foliage. The sight of a fine specimen in the stove at Kew suggested these remarks and makes us confess that, apart from the undeniably beautiful flowers, the plant is worth cultivating for the very pleasing tint of the young growths. *G. Nicholson.*

PLANTS AND THEIR CULTURE.

BEDS IN CONSERVATORIES.

THE present is a fit time to prepare new beds in conservatories for permanent plants, or to renovate those in old ones. In proceeding with this work the sites should be first concreted, and tile drains 3 inches to 5 inches in diameter, according to the size of the beds arranged upon its surface, the concrete having a fall to the drains; a layer of rough stones or brickbats, covered with another of rubble, should then be placed over the whole surface, and this should be coated with thin turves to keep it clean, the entire drainage being about 1 foot in depth. The kind of compost suited to the majority of plants used in furnishing warm conservatories should consist of rough fibry loam and peat, with a moderate amount of sand, the quantity of peat used being more or less, in proportion to the nature of the loam, and if this is retentive, some pounded brickbats or charcoal intermixed will be beneficial in keeping it open. Sound fibry loam, with enough sand to keep it porous, is most suitable for Camellias; the correct time, however, for shifting these is when they have almost finished their growth, after their buds have become discernible. The compost should be about 2½ feet in depth, be comparatively dry when filled into the beds, and well consolidated by treading. Pits for climbers may be made from 2 to 3 feet in diameter, the larger for luxuriant growers; other particulars may correspond with those recommended for the beds. A 3-inch outlet to insure efficient drainage must be provided at the bottom of each pit.

GARDENIAS, CALADIUMS, AND GLOXINIAS.

Where Gardenia blossoms are required early, no time should be lost in placing the plants in the forcing-house, where they can have a night temperature of 65°, and about 5° more by day, with a moist atmosphere. Particular care should be taken to destroy any trace of mealy-bug before new growth commences; and when this takes place, liquid manure or soot-water will assist to improve the quality of the successional blossoms. In cases where plants are growing in beds, a top-dressing of horse-droppings and soot will also be a safe means of stimulating the energy of the plants. Plants to be retarded for later flowering, may remain in a temperature varying from 55° to 60°.

A batch of Caladium tubers should now be shaken out, and potted in small pots; peat and loam with a dash of sand will suit them, and if placed in a brisk heat they will quickly run their roots through and around the soil in the pots, when an early shift into larger pots should be made. Some Gloxinias may likewise be potted and placed in stove heat; these succeed well in loam and peat or leaf-soil in about equal parts, freely mixed with sand. The tuber should be placed in pots just big enough to hold it, and be put on a shelf near the glass. Water must be sparingly supplied until free growth commences; and their foliage should not be syringed. *Thomas Coomber, Hendre Gardens, Monmouth.*

THE HARDY FRUIT GARDEN.

PRUNING, PLANTING, AND TRAINING.

WHEN the welcome change of weather comes, all arrears of pruning should be pushed on so as to get all completed as soon as possible, also continue to carry on the nailing and training of wall trees, and any further planting that may yet require to be done. In extensive gardens the above mentioned operations extends over a long period of time.

CUTTINGS.

These should be prepared in bad weather. Red and white Currants and Gooseberry shoots to be used for cuttings should have all the buds rubbed off except four, towards the top of each cutting, excepting black Currants, which should be left entire. When made, tie into small bundles, or, better still, lay them rather thickly into trenches till time and weather permit of their being planted out in a proper manner.

PRUNING BUSHES.

In pruning Gooseberries, have the head of the bush well opened out in the centre by cutting out a number of old and young crossing and interlacing shoots annually, and leaving a quantity of young shoots, and merely shortening these so as to balance the head. By so doing finer fruit is obtained for dessert purposes than by spurring in to the old wood continually. Currants, both red and white, are pruned in the same way. Black Currants should also have some of the oldest of the wood cut out, leaving as much of the young growth as room can be found for its development. Raspberries should now have their tops shortened to the required height. Autumn bearing varieties should be cut off close to the ground; these last named bear fruit on the current year's growth. The summer kinds should have had the old canes cut out, fresh staked where required, and thinned out to about five canes to each shoot. Willow cuttings are found to be useful material for tying them to the stakes. When these operations are finished give a good mulching of either short manure or leaf soil, lightly pointing the soil over beforehand; this does no harm, and the manure is washed down to the roots by the rains. *Edward Ward, Hewell, Bromsgrove.*

FORESTRY.

THE TIMBER TRADE.

As was anticipated a year ago the prices of home-grown timber still remain low—too low, indeed, for even a very small margin of profit to be left to the grower after expenses have been deducted. Unfortunately, this condition is likely to remain for a considerable time, as I have received information that some of the "'cute" dealers have undertaken to supply large mining orders for the ensuing season at a halfpenny and in some cases three halfpence per foot less than the same class of wood has been selling at during 1886. The prospect, therefore, of landed proprietors being able to dispose advantageously of their timber during the year 1887 is poor; but there is one consolation in the fact that timber prices cannot long remain as at present, for it is evident to those who carefully consider the present state of the Canadian and Norwegian forests that in a few years they will be nearly exhausted, as replanting, except in a very few cases, has not been done. Under the circumstances my advice is to refrain from cutting timber or thinning plantations, unless it is necessary, until the market changes. Young and fast-growing plantations are exceptions, for unless they are regularly attended to loss and not profit will be the result The thinnings from young woods will be useful for fencing, and usually find a market; but whether saleable or not, it is better not to injure the plantation by allowing the trees to remain in too close proximity to each other. A good price is paid by farmers for Ash just now—indeed, any quantity can be sold.

Hereabouts, where boat building is carried on in a small way, Larch is worth 1*s.* per foot (I sold timber of the same quality eight years ago at 1*s.* 6*d.*), while Oak of the best quality occasionally sells at from 1*s.* to 1*s.* 3*d.* per foot. The latter, when of a particular shape, such as when suitable for "knees," and other bent portions of a boat, will bring a higher price. For clog-making, Alder and Birch find a ready market at 9*d.* to 10*d.* per foot, but in districts where this industry is not engaged in I have no doubt whatever that great difficulty will be found in selling these two woods at three-fourths those prices. Elm of large size and extra quality brings, for boat-building purposes, from 1*s.* 3*d.* to 1*s.* 6*d.* per foot; but the usual selling price is much lower. Lime wood is much sought after for clog-soles, as it wears as well as Birch or Alder, is lighter, and is quite as easily worked. It sells at 10*d.* per foot. Sycamore is more readily disposed of hereabouts at present than any other wood—indeed, we cannot keep pace with the orders. Trees of large dimensions—say, 2 or 3 feet in diameter—fetch readily enough from 2*s.* to 2*s.* 6*d.* per foot; while those of smaller measurements sell at from 1*s.* 6*d.* to 2*s.* per foot, much depending on the cleanness, &c., of the timber. Whether these prices will continue or not cannot be said, but it is a good policy to sell when the market is high. *A. D. Webster, Penrhyn Castle, North Wales.*

FLORISTS' FLOWERS.

DAHLIA ROOTS IN WINTER.

IN keeping roots of Dahlias through the winter two dangers beset them, and need guarding against, viz., damp and frost. While the frost is sharp, care must be taken that the roots are sufficiently protected to prevent its reaching them, and when they are covered up for a length of time damp is apt to settle upon them, and when it does it rapidly leads to rot. If damp settles about the crown of the roots, it turns to mould, and then, if not checked, attacks the thin cord-like portion of the tubers that attaches them to the root, and it becomes severed from it. The young growths come out of the crown of the root immediately round the main stem, and if any portion of this becomes rotten it should be cut away at once, a little dry charcoal powder sprinkled over it, and the root taken to a warm dry room for a time. Some varieties are much more difficult to keep through the winter than others. Such sorts soon show attacks of damp and need special care, and they may be attacked in this way when surrounded by other roots that are perfectly sound and dry. One of the best places in which to keep Dahlia roots is a dry shed, lined with straw and mats, and having tiers of shelves on which the roots can be laid. In such a place a good deal of frost can be kept at bay by simple covering, but when frost and damp combine to attack, a common petroleum stove lamp will be found of great service, and the roots may be uncovered so that the dry warm air may circulate among them. *D.*

THE RIVAL ETHELS.

That charming late-flowering Japanese Chrysanthemum, Ethel, with its medium-sized white cup-shaped blossoms, has during the past year been somewhat prolific of sports, two of them taking on a yellow and the other a lemon colour. The best known is one named Mrs. Jones, of a rich bright golden colour, and which was awarded a First-class Certificate of merit by the National Chrysanthemum Society. This is being distributed by Mr. Ware, of

Tottenham. The other two are in the hands of Mr. W. Allen, Mount Pleasant, Norwich. One, of a bright yellow colour, which in all probability will prove to be very similar to Mrs. Jones, is named Mr. W. Allen; the other, of a lemon-colour, is named Mrs. W. Allen. Now if the two golden sports are identical in colour it is awkward to have the same thing sold under two different names, and the one that has been longest before the public should have the priority. As it would appear the sports originated at places widely apart, the possessor of each is justified in naming and distributing his foundling. No doubt the new edition of the Catalogue of the National Chrysanthemum Society will give reliable information as to their difference or similarity of character. *R. D.*

COVENT GARDEN MARKET.

AUSTRALIAN Pears, especially Glou Morceau, are now to be found in the shops. The same kind, of English or French growth, is likewise in season. Easter Beurré Pears of probably Channel Island growth are exceedingly fine; Knight's Monarch, Bishop's Thumb, and Winter Nelis are the other Pears found in quantity. Madeiran and West Indian Pine-apples are abundant, as also are black Grapes, such as Hamburgh and Gros Colmar, and white varieties, Muscat of Alexandria and Foster's Seedling. Custard Apples from Madeira are very fine and large, and Mangos from the same source and the West Indies are found in some few shops. Tangierine Oranges of Portuguese growth are very fine, rivalling almost the common Orange in size. Amongst vegetables are Peas in pod, Celeriac fresh and good, apparently home grown, as such should be; Radishes of the French breakfast strain—pink, white tipped, and appetising looking; excellent Seakale and Endives, the latter both plain-leaved Batavian and Mossy curled. The Asparagus season is heralded by some fair samples; and new Potatos are getting good; early Broccoli from Cornwall, a part of the country the late severe weather has not reached, have also arrived. Cabbages, apart from Savoys, are scarce, although Greens are abundant. In cut flowers, which are now found in great variety and very choice and enduring, may be mentioned as being commonly seen, Niphetos and Safrano Roses for the best bouquet work; monthly Roses and dark Roses of the Geant des Batailles and Général Jacqueminot type. Your market grower, when he has found a few plants that suit his customers, will go on growing them without thought of change, even when better things are at his hand. Tulips, planted in some instances of different colours, as red and white, in the same pot; Hyacinths, Lily of the Valley, Tazetta Narcissi, Camellias, Callas, Bouvardias of all colours; Lilac, bleached white; and many species of Orchids, comprise the bulk of the pot plants and cut bloom.

THE APIARY.

BEE-FLOWERS.

ERICA CARNEA.—In further reference to what has been said on the subject of bee-flowers in the *Gardeners' Chronicle* at p. 11, I did not mean to convey that the plant was wild in Derbyshire, but I believe it may be gathered on some of the Scotch moors (?); yet no doubt it is grown in quantity at Matlock, probably at Mr. Smith's nursery. It is the best bee-plant extant for early feed. Years ago I was so struck with the way Mr. Ingram used it, in conjunction with other plants in his spring gardening at Belvoir Castle, that I procured a large supply. The white variety is now in full bloom, and the type form, where the mound faces the sun, is turning quite pink. I find no difficulty with the culture of Daphne Mezereum. It is now in bloom, and afterwards will berry quite freely. The bushes were as effective this past summer as those of Skimmia japonica are in mid-winter. What makes the Daphne so charming an object are the bits of decayed colour in the foliage—bronze and gold—lit up with the bright crimson of the berries. A bed of this pretty shrub is seen to perfection in August, when in full berry, after an evening shower, with the setting sun shining on it, the tiny crystal drops suspended like diamonds from the beads of coral.

It is difficult to procure seed of Melilotus officinalis this year, but the other sorts can be had from any seed warehouse. Mr. Ingram is, I think, wrong in saying the seed of Bokhara Clover does not emit fragrance. If he will procure a packet and try the experiment, placing it in a drawer, which for years will emit the odour of new-mown hay. During a mild autumn the last natural feed for bees is from the flowers of Ivy. *Corkaigensis.*

BEAN WEEVILS.

MR. THEODORE WOOD has lately published in the *Transactions of the Entomological Society* the results of his experiments with Beans infested with the Bean-weevils. The general impression is that, provided the plumule or the radicle be not injured, the plants do not materially suffer from the mere perforation and partial consumption of the cotyledon. Mr. Wood shows that for a time plants raised from seeds thus perforated show no sign of weakness, but when the flowering period arrives then the blossoms produced are few and small, the plant withers and sometimes dies without producing a single pod. Further experiments of

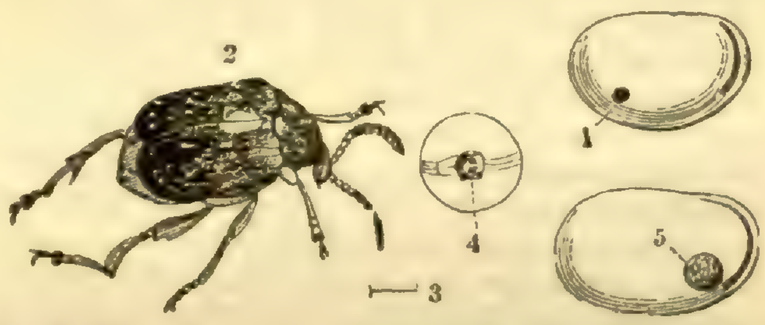

FIG. 29.—BEAN WEEVIL, BRUCHUS GRANARIUS.

Mr. Wood, made with five different varieties, showed that the total produce was so greatly diminished as to leave no ground for doubt that the presence of the weevil in the seed is highly detrimental, affecting to a very considerable degree the reproductive powers of the future plant, at the same time the mischief done is not in proportion to the number of insects present. Mr. Wood would render service if he would tell us how to prevent the attacks of the weevil.

VEGETABLES.

LEEKS.

THAT Leeks are coming much more into use as a vegetable than in previous years there can be no doubt. This is shown from two considerations—1st, that greater breadths are being sown by market gardeners; 2d, by the larger demand for seeds. That the Leek is one of the most wholesome of vegetables is certain, and when well cooked and served up with some savoury sauce they are worthy the attention of the epicure.

KINDS OF LEEKS.

The Scotch are great cultivators of Leeks, and the Musselburgh, raised by Mr. Thomas Handaside, seedsman, Fisher Row, about 1834; Ayton Castle raised about 1848 by Mr. James Pousty, of Ayton Gardens; and Henry's Scotch Hybrid Leek, which is said to have been raised previous to 1839, and of which the Ayton Castle is held to be a synonym, and which was raised by Mr. William Henry, are all very fine types, and it is recorded that Mr. Henry has grown samples of the weight of 5 lb. each, blanched to the length of 20 inches, and measuring rather more than 12 inches in circumference. It is said that Henry's Leek was obtained from a home selection crossed with a Dutch variety. The Musselburgh is also known as the Scotch Flag Leek, and seed of it saved in Scotland or in any part of the United Kingdom from a fine stock, commands a much higher price than does that of the ordinary London Flag Leek. Scotch soup, or "cockie-leekie," is a well-known dish in the Scotch restaurants, and some of them in the city of London have it, and it is well adapted for cold weather. It may be said of the Scotch as well as of the other Leeks, that the growth of them last season was something marvellous, in remarkable contrast to the previous year when the roots made little growth comparatively, owing to the drought.

The ordinary London Flag-Leek is that most generally grown, and is found very useful for all ordinary purposes. In France it is said to be wanting in hardihood, and in the climate of Paris it can only be used for an autumn crop, as it is unable to bear any winter that is not exceptionally mild. The French have several types of Leeks, those best known to English growers are the Large Rouen and the Giant Carentan, which are improved types of the London Flag, but of hardier constitution, answering to Henry's Coldstream, and that latest improvement in the Scotch Leeks—the Lyon.

LEEK SEED: WHERE IT IS GROWN.

The great bulk of the seed of the London Flag Leek of the best types is saved in Essex; but our seasons being so precarious, the crop is as often a failure as not. Owing to the exceptionally fine character of the summer of 1886 a good crop of seed is confidently looked for. Seed of the old Flag Leek comes mainly from the South of France, where it is largely grown, and where the climate is favourable to the production of seeds; but this type produces a small bulb compared with the Scotch varieties. When sown for seed in this country the seeds are placed thinly in drills, and the plant thinned out as required thus avoiding transplanting and ensuring the continuous growth of the roots; and in addion to their great size it is held that the Scotch Leeks are much better flavoured than the smaller and commoner types.

HOW THE PLANTS ARE GROWN IN SCOTLAND.

In Scotland, and later in England, Leeks are largely grown for exhibition purposes, while for ordinary culinary purposes they are much better cultivated than they were formerly. Many of the Scotch growers prefer to transplant their Leeks; they raise the seeds in properly prepared seed-beds, sowing about the middle of February, if the soil is dry enough for working; and when the seed is sown a few Spruce Fir branches are laid upon the surface to protect the young plants from frost. The ground in which the Leeks are planted out is deeply dug and heavily manured in autumn, and allowed to lie up rough during the winter. Before planting out a thick layer of a rich compost is spread over the ground, and well mixed with the surface soil. The Leeks are planted out in rows 2 feet apart, and the plants are 9 inches apart in the rows. The plants are put out with a blunt dibble, and when the hole is made it is filled with water. The Leek is a moisture-loving plant, revelling in a saturated and rich earth, where it grows rapidly and becomes highly succulent.

Earthing-up is strongly recommended by some cultivators, and it is essential to get a long blanched root; it is all the more necessary when fine roots are required for exhibition; but the market gardeners do not trouble to do this, but hoe between the rows in summer, keeping the surface clear of weeds. And at this season of the year they dig up a quantity, the workman being especially careful not to injure the roots, and so they strike the spade or fork deeply into the soil, so as to get well under them; they are then carefully laid upon their sides, and gathered up by women, who wash them and pack them ready for

market. The recent heavy snowstorms have somewhat punished the plantations of Leeks in the open fields. *Pisum.*

HOME CORRESPONDENCE.

EUCHARIS AMAZONICA.—After many years' experience in the cultivation of this useful flower and the opportunities I have had in seeing the different methods of its cultivation, I have not seen a finer or more successfully cultivated lot of plants than those which are now in full bloom at Holme Island, Grange-over-Sands, the seat of E. G. Wrigley, Esq., just now. They occupy a small division of an old Pine-pit, and every plant carries from ten to thirteen spikes, and each spike from five to six blooms, with foliage of great substance and perfectly clean and free from all insects. This is the fourth time they have bloomed within twelve months, and not merely a few straggling spikes, but throwing up a full crop each time, quite equal to those now seen. Mr. Tullett, the head gardener, who has grown them from small plants, has displayed much skill in his management of them. *W. S.*

THLASPI VIRENS.—The little alpine mentioned by Mr. Webster on p. 22, as abounding on the hillocks of lead mine *debris*, above Llanrwst on the Carnarvonshire side of the Conway, is Thlaspi occitanicum (Jordar, *Sowerby's Bot.*, ed. 3, t. 147). A closely allied form, Thlaspi virens (Jordan, *Sowerby's Bot.*, t. 148), is equally abundant in similar situations near Matlock. Some years ago I transferred some of both plants from their respective habitats to my rockeries, and so far from dying out they give plenty of occupation in weeding every year. They are biennial in habit, and flower and ripen seed abundantly. If Mr. Webster will try them in a raised bed in three-fourths limestone *debris* and one-fourth soil—a mixture in which many alpines flourish—I think he will change his opinion about their being hard to cultivate. I cannot distinguish one from the other, and Bentham includes both under Thlaspi alpestre (Linnæus). *C. Wolley Dod, Edge Hall, Cheshire.*

INSECTS AND FROST.—The writer of the interesting Agricultural Notes in the *Daily News* of Saturday last, referring to the weather, stated that frost was useful in keeping down insects, the larva perishing during prolonged frost. It would be useful to learn from some experienced entomologist how far that assertion is true [not true]. I am disposed to think it belongs to the category of popular errors, or, if not, needs more proof than has yet been given. The previous winter was decidedly a severe one, and we had much intense frost, and yet it will be remembered that rarely have queen or breeder wasps been more abundant than they were last spring, although most of them seem to have perished later. Then the writer specially mentions Daddy Longlegs as being more plentiful after a mild winter, and yet I never saw them so abundant as last autumn, indeed, it seemed as if the wasps had for the time been metamorphosed into these comparatively harmless insects. Is it not really the case, that whilst mild winters keep insects lively and thus exposes them to the attacks of birds, severe winters keep the larva not only quiescent, but also find it deeply buried? Has a severe frost, for instance, any destructive effect upon the eggs of insects deposited on trees or in wall crevices, or even in the soil?—and equally, does it really destroy comatose larva? Any entomological instructions to gardeners should make these matters clear. The recent frost, although at times intense, did not penetrate so deeply into the soil as in some previous years, because of the snow. With me, just now, insect larva is more in danger of destruction by drowning than by frost. *A. D.*

LUCULIA GRATISSIMA. — Your correspondent, "R. P.," p. 791, vol. xxvi., calls attention to this lovely greenhouse shrub. I can fully indorse all he says in favour of it. We have a plant here which has been planted out five years in a border similar to the one he describes at Messrs. Backhouse's of York, which never fails to give us annually a rich display of its fragrant blossoms. It is growing in a span-roofed greenhouse, which is kept a little higher than ordinary greenhouse temperature by the hot-water mains passing underneath the floor for the heating of the plant stoves adjoining. It is, however, to be deplored that the Luculia lasts so short a time in a cut state; that being so, I intend growing it in pots instead, for room decoration, as it is much appreciated for its many good points. I may state that it is easily and quickly raised from seed, for from a packet of seed obtained from Messrs. Veitch of Chelsea last spring I have now a number of healthy plants, which I hope to be able to flower in small pots. *G. Hall, Tabley House Gardens, Knutsford.*

NARCISSUS MINIMUS.—Mr. Ware sends us a flower of this pretty little plant (fig. 30), the earliest of all the Trumpet Narcissi. The extreme length, measured from the base of the ovary to the tip of the corona, is less than an inch. The lanceolate

FIG. 30.—NARCISSUS MINIMUS.

segments are as long as the corona, and their colour somewhat paler primrose—that is, so far as the fog in Wellington Street as we write will permit us to see. The flower is protandrous—that is, the anthers shed their pollen before the stigma is mature, hence cross-fertilisation is a necessity. It is much smaller than N. minor, *Bot. Mag.*, 6, and is perhaps the Ajax pumilus of Haworth.

TREE MEASUREMENT BY THE ABNEY LEVEL.—There is a fine specimen of the deciduous Cypress in the grounds of the Menagerie, a lovely enclosure, situate on a peninsula at the west end of Combe Park, formed by a bend of the pool at this point. This pool, which covers an area of about 90 acres, was formed at considerable expense by Capability

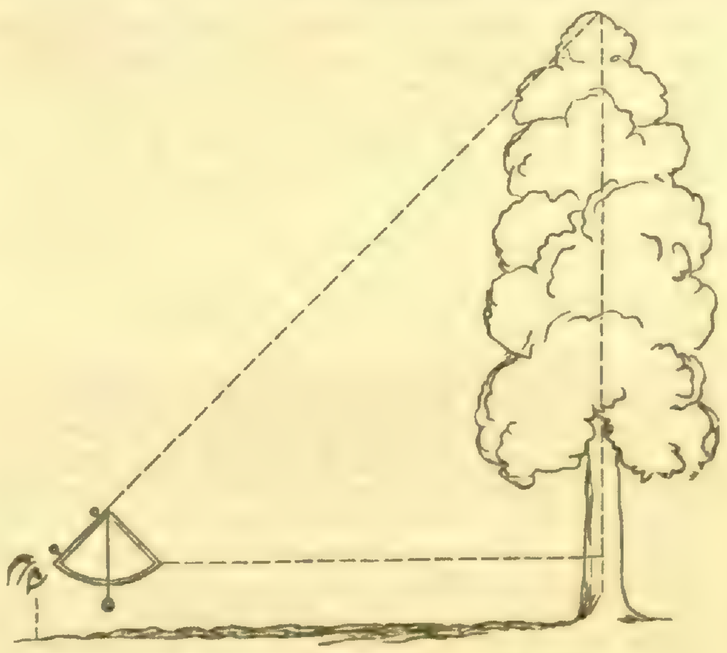

FIG. 31.—MEASURING HEIGHT OF TREES.

Brown about 130 years ago. I had long wished to obtain the height of this tree, but it was so situate that a base line on the land side could not be obtained without some difficulty. Whilst skating round there recently, it occurred to me that the necessary base line might be obtained by producing it along the ice on the pool, which is of considerable length at this point. Utilising the opportunity afforded by the sheet of ice, I brought the "Abney Level"—a beautiful pocket instrument, 4½ inches long—to bear on the top of the tree, which, at a distance of 80 feet from the centre of the base of the tree, gave an angle of 41° 15′, the "natural tangent" of which is .8769; this, multiplied by 80′, the distance from the base of the tree, gives 70′.1520 plus 5′ 5″, the height from the eye to the ground when taking the observation, gives the height of the tree 75′.6520, or say 75′ 6″. To prove this I took another observation at a distance of 100 feet, which gave an angle of 35° 5′, the natural tangent of which is .7023, multiplied by 100 gives 70′.2300 plus 5′ 5″ as above, gives the height of the tree, 75′.7300, differing, and that decimally only, from the first observation at a distance of 80′. By the aid of this convenient little instrument the heights of a whole parish of trees might soon be ascertained. Explanation of the first observation as under:—Angle 41° 15′, "natural tangent" .8769, distance 80′ plus 5′ 5″ .8769 × 80 = 70′.1520 plus 5′ 5″ = 75′.6520. Circumference of trunk of tree at 3 feet from ground, 11′ 6″. *Wm. Miller, Combe Abbey Gardens.*

[The diagram at fig. 31, though different in detail, will sufficiently illustrate Mr. Miller's article. The "natural tangents" may be found in Chambers' *Mathematical Tables*, p. 318. When the height of a number of trees is required, the observer measures a base line from the trunk of the tree to any convenient distance from it, and there takes the angle, the natural tangent of which can be ascertained from the book at once; or, if many trees are to be measured, it will be more convenient simply to record the angles in a notebook and work them out at leisure afterwards. ED.]

WHAT IS A PICOTEE?—It may be conceded that the Celtic *pic*, meaning point, is the root of Picotee; but we want some connecting link. This is found in the French diminutive *picot*, used of small points either on the edge or on the surface of anything. In the former sense it is technically applied to lace. "Bride Picotee" (the name of a story in *Aunt Judy's Annual for* 1883) means lace edged with *picots, i.e.*, points or loops made by a particular crossing of the thread. The second sense of *picot* we find in *picoté*, meaning marked with spots or freckles of a darker colour on a light ground. Besides these there is a curious sense of *picot*, a pin-eyed Auricula flower; but this sense may be dismissed as having nothing to do with the Picotee, and we have to choose between the first and the second. Mr. Maw prefers the first, but I refer him to the definition of Picotee in *The English Flower Garden*, p. 108:—"Picotees were (formerly) freckled or spotted, and had a white ground, with the additional colours in spots, giving the flowers the appearance of being dusted with the colours." Now, however, "instead of being spotted they have the colours confined to the outer edge of the petals," &c. Canon Ellacombe tells me that he cannot find the name Picotee earlier than the latter part of last century, and that its earliest form is *piquette*, applied to spotted Carnations. This suggests *piqueté* (not *piquotée*, as given in *The English Flower Garden*). *Picoté* and *piqueté*, meaning marked with spots, seem to have been collateral forms of the same word in French of the last century. The former is found used not only of *la petite vérole*, but also of spotted monsters in heraldry, and of "shells of the genus Conus." The word *piqueté* is not found in the *Dictionnaire de l'Académie*, but is given in Littré's *Dictionary*; for its use he quotes Buffon's *Natural History*, in which the egg of the Willow wren is described *d'un blanc terne, piqueté de rougeâtre*. This "white with reddish freckles" seems to have been the colour of the original Picotee; but if it can be shown that the name was first given in reference to the indented edge of the flower I will adopt the other derivation and agree with Mr. Maw. *C. Wolley Dod, Edge Hall.*

—— In reference to the French word *picoté*, surely it means *marked* only (not necessarily with small-pox). I should say the word was applied to the red edge of the flower, the outline being marked. I know it is used in connection with small-pox, but I think only as "spotted" or "marked." *Picot* is a very old French personal name. There are also the old Norman French personal names Bigot and Pigot. *Domesdayite.*

ROYAL HORTICULTURAL SOCIETY.—It is gratifying to witness the continued support given to the Royal Horticultural Society by the trade and the horticultural public at large—a fact bearing evidence in itself of the necessity of some institution of the kind. It argues little for the intellectual character of the nation at large that the cause of horticulture receives no national support. Less wealthy nations enjoy their schools of horticulture and national horticultural societies, yet we as a nation allow these things to take care of themselves. We should at lease have one establishment entirely devoted to the cause of horticulture, and on such a footing as to be worthy of the nation. Science is well represented and supported by the nation in the shape of botanic gardens, but surely a much greater mass of the com-

munity is benefited by the teachings and appliances of horticulture. If such an organisation as that of the Royal Horticultural Society were to receive support at the hands of the Government, its sphere of usefulness could not only be extended, but made to embrace all branches of horticulture, floriculture, and arboriculture, and be to the nation not merely a school of science, like that at Rothamsted for agriculture, but an institution where the "theory and practice of horticulture" could join hands and render one another mutual assistance. The trial grounds at Chiswick are not sufficiently extensive for such a project, but land could easily be obtainable outside of London where trials of all kinds of agricultural produce could be conducted. No better place could be devised for the convening of congresses on all sorts of subjects pertaining to horticulture. Witness the benefit derived by the country at large by the Apple and Pear Congresses. Year after year adds fresh varieties, or old ones under new names to the list of garden produce, until the mass of the gardening fraternity becomes perfectly bewildered, and no one knows what to select so as to occupy his limited space to the best advantage, or distibute his annual expenditure in the most economical manner. Hundreds of useless Apples and Pears cumber the gardens throughout the country, named or nameless, and which may now be rigorously discarded to make room for those of recognised merit, whether old or new. The results of the Pear Congress have not yet been published, but, we are told, may be expected before long. Potatos, Peas, and all kinds of horticultural produce should be put through a like ordeal, and published for the benefit of the community at large. A school of horticulture could be established in connection with such an institution, where the youthful mind could be taught the rudiments of horticulture, floriculture, arboriculture, and allied subjects. This theoretical instruction could or should be based on practical demonstrations. Boys attending such instructions need not necessarily follow the profession of gardening unless their taste developed in that direction, or in some special branch of it. Painters or artists in general could not fail to profit by drilling in such a school where the teaching could profitably be made to include instruction on the general conformation of plants, the functions of their essential organs, and their physiology. This will be evident to those who know how liable flower-painters, who are ignorant of the simple rules upon which natural classification depends, are to commit botanical blunders. Whether the pupil followed out any of the above avocations or not, the elevating tendency of an acquaintance with Nature in her mildest moods and innocent harmonies could not fail to be of service to him in after life, either materially or by advancing him in the social scale and the estimation of his neighbours. *Outsider.*

FRUIT TREES AND BULLFINCHES.—Every gardener knows how destructive bullfinches are among the Gooseberry, Damson, and other fruit trees at this season, not only spoiling the crops for next year, but disfiguring the trees, and in some instances, killing them entirely, especially in the case of Gooseberries. I have tried several remedies, but find nothing to equal the decoy bird in a trap-cage, which we practise here. The cost of seed to keep the bird through the summer is a mere nothing, compared to the loss of fruit. As soon as the young birds appear in autumn, we put out our cage, and generally catch in a day the whole nest of young birds with their parents; and as soon as we hear the piping of one in the grounds or kitchen garden in winter, the cage is placed against the wall, or in a tree, and the little depredator is soon caught—generally in a few minutes. By this means, we have lately caught four or five in a day. *W. Evans, Strensham Court Gardens, Tewkesbury.* [Wretch! *member of the Selbourne Society!!*]

HORTICULTURAL EXHIBITIONS.—"B.," p. 83, is to a considerable extent right in saying that the cure for dishonest exhibiting "rests with the evil-doers themselves," but that does not give much hope of a remedy; as it is rather an unusual thing for an evil-doer to change into an honest man. I believe the evil complained of reaches farther than many people imagine, and the strange part of the case is that some of the offenders who would scorn to do a dishonest act in any other way, yet cannot see that by showing things grown by other people as their own productions they are committing an actual robbery from the man who would otherwise win the prize. No doubt it is rather vexing if one has enough except one item for a collection, and must either forfeit all his chance of £5 or borrow from a friend, and by so doing rob another man of his desert. The man's self-respect and real manliness is not always strong enough to stand the strain in such a case; and when once he turns to such nefarious practices, possibly it comes easier to him another time, until it seems to be very easy matter, and he excuses his wrong actions by saying others do the same thing, and if it is fair for others it is for him. This is what I have heard some of these people say. I have heard others say it was allowable at a certain place because there was no rule in the schedule to the contrary. I think detection is not so impossible as "B." imagines; but it would require strong co-operation among the honest exhibitors to stop it entirely, and thus make every one stand on his own legs, instead of supporting himself on those of half-a-dozen people. *W. H. Divers, Ketton Hall, Stamford.*

—— Your correspondent "B." is a man of many suggestions, and sometimes indulges in the expression of rather peculiar ideas. His remarks concerning the "dressing" of flowers which he mildly calls "radical" are almost revolutionary. It is manifestly unfair that one exhibibitor should "dress" another's flowers, but such an action hardly warrants the condemnation of the whole system of "dressing" which "B." terms "a mild species of deceit." But how can it be deceitful, inasmuch as the slight manipulation some of the flowers undergo improves their appearance, but does not alter the distinguishing characters of the species? A Carnation remains a Carnation still. It is inability, not deceit, that prevents the public from bringing "their pets to the same pitch of perfection." Probably "B." is aware of the tendency in Carnation flowers for the calyx to split, the petals falling out in a loose manner, imparting a ragged appearance to the flower. This tendency is more marked among the finer, and consequently "exhibition blooms." Would he have them exhibited in this state? Is the grower to be prevented from staging them because he is not allowed to make them presentable. The prizes stimulate towards the production of a higher standard of excellence, and when a natural provision fails, artificial aid must be called in, provided, of course, it is not carried too far. Why does "B." hurl the weight of his remarks against the section of "florists' flowers" alone? He takes exception to the practice of "dressing" flowers: to be consistent he ought to object to the preparation of vegetables, and ask that they should be exhibited in the condition they are taken from the ground. I believe the National Chrysanthemum Society have provided classes for "undressed" blooms, but they did not meet with the requisite support. It is hardly likely this matter will induce any society to leave the "beaten track," in order to stipulate that flowers be exhibited as they are grown, and with no aids from art. *A. H.* [If a flower lack regularity, colouring, and outline, if it be poor in substance, no amount of dressing will make it a presentable object to place on any exhibition table; so that, as a matter of fact, only good flowers find favour even with the dressers. Ed.]

—— That there is some need of reform in the system of holding horticultural exhibitions there is little room for doubt, but it is much easier to point out existing evils than it is to suggest a practical remedy. Regarding the question of "dressing flowers," which "B." (p. 83) thinks should be abolished, I fail to see how this could be done without seriously interfering with the privileges of exhibitors. The same may be said regarding the exhibition of the same subjects at different shows; if this was objected to I think we should soon see the last of many of the best exhibitors, as it would not pay to spend a great deal time and trouble over subjects that were only to be brought into competition on one occasion; besides which, it would materially affect shows generally in the way of securing a good display. If I may be allowed to express an opinion on the subject I should say that there is equal merit in being able to put a distorted flower into shape, as there is in tying a plant out to the best advantage, and if one is to be done away with, the other must also, as it is quite evident that no restriction can be made as to who should perform the operation in either case. However, I think that these matters should be left entirely to the discretion of the judges. The question of dishonest exhibitors is a serious one, and I believe that the practice of exhibiting other people's productions has driven many a good honest exhibitor from the field; and if the committee were to do all in their power to put a stop to the practice, they would in the long run obtain better shows, and gain more support. *A.*

PHASEOLUS CARACALLA.—I observe a notice of the Phaseolus Caracalla. I should have suggested to your correspondent to add that that plant requires plenty of room for its roots, and strong dry peat for flowering. I have grown it for many years in my garden at Palermo. It flowered in the very hottest season when flowers were few. I grew it on a trellis and cut it down to within a foot or two of the ground when its seeds were ripe. It required no protection, but these points are hardly known. During the flowering I found it dependent on plenty of water to the roots. It will grow and flower in a pot, but very meagrely, whereas in the ground it is very vigorous. I should suggest that in England it should be planted, in good and deep soil, against the back wall of the greenhouse fully exposed to the sun; but I would also try a plant in a large pot, to be taken out of the house when the summer was well on, plunged in rich soil under a hot and sheltered wall, facilitating, if necessary, by an extra hole or two in the bottom of the pot, its spreading its roots in the ground. Thus treated, I believe it would flower out-of-doors in England. In the autumn it must be taken into the house and repotted, pruning the roots. I have followed this plan successfully here with a very beautiful Ipomœa, of which I wish I knew the name, which grows and flowers magnificently in Malta and Sicily, but which was killed by the frost the first winter I came here when left in the open ground. The next winter I kept it under glass (without heat) in a large pot, which I planted out in the spring against a wall, where it flowered as well as it does in the South: in the autumn I took up the pot, cut off the roots which had grown into the earth, and have put it in shelter for the winter. This would be a great acquisition to English gardens. The flower is large, of a deep purple, and grows in clusters, of which sometimes six or seven are open at the same time. *Tuscan.*

CERTIFICATES AT SOUTH KENSINGTON.—The remarks at p. 80 on the voting of the members of the Floral Committee for First-class Certificates ought to be seriously considered. As far as I can make out, there are no minutes taken of the floral meetings, and no record is kept of any comments made by members, which are sometimes of considerable importance. The meetings are of no practical value whatever to the members, simply because the Council does not use the staff they have to take a correct report of these meetings, although they are second in importance to none. I have maintained for years that a verbatim report should be taken and fairly written out, to be subsequently edited by some one competent to do so. In this report the number of votes recorded for and against every plant should be entered. Unless this is done, the Fellows, not to say the public, are misled. As an illustration, take a particular Chrysanthemum. No mention is made as to how many vote for or against the plant: the public is told that it is very valuable, and that it received the highest award given by the Society for new plants. A very different impression would prevail if the votes were published in this way:—"Chrysanthemum"—let us say "um" Anonyma—"First-class Certificate: ten members voted for it; eight against, and seven did not vote." Some account should be taken of the seven that did not vote at all, because if the plant had been a striking one, and was really worthy of a certificate, the seven would not have been listless [True, but the seven may not have considered themselves sufficiently "expert" to vote for or against. Ed.]. In some cases a plant has received a First-class Certificate by six voting for it and five against it, while half the members were indifferent and did not vote at all. In other cases nine or ten votes are recorded for a plant, no one voting against, although some of those who do not vote feel that the plant being thus certificated gets more than justice done to it. There are, and always will be, differences of opinion about the value of new and rare plants. As illustrating this, I may say I quite agree with the remarks about Korolkowia discolor, at p. 80, and was glad to see it recorded as having received a unanimous vote; but it is recorded in a contemporary in the following terms:—"An ugly name for an unlovely plant, which is scarcely showier than its relative, K. Suwarowi, which has been grown in gardens a long time. It may be considered interesting, but is scarcely a good garden plant." The reporter frankly records his opinion of the plant in question, and criticises it adversely, in the face of a "unanimous" vote. This is as it should be. A reporter is not sent to say ditto to the awards of any committee, however eminent. For my own part I believe he has not taken a correct estimate of the

plant; others may differ from me, as I do from him. Let us therefore have free discussion of the work of all the committees; but first and foremost, let a report be taken by one of the Society's secretaries. The Society has several, I believe, who never attend; doubtless because they have not been directed by the Council so to do. The Fellows look to the Council to set this matter right. A member of the Council is also chairman of the Floral Committee. He must be aware that the work is not efficiently performed. It is his duty, therefore, to report to his colleagues, and have this matter put right. As a Fellow of the Society, I have a real grievance. I ought to have the business of those meetings fully recorded in the *Journal* or *Transactions* of the Society; and if the Society is to hold its position in the future, this must be done. *F.R.H.S.* [We do not think, as a rule, it would be advisable to publish the discussion that takes place at the several committees, but we are strongly of opinion that the results of the deliberation, the names and numbers of the voters, should be published in full with as little delay as possible. ED.]

THE SO-CALLED PRIMULA ALTAICA.—By this I mean the large mauve variety of our common Primrose, which differs in its foliage from ordinary Primroses, and which was brought about fifteen years ago to the front—the gardens at Belvoir being its special habitation. I always thought it considerably different in foliage from the common Primrose, and that it exactly resembled the double white and double mauve—in short, that both these had sported from it. At the time it was mooted in the papers how the name altaica had become attached to it, seeing that the true altaica is an utterly different plant. I am not aware whether anybody referred at the time to *Paxton's Magazine of Botany* [vol. xvi., p. 194], in which there is a perfect representation of this Primrose—the same name, the same sized flower, the same lively green foliage. There it was that it erroneously got the name of altaica. The date is about 1847 to 1850, and its origin was that it was dug up in a field, growing in the grass, near Constantinople by Mr. Darbishire, and sent as a present to some friend in England. *Frank Miles, Shirehampton, Bristol.* [We append what is said of this Primrose in *Paxton's Magazine*, xvi., 194:—"This pretty species of Primula is quite new to British gardens, and was discovered and introduced by C. J. Darbishire, Esq., of Rivington, near Bolton, who, whilst on a late visit to Constantinople, found it growing on grassy land which had been recently cleared of brushwood, in the neighbourhood of Karak, a quarantine station on the Asiatic side of the Bosphorus, near the mouth of the Black Sea. As it was midsummer when he met with it, and being at that time out of bloom, he had no reason to suppose it to be anything more than our common yellow Primrose, until it flowered in the following spring. It is perfectly hardy, enduring our winter without injury; but as it appears to have a disposition to flower very early, when we have only cold and wet weather, Mr. Darbishire prefers taking the roots into the house at the latter end of the year; they then form beautiful and useful ornaments to the conservatory during the dark and dull season of winter, producing a profusion of bloom in succession from the end of October. The rich and delicate colours of the flowers are not fully displayed except in sunshine. The plant is of the easiest cultivation, either in a pot or in the open borders, merely requiring to be planted in a light rich soil, and must, when better known, become a universal favourite."]

SCOTLAND.

EDINBURGH BOTANICAL SOCIETY.

January 13.—The Society met this evening at 5, St. Andrew Square, Professor Dickson, President, in the chair.

The most interesting communications of the evening were those on the experimental planting of economic plants on the Shire Highlands, Eastern Africa, and their neighbouring lake. Mr. John Moir described his Coffee plantations as very successful, on the other hand Mr. Taylor read a letter from Mr. John Buchanan, in which he complained of an over-abundance of flowers, but few berries; on the other hand the Cinchona plantings by the latter were flourishing. The cultivation of Tea, which had been successful in Natal, was looked on as hopeful in the Shire Highlands.

Mr. T. A. G. Balfour contributed an obituary of Dr. Gilchrist, Dumfries, and Mr. Taylor one of the late C. W. Peach, A.L.S.

Mr. Galletly, Curator of the Edinburgh Museum of Science, contributed "Notes on the Kapia or Kauri Resin," with exhibition of specimens. [This article will be given in our columns shortly. ED.]

There were placed on the table a fine growing specimen, in flower, of Narcissus minimus, sent to the Royal Botanic Garden by Geo. Maw, Esq., and also a speciment in flower of N. moschatus.

ROYAL BOTANIC GARDEN, EDINBURGH.

The following is the report of the weather for December, 1886:—

"The weather of the past month has been of an exceedingly wintry character. The aggregate amount of frost registered has not been exceeded during any December since 1879.

"The thermometer was at or below the freezing point on 26 mornings, indicating collectively 174° of frost. During the corresponding month of 1885 frost was registered on 14 mornings, the collective amount being 111°. The lowest readings for last month were, on the 3d, 18°; 18th, 18°; 19th, 18°; 20th, 14°; 21st, 16°. The highest morning readings were, on the 5th, 40°; 6th, 42°; 9th, 37°; 16th, 35°. There were slight falls of snow and sleet throughout the month, the heaviest being on the 1st and 8th, but at no time was there enough to do any harm. The excessive fall of the barometer on the night of the 8th, when it reached the extremely low point of 27·668 inches, was happily unattended by any bad results in this district. Holly and other berries were eagerly devoured by birds, owing to the combined hardness of the ground and scarcity of other food: by the end of the month nearly all had disappeared. Not a single plant came into flower in the rock garden during December.

"The total number of species and well marked varieties of alpine and dwarf growing herbaceous plants which have flowered in the rock garden during the past year amounts to 1165. This is considerably below the number cultivated in the garden, as many of the rarer species fail to flower every year, but it gives a good idea of the large number of alpine plants which may be successfully grown in this country. A record has been kept showing the date when each plant was first observed in flower. The largest numbers flowered during June and July, viz., 300 and 281 respectively."

GLASGOW BOTANIC GARDENS.

The following is the monthly record of temperature, vegetation, &c., in the Botanic Garden, Glasgow, December, 1886:—

"The frost which set in at the close of last month has been more or less continuous; the thermometer was below 32° on ten days and twenty-eight nights. The lowest temperature registered was 14°, or 18° of frost, during the nights of the 19th and 20th respectively. The lowest day reading was 17°, or 15° of frost, on the 20th. This is the lowest day temperature recorded since the winter of 1880-81. The month throughout has been remarkable for extreme changes of weather and temperature; for instance, at 4 P.M. on the 20th 18° were registered, at 10 P.M. 14°, at 1 A.M. 10°, at 2 A.M. 16°, and by 9 A.M. on the 21st only 1°, a most singular variation within a few hours. We have frequently had all sorts of weather within an hour or two. Rain fell heavily during the night of the 21st and on the 22d, otherwise the fall of rain and sleet has been very light, and we have escaped the severe snow and other storms which have been so severely felt both north and south of us. Total night frost, 191°; total day frost, 29°; and twice at freezing-point."

SCOTTISH HORTICULTURAL ASSOCIATION.

WE briefly noticed in our issue of January 8, the following papers read at the meeting of the Scottish Horticultural Association of Edinburgh on the 4th inst.:—"The Genus Odontoglossum," by Mr. Grossart; and "The Present Position of Horticultural Building," by Mr. A. D. McKenzie.

In the discussion which followed Mr. Grossart's paper, the most interesting point that was raised related to the practice of shading, which was upheld by Mr. Grossart in his paper, and by Orchid growers generally, but appeared to Mr. Dunn and others to be the reverse of the treatment required by plants transferred from homes where brilliant sunlight reigned supreme, to the atmosphere of an Orchid-house in a climate like ours, in which fog and cloud were the rule and sunshine the exception. The conclusion arrived at appeared to be, that shading was necessary in order to avert evils not otherwise preventible; but the reasons were not so clearly elucidated. The paper was altogether an excellent one, and the discussion interesting. [If the reader will turn to our illustrated articles on the structure of Orchid leaves, he will find an explanation of why some Orchids do and other Orchids do not require shading, relatively, that is.

Mr. McKenzie, at the outset of his paper on Horticultural Building, glanced cursorily at the development of the horticultural building trade within the last fifty years. Comparing then with now the progress was marvellous. Then a few places only, belonging to the nobility and the richer landed gentry, could boast of anything like complete and perfect ranges of hothouses, as perfection was understood in these matters in those days. Now perfect and complete ranges of plant and fruit-houses were to be found attached to innumerable villas in the suburbs of our cities, while the larger establishments of the magnates of the land had increased in extent and been improved concurrently. The causes for this immense progress were not far to seek. The nation had prospered, and in its prosperity horticulture, and consequently horticultural building, had participated fully. The cheapening of glass by the removal of the duty thereon, the development and rapid improvement of heating by hot water in place of the clumsy and ungenial smoke-flue — these have all contributed to the impetus that has brought horticultural building as an art to the satisfactory position in which it is at the present time. It had not suffered like many other trades from the depression in trade that had so long prevailed — a fact, he thought, that attested to there being plenty of wealth in the country which only wanted tempting and safe outlets to bring it into circulation. He stated on a rough calculation which he believed to be under rather than over the mark, that the amount expended on glass erections for the productions of fruits and flowers would be about £40,000 per annum in Scotland alone during the last ten years. This calculation is based only on the aggregate of business done by the larger firms, no account having been taken of the considerable amount that must be turned over by the numerous smaller builders who supply cheap houses for the "million." He further traced the improvements that had been made—construction, ventilation, and heating of houses—and was glad to say these matters were still in a progressive state and likely to continue so. In conclusion he thought he was warranted in considering the horticultural building trade to be in a fairly prosperous condition. There followed an interesting discussion on fuels and other matters in connection with the paper, in which the practicability of using oil in general horticultural heating was considered, but we seem a long way off the realisation of that with its many obvious advantages.

Among the exhibits on the table were a fine sample of the ripe fructification of Cycas revoluta, from Messrs. R. P. Laird & Sons; and a spray of Prunus Pissardi, from Messrs. Dicksons & Co,

THE WEATHER.

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING JANUARY 29. (AVERAGE OF THIRTY-THREE YEARS.)

January 23	... ...	37°.9	January 27 ... ... 38°.6
,, 24	... ...	38°.3	,, 28 ... ... 38°.7
,, 25	... ...	38°.4	,, 29 ... ... 38°.8
,, 26	... ...	38°.5	Mean for the week ... 38°.4

THE PAST WEEK.

THE following summary record of the weather for the week ending January 17, is furnished from the Meteorological Office:—

The *Weather* has been very dull and gloomy generally, with a good deal of mist and fog. Rain, sleet, or snow fell during the earlier part of the period, and again as the week drew towards its close.

The *Temperature* has continued below the mean in

all districts; in 'Scotland, N.' the deficit has been only 1°, and in the E. and W. of Scotland, and in the S. of Ireland 3°, but over the greater part of England there has been a deficit of 6° or 7°. At Bawtry the average temperature for the week did not exceed 28°·4 (10° below the mean), and at Rothamsted 28°.7 (9° below the mean). The highest of the maxima, which were registered on irregular dates, ranged from 42° in 'England N.E.' and 'England E.' to 54° in 'Ireland S.' The lowest of the maxima, which were recorded at most stations on the 17th, varied from 11° in 'England E.,' 13° in 'England S.' and 14° in 'Scotland E.' and the 'Midland Counties' to 24° in 'Scotland N.' and 'Ireland S.' and 25° in the 'Channel Islands.'

"*Rainfall* has been rather less than the mean in nearly all districts.

"*Bright sunshine* has been very deficient; the percentages of the possible amount of duration in the 'wheat-producing' districts ranged from 3 in 'England S.' to 23 in 'England N.E,' and in the 'grazing' districts from 10 in 'England N.W.' to 27 in 'Ireland S."

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 42° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature.				
		Accumulated.			
	Above or below the Mean for the week ending Jan. 17.	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 4, 1887.	Below 42° difference from Mean since Jan. 4, 1887.
Principal Wheat-producing Districts.		Day-deg.	Day-deg.	Day-deg.	Day-deg.
0. Scotland, N. ...	1 below	3	31	− 10	+ 20
1. Scotland, E. ...	3 below	0	60	− 10	+ 49
2. England, N.E. ...	5 below	0	64	− 11	+ 61
3. England, E. ...	7 below	0	77	− 14	+ 68
4. Midland Cos. ...	7 below	0	81	− 19	+ 79
5. England, S. ...	6 below	0	42	− 20	+ 32
Principal Grazing, &c., Districts.					
6. Scotland, W. ...	3 below	0	43	− 17	+ 56
7. England, N.W. ...	6 below	0	57	− 17	+ 64
8. England, S.W. ...	5 below	1	38	− 33	+ 38
9. Ireland, N. ...	4 below	1	39	− 26	+ 50
10. Ireland, S. ...	4 below	9	37	− 30	+ 37
— Channel Islands	4 below	5	20	− 27	+ 22

Districts.	Rainfall.			Bright Sunshine.	
	More or less than the Mean for the Week.	No. of Rainy Days since Jan. 4, 1887.	Total Fall since Jan. 4, 1887.	Percentage of possible duration for the Week.	Percentage of possible Duration since Jan. 4, 1887.
Principal Wheat-producing Districts.	Tenths of Inch.		Ins.		
0. Scotland, N. ...	1 less	9	1.9	12	14
1. Scotland, E. ...	0 (aver.)	9	1.5	16	11
2. England, N.E. ...	2 less	11	1.4	23	16
3. England, E. ...	1 less	9	1.2	8	8
4. Midland Cos. ...	2 less	9	1.5	6	12
5. England, S. ...	3 less	8	1.2	3	12
Principal Grazing, &c., Districts.					
6. Scotland, W. ...	5 less	8	2.1	19	18
7. England, N.W. ...	4 less	9	1.4	10	10
8. England, S.W. ...	3 less	10	2.0	11	20
9. Ireland, N. ...	3 less	9	1.6	24	22
10. Ireland, S. ...	3 less	9	2.1	27	28
— Channel Islands	3 less	12	1.9	20	36

Obituary.

R. LAING.—Death has of late been busy in the ranks of veteran horticulturists. Twickenham, at which town Mr. Laing had been established in business for fifty years, he having taken possession of what was then Hopgood's Nursery in the March previous to Her Majesty's accession, has thus lost an old and respected inhabitant. Mr. Laing died on the 12th inst., in his seventy-eighth year, having been cotemporary with the Lees, Osbornes, Grays, Knight & Perry, &c. As a nurseryman he was known as a successful grower of Roses and hardy plants, and it was he who first exhibited the common Aucuba in fruit, the late Lord Kilmorey purchasing the first plant with berries for 10 guineas. As a member of the Twickenham and Richmond Horticultural Societies he did good work, and some of the members of these bodies, as a mark of respect to their late colleague, attended the funeral on Monday last. By Mr. Laing's death the Gardeners' Benevolent Institution loses a warm supporter. Mr. Laing, like many other successful nurserymen, was of Scotch extraction, and was a son-in-law of the late Mr. Adam Paul, of Cheshunt.

Enquiries.

"*He that questioneth much shall learn much.*"—Bacon.

Flowering Sweet Sultan.—I have been very unsuccessful in flowering the varieties of the Sweet Sultan. They will come up from seed, and the plants will die before coming into flower; is it a common complaint, their acting in this way? Perhaps you will kindly tell me, and also what is the best way of managing them so as to get them to blossom. *Corypheus.*

Notices to Correspondents.

TO THE TRADE.—Members of the Trade will oblige by sending notes of matters of Trade interest, Cultural or Commercial.

Intelligent Readers, do please Note.—*Letters relating to* Advertisements, *or to the supply of the Paper, should be addressed to the* Publisher, *and not to the Editor.*

*** All communications intended for publication should be addressed to the "*Editor.*" Such communications should be *written on one side only of the paper*, and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Photographs, &c.—The Editor will feel greatly obliged to any reader who will forward photographs or drawings of gardens, plants, or other subjects of interest.

Addenda: Primula Braids' Seedling shown by Mr. Braid, Winchmore Hill.—Owing to an oversight mention of this fine crimson variety with a distinct Auricula eye was omitted in our report of the show at the Royal Aquarium, Jan. 12. A First Class Certificate was awarded. Messrs. Suttons & Sons' Primulas on the same occasion were awarded a Silver Medal, and the same kinds were certificated, as obtained similar recognition at the Royal Horticultural Society's meeting on the previous day.

Artichokes: *E. F.* Your customer requires the best strain of the green globe and the purple. There are some seedling forms of both of these in commerce which are very inferior to the types. With plants raised from seed that is unavoidable; but no plants ought to be sent out—if from seed—before thoroughly testing them. With suckers from proved good strains it is unnecessary.

Books: *J. S.* We do not know the book you mention, but we recommend you to procure Warington's *Chemistry of the Farm* (Bradbury, Agnew & Co.), in which you will find what you want. Any bookseller will get the book for you.

Butchers' Broom: *Ruscus.* We will try to give some illustrations of the twe forms of flower. Your solitary plant may be fertilised by pollen from a neighbour's plant carried by insects; or it may, by exception, be self-fertilised. We have several plants in a suburban garden, all of which produce berries without any special attention—indeed none at all.

Cleome sesquiorgyalis: *Corypheus.* We do not know the plant you mention; the specific name implies that the plant is about nine feet high, thus sesqui, one and a half, orguia, a span of six feet.

Correction.—Messrs. Webb & Son, seed merchants, Wordsley, desire us to state that the amount of the Special Prizes given by them is from 3 guineas to 5*s*.

Early flowering Roses: *Market Gardener.* Niphebos, Saffrano Homère, Adam, Catherine Mermet, Mad Falcot, Souvenir de la Malmaison Bouton d'or, Devoniensis, Alfred Colomb, Duc de Rohan, Etienne Levet, Marie Bauman, La France, John Hopper, and Victor Verdier.

Geometrical Plans for Flower-beds, &c.: *C. W. Allen.* Mr. Henry Cannell, Home of Flowers, Swanley, Kent, publishes a number of these.

Grafting Hollies and Rhododendrons: *W. M.* The first-named are usually budded in June and July with plump well-developed buds of the current year. Grafting can be done just previous to growth commencing. The second are inarched in the summer in the open ground, or stocks of R. ponticum are saddle and whip grafted with better kinds in the months of July and August. When this is done the stock must be properly prepared by potting in the spring, and the grafted plants kept in a close frame inside a greenhouse till the union between stock and scion be completed.

Horticultural Shows, and—Something Worse: *R. B.* We fully sympathise with your views, but at the present moment we think it would be injudicious to publish your letter.

Lapageria Plant, Unhealthy: *H. B., Chelmsford.* If you will send again some leaves and other parts affected, we will have them examined microscopically, as the particulars which you furnished afford no clue to the cause of disfigurement.

Late flowering Chrysanthemums: *Market Gardener.* We cannot publish long lists of names; send to some specialist in Chrysanthemums for a list.

Lily of the Valley to bloom on April 10. *Young Gardener.* You could obtain flowers at the date named without any forcing, by merely affording the plants protection in a cool frame free from frost. The natural period of the flowering of this plant is the month of May. Gladiolus Colville can be kept growing all the winter with a little mild heat, but to flower well in the spring, rested bulbs, planted in November in boxes or pots would give the best results.

Lord Napier Nectarine: *W. G.* Flower-buds fall off from a variety of causes—such as dryness at the root (a very frequent cause, and often not suspected, because the surface soil may be moist), from sudden chills, caused by draughts of cold air, or from a too sudden fall of temperature in the house, and from want of terminal wood-buds. Before doing anything else, look to the border.

Maggots Infesting the Soil of Pots of Cyclamen, Begonias, Ferns, &c.: *Shamrock.* These are the maggots of some species of weevil, and are very destructive to plants, eating into the root-stock and committing other depredations. In the spring and summer months the weevils themselves—which are of various colours, brown to black—can be caught at night, whilst feeding, by going into a greenhouse with a lantern and suddenly turning the light on the plants infested. The insects become confused, and can be brushed off into some vessel and destroyed. You cannot catch the grubs, but by using soil free from the pupæ and maggots the pests can be reduced in numbers.

Moore Memorial Fund.—Subscriptions varying in amount from 2*s*. 6*d*. to £1 1*s*. have been received by Dr. Masters from different subscribers, viz., G. F. Wilson, J. Douglas, M. T. Masters, G. Maw, H. Bennett, Dr. Lowe, T. Baines, H. Walker, H. Herbst, H. M. Pollett, R. Dean, H. W. Ward, Robert Lindsay, Edinburgh, Shirley Hibberd, W. H. Baxter, Alexander Dean, F. Moore, G.

Jackman, and D. T. Fish. Promises of subscriptions have been also received from W. Paul, H. Veitch, Dr. Hogg, B. S. Williams, W. Bull, G. Deal, and P. Grieve. Further subscriptions should be sent to Mr. Harry Veitch, Chelsea, or to Dr. Masters, at the office of this journal.

MR. J. THORPE'S PRESENT ADDRESS: *S. C. Need.* Apply to the American Florist Company, Chicago, U.S.A.

NAMES OF PLANTS: *E. H., Leamington.* Two of your labels were detached on arrival. 2, is Polypodium Billiardieri, the other fruiting specimen is Blechnum occidentale, and the specimen without fruit is a Polypodium too young to name.—*W.* Probably Leucothoe Catesbæi, but it is difficult to determine from such a scrap.

PACKING FOR HOTWATER PIPE JOINTS: *F. S.* The substance you mention is slag from smelting furnaces reduced to a mass of coarse fibre, and might be mistaken for cotton. Slag is much used for rendering ceilings and walls fireproof, and also as packing and jacketing for hotwater and steam-pipes. You would be able to elicit an answer to your query by writing to the Editor of the *Builder.*

PRIMULA OBCONICA: *C. W. D.* The symptoms are those of arrest of growth and development, probably caused by some chill or other circumstance checking growth. We find neither insect nor fungi.

PRIMULAS: *R. Thompson.* Primula officinalis is the Cowslip. P. vulgaris is the common yellow Primrose.

SPARY FUND. — The following amount has been received from Mrs. K., Bateman Street, Cambridge: £2 2*s.*, and transmitted to Mr. Spary,

WEATHER: *A. H.* The mean temperature for the week as given is the average mean temperature of forty-three years at Chiswick, and not the mean temperature of any particular week.

WORK ON LANDSCAPE GARDENING: *J. J. G.* The best of the more modern works in the English language is Kemp's *How to Lay out a Garden.*

CATALOGUES RECEIVED.

JAMES DICKSON & SONS, 32, Hanover Street, Edinburgh, N.B.—Vegetable and Flower Seeds.
JAS. WM. MACKEY, Dublin—Seed Catalogue and Amateur's Guide.
KENT & BRYDON, Darlington—Seed Guide.
W. B. HARTLAND, 24, Patrick Street, Cork, Ireland—Year Book of Seeds.
WILLIAM FELL & Co., Hexham—Trade and Spring Seed Guides, 1887.
W. PIERCY, 89, West Road, Forest Hill, London, S.E.—Chrysanthemums.
ARTHUR ROBINSON, 8, Leadenhall Street, London, E.C.—Vegetable, Flower and Farm Seeds.
JOHN PERKINS & SON, 52 Market Square, Northampton—Vegetable and Flower Seeds.
WILLIAM RUMSEY, Joynings Nursery, Waltham Cross, London, N.—Seeds and Potatos.
BEN REID & Co., Guild Street, Aberdeen, N. B.—Spring List, 1887.
WILLIAM STRIKE, 62, High Street, Stockton-on-Tees—Vegetable and Flower Seeds.
JAMES MORGAN, 3, Moss Street, Paisley, N.B.—Garden and Flower Seeds.
HOWDEN & Co., Muirtown, Inverness, N.B.—Vegetable and Flower Seeds.
THOMAS DAVIES & Co., Wavertree Nursery, Liverpool—Vegetable and Flower Seeds.
AUSTIN & M'ASLAN, 16, Buchanan Street, Glasgow, N.B.—Seeds and Utensils.
HOGG & WOOD, Coldstream and Dunse, N.B.—Seeds.
JAMES MEREDITH, Golden Square, Market Place, Warrington—Vegetable and Flower Seeds.
WILLIAM SHAND, New Street, Lancaster—Garden Seeds.
FOWLER & SON, Vale of Mowbray Nurseries, Bedale—Garden Seeds.
CARDNO & DARLING, 80, Union Street, Aberdeen—Vegetable and Flower Seeds.
ORMISTON RENWICK, Melrose, N.B.—Vegetable and Flower Seeds, &c.
DOBIE & MASON, 66, Deansgate, and 22, Oak Street, Manchester—Garden and Farm Seeds.
T. S. WARE, Hale Farm Nurseries, Tottenham, London—Flower Seeds, Gladioli, &c.
THOS. SIBBALD, Market Place, Bishop Auckland—Kitchen Garden and Flower Seeds.
WOOD & INGRAM, Huntingdon and St. Neots—Vegetable and Flower Seeds.
GIBSON & REID, 14, Lower Ormond Quay, Dublin—Vegetable and Flower Seeds.
W. DRUMMOND & SONS, 58, Dawson Street, Dublin—Vegetable and Flower Seeds.
FISHER, SON, & SIBRAY, 4, Market Street, Sheffield, and 39, Church Street, Rotherham—Kitchen Garden and Flower Seeds.
W. SAMSON & Co. and W. T. SAMSON, Kilmarnock, N. B.—Seeds, Plants, &c.
T. KENNEDY & Co., Dumfries, N.B.—Vegetable and Flower Seeds.
LISTER KERSHAW, Brighouse, Yorkshire.—Vegetable and Flower Seeds.
JAMES COCKER & SONS, Sunnypark and Morningfield, Aberdeen, N.B.—Vegetable and Flower Seeds.
THYNE & PATON (late JOHN STEWART & SONS), 18 and 20 Union Street, Dundee, N.B.—Vegetable and Flower Seeds.
MICHAEL CUTHBERTSON, Public Park Nursery, Rothsay, N.B.—Garden and Flower Seeds.
LUCOMBE, PINCE & Co., Exeter.—Vegetable and Flower Seeds.

COMMUNICATIONS RECEIVED.—Ruscus.—C. W. D.—G. J.—W. B.—P. B.—C. B. S., Jersey.—T. S., Newry (with many thanks).—G. H.—W. Wood & Son.—Messrs. Sutton.—Messrs. Carter & Co.—Messrs. Cannell.—G. J.—W. B.—W. K.—W. B. H.—An Old Subscriber.—T. F. (a paper on Willows will appear next week.—C. F.—H. G. Reichenbach. R. D.—K. A. R.—H. S.—J. C.—T. C.—G. N.—Rosa.—J. H. H.—J. J. W.—J. S.—L'Allegro.—C. F. Broughton.

MARKETS

COVENT GARDEN, January 20.

[The subjoined reports are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list weekly, and are responsible for the quotations. It must be remembered that these quotations are averages for the week preceding the date of our report. The prices fluctuate, not only from day to day, but often severol times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the prices at any particular date, still less can they be taken as guides to the price in the coming week. ED.]

TRADE very quiet. No alterations; supplies good.
James Webber, Wholesale Apple Market.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz.	6 0–18 0	Ficus elastica, each	1 6– 7 0
Arum Lilies, dozen	18 0–24 0	Ferns, in variety, per dozen	4 0–18 0
Azaleas, per dozen	24 0–42 0	Foliage plants, various, each	2 0–10 0
Begonias, per dozen	6 0–12 0	Hyacinths, 12 pots	9 0–12 0
Bouvardias, doz.	9 0–12 0	Marguerite Daisy, per dozen	6 0–12 0
Cyclamens, dozen	12 0–24 0	Myrtles, per dozen	6 0–12 0
Cyperus, per dozen	4 0–12 0	Palms, in var., each	2 6–21 0
Dracæna terminalis, per dozen	30 0–60 0	Pelargoniums, scarlet, per doz.	6 0– 9 0
— viridis, per doz.	12 0–24 0	Poinsettias, dozen	12 0–18 0
Epiphyllum, dozen	18 0–30 0	Primula sinensis, per dozen	4 0– 6 0
Erica gracilis, doz.	9 0–12 0	Solanums, per dozen	9 0–12 0
— hyemalis, doz.	12 0–24 0	Spiræa, per dozen	12 0–24 0
— various, dozen	9 0–24 0	Tulips, 12 pots	6 0– 8 0
Euonymus, in var., per dozen	6 0–18 0		
Evergreens, in var., per dozen	6 0–24 0		

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Arum Lilies, 12 blms.	5 0– 8 0	Poinsettias, per 12 sprays	4 0– 8 0
Azaleas, 12 sprays	0 9– 1 6	Primulas, single, 12 bunches	4 0– 6 0
Bouvardias, per bun.	0 6– 1 0	Roses, Tea, per doz.	2 0– 4 0
Camellias, 12 blooms	2 0– 4 0	— coloured, dozen.	3 0– 6 0
Carnations, 12 blms.	1 0– 3 0	— red, French, doz.	2 6– 3 6
Eucharis, per dozen	4 0– 8 0	— Saffrano, Fr. doz.	1 6– 3 0
Gardenias. 12 blooms	12 0–24 0	Tropæolums, 12 bun.	1 0– 2 0
Heliotrope, 12 spr.	0 6– 1 0	Tuberoses, 12 blms.	1 0– 2 0
Jasmine, white, bun.	0 6– 0 9	Violets, 12 bunches	1 6– 2 0
Lilies of the Valley, 12 sprays	1 0– 1 6	— Parme, French, per bunch	7 6– 8 6
Marguerites, per 12 bunches	3 0– 6 0	— Czar, Fr., bunch	2 0– 3 0
Mignonette, 12 bun.	3 0– 6 0		
— scarlet, 12 trusses	0 6– 1 0		

VEGETABLES—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, per doz.	6 0– ...	Lettuce, per dozen	1 0– 1 6
Asparagus, French, per bundle	1 0– ...	Mushrooms, punnet	1 6– 2 6
— English, per 100	12 0– ...	Mustard and Cress, punnet	0 4– ...
Beans, Kidney, lb.	1 6– ...	Onions, per bushel	4 0– ...
Beet, red, per dozen	1 0– 2 0	Parsley, dozen bunch	4 0– ...
Brussels Sprouts, lb.	0 4– ...	Potatos, per cwt.	4 0– 5 0
Carrots, per bunch	0 6– ...	,, kidney, per cwt.	4 0– 5 0
Cauliflowers, per doz.	3 0– ...	Rhubarb, per bundle	0 6– ...
Celery, per bundle	1 6– 2 0	Seakale, per punnet	2 0– ...
Cucumbers, each	0 6– 1 0	Shallots, per lb.	0 3– ...
Endive, per dozen	1 0– 2 0	Spinach, per bushel	4 0– ...
Green Mint, bunch	1 0– ...	Sprue, bundle	1 0– ...
Herbs, per bunch	0 4– ...	Tomatos, pet lb.	1 0– 1 6
Leeks, per bunch	0 3– ...	Turnips, bunch	0 4– ...

POTATOS.—Regents, 80*s.* to 100*s.*; Magnums, 70*s.* to 90*s.* per ton.

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apple, ½-sieve	1 6– 3 6	Lemons, per case	12 0–21 0
— Nova Scotia, brl.	8 0–12 0	Pears, per dozen	2 0– 4 0
Grapes, per lb.	1 0– 2 6	Pine-apples, Eng., lb.	1 0– 1 6
Kent Cobs, 100 lb.	65 0 70 0	— St. Michael. each	1 6– 6 0

SEEDS.

LONDON: *Jan.* 19.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., write that there is an increasing activity in the trade for farm seeds. The arrivals of Clover seeds from America are almost *nil*, whilst Germany has apparently nothing to spare; consequently, for English reds more money is asked, and foreign samples are also held at full rates. French-Italian Ryegrass exhibits a further advance. There is no variation in the values of White Clover, Trefoil, or Alsike. There is an improved request for Blue Boiling Peas. Hemp and Canary seed sold slowly at late quotations.

CORN.

Averages.—The following is an official statement showing the average price of British corn, imperial measure, as received from the inspectors and officers of Excise, in the week ended January 15:—Wheat, 36*s.* 3*d.*; Barley, 26*s.* 8*d.*; Oats, 17*s.* 4*d.* For the corresponding week in 1886:—Wheat, 29*s.* 10*d.*; Barley, 28*s.* 11*d.*; Oats, 18*s.* 5*d.*

POTATOS.

BOROUGH AND SPITALFIELDS: *Jan.* 18.—Supplies were moderate, and prices steady as follows:—Regents, 90*s.* to 120*s.*; Magnum Bonums, 80*s.* to 95*s.*; Champions, 70*s.* to 85*s.*; and German Reds, 70*s.* to 80*s.* per ton.

COLUMBIA (EAST LONDON): *Jan.* 19.—York and Lincoln Magnums, 55*s.* to 75*s.*; do. Regents, 55*s.* to 60*s.*; Essex Magnums, 55*s.* to 80*s.*; do. Regents, 55*s.* to 80*s.*; Cambridgeshire Magnums, 55*s.* to 90*s.*; do. Regents, 50*s.* to 70*s.* per ton.

STRATFORD: *Jan.* 18.—Scotch Magnums, 85*s.* to 100*s.*; Best Magnums, 57*s.* to 75*s.*; Fenland do., 55*s.* to 65*s.* per ton.

Imports.—The imports into London last week consisted of 804 bags from Ghent, 12 Hamburg, and 40 sacks from Boulogne.

HAY.

The following are the average of the prices obtained at the Metropolitan markets during the past week:—Clover, prime, 90*s.* to 102*s.* 6*d.*; inferior, 70*s.* to 84*s.*; hay, prime, 70*s.* to 90*s.*; inferior, 30*s.* to 65*s.*; and straw, 28*s.* to 42*s.* per load.

FRUIT AND VEGETABLES.

COLUMBIA (EAST LONDON): *Jan.* 19.—Vegetable trade very quiet, good supplies, and prices low. Fruit trade good, moderate supplies. Quotations:—Apples, 4*s.* to 7*s.* per bushel; Pears (stewing), 3*s.* to 4*s.* 6*d.* do.; Beetroots, 4*d.* to 6*d.* per dozen; Savoys, 3*s.* to 5*s.* per tally; Cabbages, 2*s.* 6*d.* to 3*s.* do.; Brussels Sprouts, 1*s.* 6*d.* to 2*s.* per half sieve; Greens, 1*s.* to 2*s.* per dozen bunches; Turnips, 1*s.* 6*d.* to 2*s.* 6*d.* do.; Carrots, 1*s.* 6*d.* to 2*s.* do.; Celery, 6*d.* to 1*s.* per bundle; Onions, 4*s.* 6*d.* to 5*s.* per cwt.; Carrots, 20*s.* to 32*s.* per ton; Mangolds, 14*s.* to 17*s.* do.

STRATFORD: *Jan.* 18.—There has been a good supply of produce, and a fair trade. Quotations:—Savoys, 3*s.* to 5*s.* 6*d.* per tally; Turnips, 2*s.* to 2*s.* 6*d.* per dozen bunches; ditto, 35*s.* to 45*s.* per ton; Carrots, household, 25*s.* to 30*s.* do.; ditto, cattle feeding, 18*s.* to 21*s.* do.; Parsnips, 4*d.* to 1*s.* 2*d.* per score; Mangolds, 14*s.* to 17*s.* 6*d.* per ton; Swedes, 18*s.* to 20*s.* do.; Onions, 80*s.* to 100*s.* do.; Apples, Wellingtons, 6*s.* to 7*s.* per bushel; Celery, 10*d.* to 1*s.* per roll.

GRAND LEEK COMPETITION.

First Prize, £5.

IN order to make our Great Exhibition LEEK (the Lyon) still more widely known, we have decided to offer the above Prize to the grower of the best Six Specimens. The competition will take place on November 4, 1887, and is open to all without fee or entry money. A card will be sent with every 1*s.* 6*d.* packet of Seed supplied by us to those who signify at the time of ordering their intention to compete. For full information see our AMATEURS' GARDENING GUIDE for 1887, gratis and post-free.

STUART AND MEIN, Kelso, Scotland.

GRATIS. POST-FREE.

A JUBILEE PRESENT.

"YE LITTLE BOOKE FOR YE GARDEN,"

Price Sixpence.

Containing Original Sketches, Concise Cameos, and a useful Calendar of Operations in Horticulture.

W. WOOD & SON, F.R.H.S.,
Horticultural Specialists,
WOOD GREEN, LONDON, N.,

Beg to announce that their NEW ANNUAL for 1887 will be sent gratis to
EVERY READER OF THIS PAPER,
and to all Customers and Friends who will kindly forward their address.

PEACHES AND NECTARINES

FOR FORCING.

FINE TREES, in pots, of the most approved kinds, well furnished with fruit buds, price 5*s.*, 7*s.* 6*d.*, and 10*s.* 6*d.* each.

CATALOGUES Post-free.

THOMAS RIVERS & SON,
SAWBRIDGEWORTH, HERTS.

DOBBIE'S DESCRIPTIVE CATALOGUE AND COMPETITORS' GUIDE

Is the most useful and unique production of the kind in the Trade.

It contains full particulars and prices of all the Selected Flower and Vegetable Seeds for which Messrs. Dobbie & Co. are so well known.

It contains descriptive Priced Lists of all the leading varieties of Pansies, Roses, Dahlias, Phloxes, Carnations, Gladioli, Lilies, &c., &c.

It contains tabulated results of the Pansies, Dahlias, and Roses which were shown in the Prize Stands at the leading Exhibitions in the United Kingdom during 1886.

It contains Original Articles on the Successful Cultivation of Flowers and Vegetables generally, and Special Articles on Pansies, Roses, Dahlias, Carnations, Phloxes, Marigolds, Asters, Annuals, Leeks, Onions, Celery, Parsley, Parsnips, Peas, &c.

We are only induced to advertise as above because we found last season that our Catalogue was being most unscrupulously copied and imitated.

The Catalogue and Guide can only be had direct, and early application is necessary.

DOBBIE & CO.,
Seed Growers and Florists, Rothesay.

CHOICE FLOWER SEEDS.

NEW CATALOGUE of **88 pages**, consisting exclusively of **FLOWER SEEDS**, in which everything is fully described, and many **illustrated.** The Catalogue contains no less than

100 well-executed Engravings.

A large portion of these, like the plants they illustrate, are original, and to be found in this Catalogue only. Can fairly claim to be one of the most complete Catalogues of Flower Seeds ever published.

Copies may be had gratuitously and post-free upon application to

THOMAS S. WARE,
HALE FARM NURSERIES,
TOTTENHAM, LONDON.

THE BEST NEW CULINARY PEAS for 1887 are
ECKFORD'S "MAGNIFICENT."
ECKFORD'S "VICTOR."
ECKFORD'S "DIGNITY."

ECKFORD'S NEW PEAS are supplied in SEALED PACKETS ONLY. See descriptions in NEW SEED CATALOGUE, post-free on application.

WILLIAM BULL, F.L.S., Establishment for New and Rare Plants and Seeds, 536, King's Road, Chelsea, London, S.W.

Grape Vines and Strawberries (in pots).

FRANCIS R. KINGHORN offers very fine stocks of the above in all leading varieties, true to name. LIST and Prices on application.

Sheen Nurseries, Richmond, Surrey.

Single Roses.

GEO. COOLING AND SONS offer strong Plants of the following interesting and beautiful varieties:—BERBERIFOLIA HARDII, 2*s.* each; CAMELLIA JAPONICA, 2*s.* each; COPPER AUSTRIAN BRIER, 1*s.* each; MACARTNEY SIMPLEX, 1*s.* 6*d.* each; PAUL'S SINGLE CRIMSON, 1*s.* 6*d.* each; PAUL'S SINGLE WHITE, 1*s.* 6*d.* each; POLYANTHA, 1*s.* 6*d.* each; RUGOSA, 1*s.* 6*d.* each; RUGOSA ALBA, 2*s.* each; ROSA ECÆ, 2*s.* each; YELLOW AUSTRIAN BRIER, 1*s.* each.

The set of Eleven Varieties, carriage free, 16*s.* 6*d.*

Full descriptions in our ROSE CATALOGUE, gratis and post-free. The Nurseries, Bath.

Mangel Wurzel and Turnip Seeds.

H. AND F. SHARPE are now prepared to make special offers of home-grown MANGEL WURZEL and TURNIP SEEDS, raised in 1886 from specially selected Bulbs. The quality is excellent and the prices are very low.

Seed-producing Establishment, Wisbech.

Special Offer.

SEAKALE PLANTS.—Strong, 40*s.* per 1000; will produce some good Kale. Good Planting, No. 1, 25*s.* per 1000; No. 2, 20*s.* per 1000. Packing and free on rail. Cash with orders. R. LOCKE, Wrotham, Kent.

HARDY RHODODENDRONS and AZALEAS.—The most extensive stock in the Kingdom of the finest hardy varieties known.

☞ The Rhododendrons in Rotten Row and the Botanic Gardens, Regent's Park, are supplied by
ANTHONY WATERER, Knap Hill Nursery, Woking, Surrey.

CHRYSANTHEMUMS. — New Descriptive CATALOGUE of all the New and Choice Varieties considered worth cultivation, with Cultural Directions. 750 varieties in stock. Post-free 3*d.*

ROBERT OWEN, Floral Nursery, Castle Hill, Maidenhead.

MY NEW CATALOGUE of the CHOICEST GERMAN FLOWER SEEDS is now being issued; copies may be had Gratis and Post-free on application.

FRED. ROEMER, Seed Grower, Quedlinburg, Germany.

Finest Quality, Extra Cheap.

MORLE AND CO. offer:—
AZALEA INDICA, full of flower-buds, 15*s.*, 21*s.*, and 30*s.* per dozen.
CAMELLIAS, full of flower-buds, 18*s.*, 24*s.*, to 36*s.* per dozen; specimens, 5*s.* to 15*s.* each.
RHODODENDRONS, finest named, 18*s.* to 30*s.* per dozen.
DEUTZIA GRACILIS, extra strong, 6*s.* per dozen.
SPIRÆA JAPONICA, extra strong, 4*s.* per dozen.
LILY of the VALLEY, extra strong Berlin Crowns, 6*s.* per 100.
TUBEROSES, Double African and American Pearl. Largest and cheapest stock in the Trade. See Special LIST. Trade Supplied.

MORLE AND CO., 1 and 2, Fenchurch Street; and at Child's Hill Farm Nursery, Finchley Road, N.W.

CLEARANCE SALE of Healthy PALMS for Table and Conservatory Decoration.—LATANIA BORBONICA, SEAFORTHIA ELEGANS, PHŒNIX RECLINATA, and PHŒNIX TENUIS, 12 inches high, 6*d.* each, 4*s.* per dozen, 25*s.* per 100; same kinds, 20 inches high, 1*s.* 6*d.* each, 6 for 8*s.*, 12 for 14*s.* Package and delivery free.

COCOS WEDDELLIANA, KENTIAS, ARECA LUTESCENS, and EUTERPE EDULIS, 2*s.* to 5*s.* each. Large PALMS, 3 feet to 6 feet high, 5*s.* to 50*s.* each, all of splendid value.

GARDENER, Holly Lodge, Stamford Hill, London, N.

FRUIT TREES. — Standard two-year and Maiden PLUMS, Standard two-year and Farleigh DAMSONS, Dwarf-trained PEACHES, APRICOTS, and Morello CHERRIES, &c. Price on application to

FLETCHER BROS., The Nurseries, Ottershaw, Chertsey, Surrey.

EIGHTY THOUSAND CLEMATIS, in Pots, of all the finest Double and Single Varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12*s.* to 24*s.* per dozen, strong plants. Descriptive LIST on application.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

FLOWERING SHRUBS.—LILAC, MOCK ORANGE, WEIGELA, ALMOND, ALTHEA, BERBERIS, CHERRY, CYTISSUS, HYDRANGEA, HYPERICUM, MEZEREUM, RIBES, SPIRÆA, RHUS, VIBURNUM, &c.; 8*s.* per dozen, 50*s.* per 100. Descriptive LIST free.

RICHARD SMITH AND CO., Nurserymen, Worcester.

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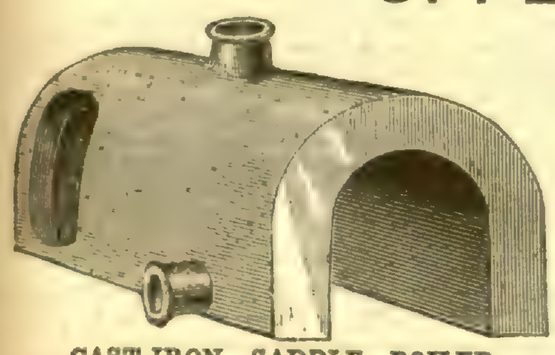

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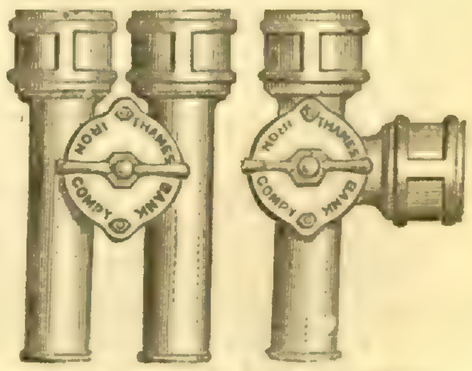

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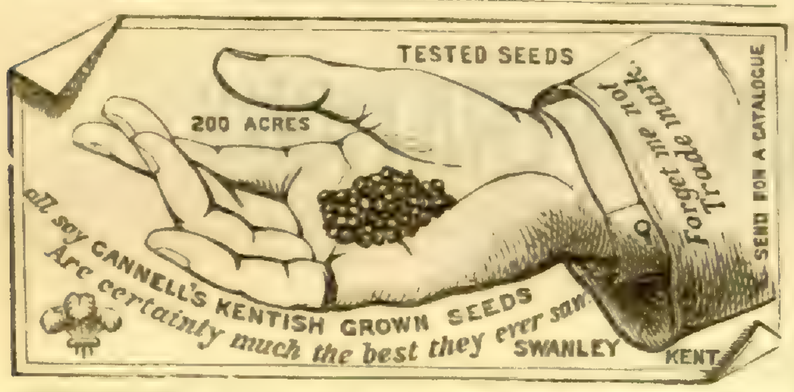

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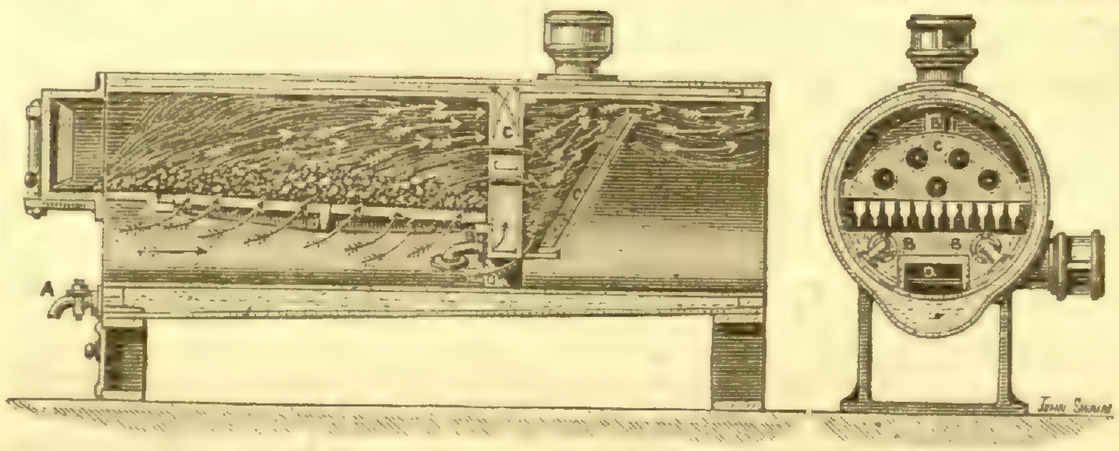

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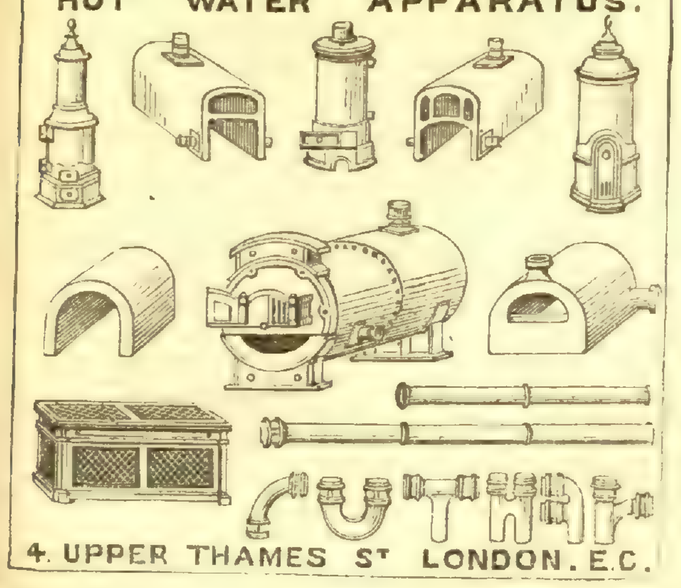

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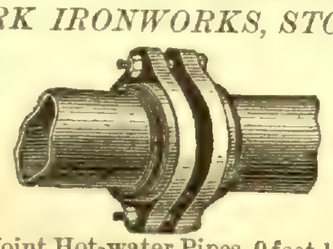

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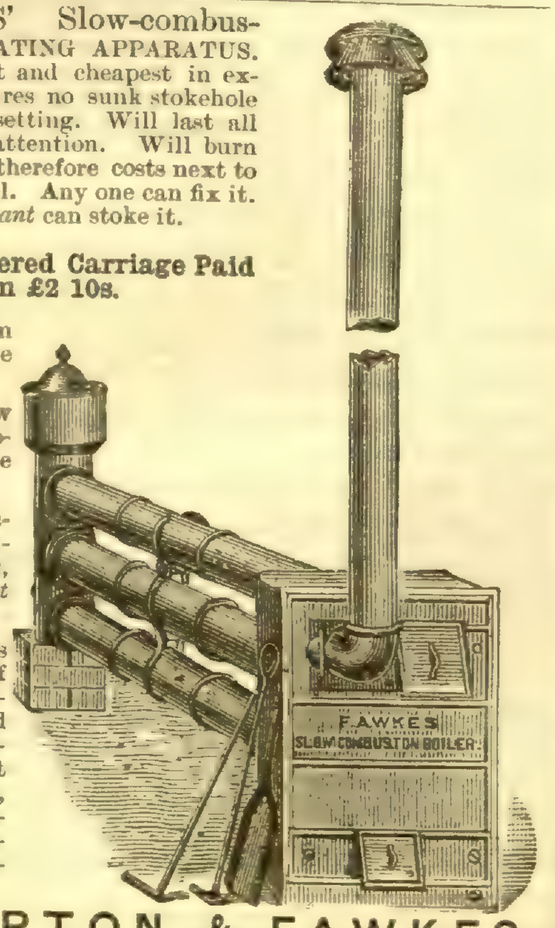

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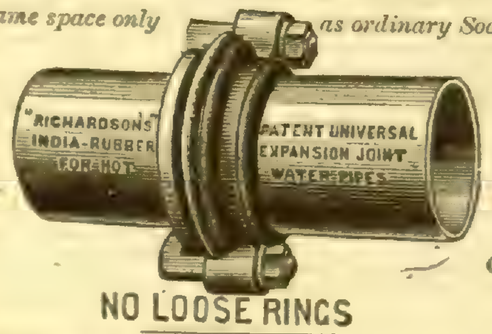

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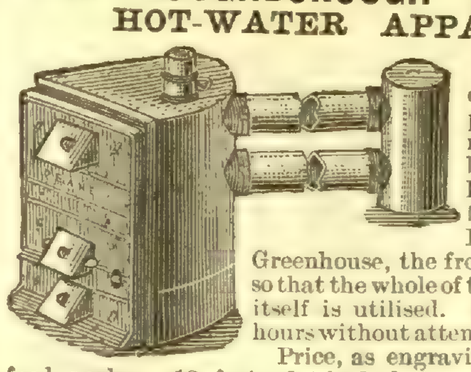

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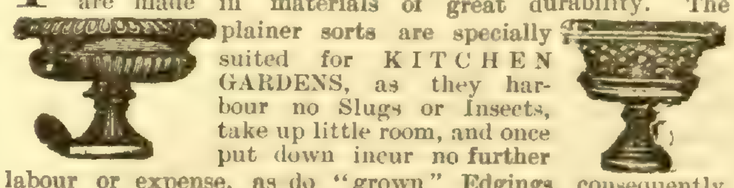

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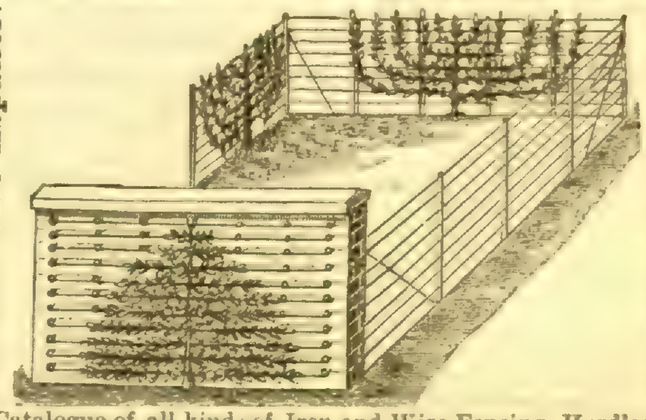

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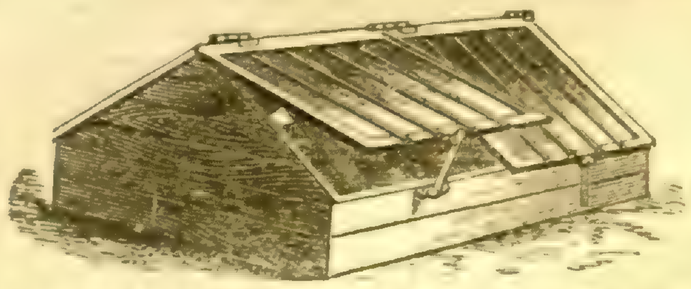

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GARDENER (HEAD); age 29.—Mr. TEGG, Bearwood Gardens, Nottingham, can with every confidence recommend his Foreman (T. Stacey) to any Nobleman or Gentleman requiring a thorough practical man. Fifteen years' experience—three in present place. Previously in the gardens of Heckfield, Blenheim, and Lockinge.—For further particulars please address as above.

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GARDENER (HEAD WORKING).—A thorough skilled man of twenty years' experience, including Orchids. Fully competent to take the Management of a good Establishment. Recommended.—G. R., Ivy House, Balham Hill.

GARDENER (HEAD WORKING).—Age 27, married, no family. Energetic and competent; thoroughly understands Early and Late Forcing, Stove and Greenhouse Plants, Growing of Fruit, &c. Highly recommended by last and previous employers.—C. ENSOLL, 3, St. George's Lane, Worcester.

GARDENER (HEAD WORKING).—Age 27, married when settled in permanent place; thorough, practical, and energetic, well versed in the general routine of good Gardening, inside and out; highest references as to character and abilities. Disengaged when suited.—A. HILL, Southlands, Tandridge, Godstone, Surrey.

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GARDENER (HEAD), or GARDENER and BAILIFF.—Age 36, married; eighteen years' experience, ten years as Head. Thoroughly practical in every Branch of Gardening; also with Land and Stock.—H., 4, Cricklade Street, Swindon.

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FOREMAN (good), to any Gardener in want of a highly trustworthy man with good knowledge of the profession.—H. MARKHAM, Mereworth Castle Gardens, Maidstone, will be pleased to answer enquiries respecting his present Foreman, T. Lucas, who has been with him three years.

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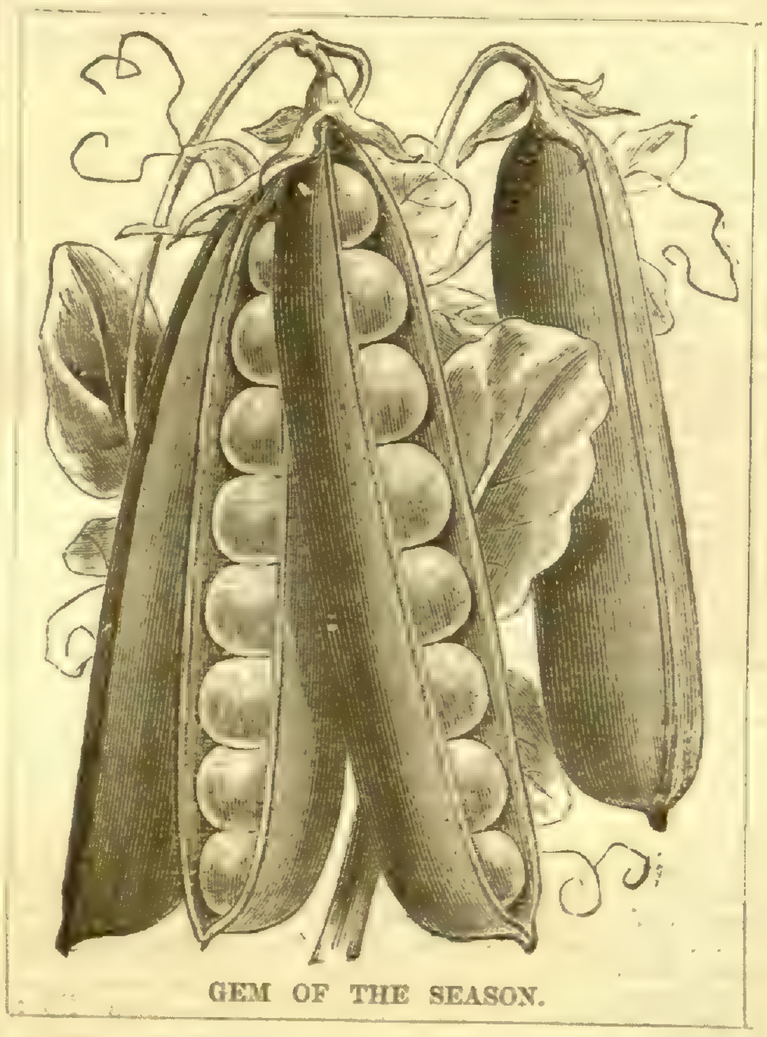

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CONTENTS.

Apiary, the 144
Appliances, new 152
Auriculas, outdoor ... 141
Books—
Text-book of British Fungi 149
Tithes: History, &c.... 149
Canadian plants 148
Cantor lectures 147
Catasetum Bungerothii... 139
Chrysanthemums, single 153
,, the rival Ethels ... 153
Dendrobium strebloceras 140
Fruit growing 146
Fruits under glass ... 152
Gardeners, education of . 148
Gardening appointments 162
Ginger-beer plant ... 148
Hardy fruit garden ... 144
Insects and frost 148
Jubilee proposals ... 147
Kauri resin 150
Kew 147
Kitchen garden, the ... 154
Luculia gratissima ... 152
Masdevallia pusiola ... 140
Mina lobata 153
Obituary—
W. Wootten-Wootten . 155
Orchid-houses, the ... 154
,, notes and gleanings 145
Orchids, Mr. Tautz's ... 143
Oxalis catharinensis ... 140
Pears, a selected list of... 150
Peas, early 153
Picotee, origin of the word 152
Presentation to Mr. Lock 148
Primula Stuartii... ... 152
Royal Horticultural Society 147
Royal Horticultural Society Committees, the decisions of the ... 153
Ruellia affinis 145
Societies—
Hull and East Riding Chrysanthemum ... 154
Storm, the late 153
Tillandsia reticulata ... 140
Trent Park, Barnet ... 141
Vegetable tissues, stimuli 147
Weather, the 155
Willow growing 144

ILLUSTRATIONS.

Catasetum Bungerothii, see Supplement, and 142
Cypripedium Boissierianum 143
Pear Beurré Clairgeau 151
,, ,, d'Anjou 150
,, ,, Superfin 150
,, Marie Louise d'Uccle 151
Thanatophore, Williams' 152
Watering can, Hawe's 153

ROYAL HORTICULTURAL SOCIETY,
South Kensington, S.W.

The ANNUAL GENERAL MEETING of the Royal Horticultural Society will be held in the East Crush-room, Royal Albert Hall (entrance N.E. Orchard-house, Exhibition Road) on TUESDAY, February 8, at 3 P.M.

To receive the Report of the Council and of the Auditors. To retire from the Society certain Fellows, under the provisions of Bye-Law 22. To elect Candidates for Fellowship, and other business.

N.B.—As this is an important Meeting, Fellows are earnestly requested to attend.

GRAND FLORAL FETE, YORK. JUNE 15, 16, and 17. PRIZES, SIX HUNDRED POUNDS, including Special Prizes for Orchids, £84; Roses, £120; Fruit, £60, and a Veitch Memorial Medal; Pelargoniums, £115, &c. Schedules on application to

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W. AND J. HODSOLL, Hon. Secs.

RICHMOND (Surrey) HORTICULTURAL SOCIETY.
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MR. J. C. STEVENS will SELL the above by AUCTION, at his Great Rooms, 38 King Street, Covent Garden, on MONDAY NEXT, January 31, at half-past 12 o'Clock precisely.

On view morning of Sale, and Catalogues had.

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Consignments of choice named AZALEA INDICA, A. MOLLIS, CAMELLIAS, PALMS, hybrid RHODODENDRONS, DRACÆNAS, LAURUSTINUS, and other PLANTS from Ghent; Standard and Dwarf ROSES, including all the leading varieties; FRUIT TREES, of sorts. ORNAMENTAL SHRUBS and CONIFERS, BORDER PLANTS in variety; BULBS, &c.

MR. J. C. STEVENS will SELL the above by AUCTION at his Great Rooms, 38, King Street, Covent Garden, on WEDNESDAY and SATURDAY NEXT, February 2 and 5, at half past 12 o'Clock precisely each day.

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MR. J. C. STEVENS begs to announce that his next special SALE of ORCHIDS in FLOWER and BUD will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, February 16, and he will be glad if Gentlemen desirous of entering Plants for this Sale will send particulars as soon as possible.

Thursday Next.—(Sale. No 7339.)
CATTLEYA LAWRENCEANA.
ODONTOGLOSSUM CIRRHOSUM.
ONCIDIUM LOXENSE.
" MACRANTHUM HASTIFERUM.

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DENDROBIUM BRYMERIANUM.

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Sunbury.—Tuesday Next.

UNRESERVED CLEARANCE SALE, by order of Mr. H. Willmer, who is absolutely relinquishing the business.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, The Springfield Nursery, Sunbury (close to the Railway Station), on TUESDAY NEXT, February 1, at 12 o'Clock precisely, the whole of the well-grown NURSERY STOCK, in capital condition for removal, including 1500 Common Laurels, 2 to 4 feet; 500 Green Hollies, 2 to 6 feet, very fine; Horse Chestnuts, 6 to 18 feet; 500 Lombardy Poplars, 3 to 16 feet; Aucubas, Spruce Firs, Conifers in variety, 1000 Tritoma uvaria, 1500 Gentiana acaulis, and other stock.

Now on view. Catalogues had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, E.C., and Leytonstone.

N.B.—The GREENHOUSES and PLANTS will be SOLD at a LATER DATE.

Every Wednesday and Saturday.

SALES of GREENHOUSE PLANTS in variety, a choice Assortment of English Home-grown LILIES, 600 Standard and Dwarf ROSES to name, FRUIT TREES, CARNATIONS, LILY of the VALLEY, LILIUM AURATUM, and various HARDY BULBS and HERBACEOUS PLANTS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., EVERY WEDNESDAY, at half-past 12 o'Clock, and EVERY SATURDAY, at half-past 11 o'Clock, consignments of PLANTS and BULBS, &c., as above.

On view morning of Sale, and Catalogues had.

Wednesday Next.

6000 splendid Bulbs of LILIUM AURATUM, just received from Japan in very fine condition (the greater portion measuring in cirumference 8 to 12 inches), also LILIUM AURATUM RUBRO-VITTATUM, L. a. MACRANTHUM and PICTUM, L. KRAMERII, LONGIFLORUM, ALBUM, ROSEUM, &c.

MESSRS. PROTHEROE AND MORRIS will include the above in the SALE at their Central Auction Rooms, 67 and 68, Cheapside, London, E.C., on WEDNESDAY NEXT, February 2.

On view morning of Sale, and Catalogues had.

Friday Next.
SACCOLABIUM CŒLESTE.

AERIDES MITRATUM, true. Collected by Mr. C. Roebelen, and guaranteed true. Just received in splendid condition. Every plant received will be offered.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, February 4, at half-past 12 o'Clock precisely, a grand importation of the lovely, rare, and free blooming Saccolabium Cœleste, in extra strong masses and very fine plants. See *Gardeners' Chronicle*, May 30, 1885; and the extremely rare Aërides mitratum (true) fine healthy plants, see plate 5728, *Botanical Magazine*, 1868, the whole collected by Mr. C. Roebelen, and guaranteed true.

Also from Messrs. Shuttleworth, Carder & Co., ODONTOGLOSSUM CRISPUM (ALEXANDRÆ), with good breaks and the best type. A quantity of Established (unflowered), and imported plants. ODONTOGLOSSUM Pescatorei, Established (unflowered); MASDEVALLIA in variety; and other good established ORCHIDS.

On view morning of Sale, and Catalogues had.

Crawley, Surrey.

Three miles from Three Bridges (Main Line). and from Crawley stations.

THREE DAYS' SALE of WELL GROWN NURSERY STOCK, by order of Messrs. J. Cheal & Sons. Important to those engaged in planting.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, the Lowfield Nurseries, Crawley, on TUESDAY and WEDNESDAY, February 15 and 16, at 12 o'Clock precisely each day, several Acres of valuable well grown NURSERY STOCK in excellent condition for removal, including 1100 choice specimen Conifers, 3 to 12 feet, carefully grown for effective planting; 6000 Laurels of sorts, 1½ to 6 feet; 500 Rhododendrons, 2 to 4 feet; 750 Arbor Vitæ, 3 to 5 feet; 6000 Spruce Firs, 2 to 9 feet; 1250 Scotch Firs, 3 to 4 feet; 2000 fine Standard Trees, 5 to 12 feet; 1500 half Standard and Dwarf Roses; 8500 Fruit Trees, including Standard, Pyramid, and Dwarf-trained Apples, Pears, Plums, Cherries, &c.; 5000 Bush Fruit Trees, and other Stock,

May now be viewed. Catalogues may be had on the Premises, or of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C., and Leytonstone.

N.B. The Auctioneers beg to draw the attention of intending purchasers to the above Stock, which is worthy of inspection.

Hertford.

GREAT UNRESERVED CLEARANCE SALE of the whole of the well grown NURSERY STOCK, standing on the several grounds known as Campbells, Camp Hill, Lloyd's, Fisher's, Sandy Lane, Brandon's, Orchard, Brickfields, New Field, Lower Ground, Camp Hill Cottage, and Dimsey's Garden.

FIVE DAYS' SALE.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Francis Bros., to SELL by AUCTION, without reserve, at the several Nurseries as mentioned above, and all within a few minutes' walk of the Hertford Railway Stations, on MONDAY, February 21 and four following days, at 12 o'Clock punctually each day, the whole of the valuable NURSERY STOCK, comprising:—

50,000 Evergreen, Coniferæ, and Deciduous Shrubs, amongst which are splendid specimen Cupressus and Pinus, of sorts; 5000 Portugal and other Laurels, 1 to 4 feet; 7000 Pinus, Scotch, and Spruce Firs, 2 to 5 feet. 3000 green and variegated Hollies, 1 to 3 feet; 1000 Aucubas; 1000 English Yews.

75,000 Larch, 25,000 dwarf and standard Roses; 100,000 Manetti stocks and cuttings; 30,000 Rose stocks, all in dormant bud, worked with the newest and most approved varieties, and forming altogether one of the finest collections in the trade; 50,000 Ornamental and Forest Trees, including 25,000 Limes, Poplars, Beech, Birch, and Chestnuts; 12,000 Fruit Trees, 10,000 Gooseberries and Currants; some hundreds of Orchard Fruit Trees; 25,000 capital bicks, stack of Hay, &c.

May be viewed any day (Sundays excepted) prior to the sale. Catalogues may be had of Mr. THOMAS, the Foreman at the Nurseries; at the Salisbury Arms and Dimsdale Arms, Hertford; of E. K. FRANCIS, Esq., Solicitor, 4, Great Winchester Street, London, E. C.; and of the Auctioneers, Estate Agents, and Valuers, 67 and 68, Cheapside, London, E.C., and Leytonstone.

ORCHIDS—ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,
THE VINEYARD and NURSERIES, GARSTON,
NEAR LIVERPOOL,
have to state that they have just received a fine importation of

EAST INDIAN ORCHIDS.

LIST, with full particulars, will be sent post-free on application.

London (30 miles from).

OLD-ESTABLISHED NURSERY BUSINESS, with an extensive connection.
Satisfactory reasons for disposal.

MESSRS. PROTHEROE AND MORRIS are instructed to FIND a PURCHASER for one of the oldest established NURSERY BUSINESSES within a similar distance of London. The incoming would be subject to a valuation, but probable amount about £7000, or a PARTNERSHIP would be entertained.

Full particulars of Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, London, E.C.

Middlesex.
TO CUT-FLOWER GROWERS.

TO BE SOLD, at a sacrifice, a well-known MARKET NURSERY, with 25 Greenhouses, 10 Pits, &c., containing about 15,000 feet of Glass. Moderate Rent (£47 nett).

Full particulars and terms on application to Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, E.C.

London, S.W.
TO BE SOLD at a GREAT SACRIFICE.
To Orchid, Cut Flower, Fern, or Palm Growers.
Excellent Opening for Two Persons.

TO BE SOLD, a well-established NURSERY, with nearly 20,000 feet of Glass, Stabling, detached Residence, and 1 Acre of Ground. Nominal rent of only £26. Price for whole, £1200, payable by arrangement.

Apply to PROTHEROE AND MORRIS, 67 and 68, Cheapside, E.C.

FOR DISPOSAL, a SEED and FLORIST'S BUSINESS. Established 12 years. Nursery with eight newly built Glasshouses, in best position, well fitted Shop; or, practical WORKING PARTNER would be taken.

R. J., 42, Albion Place, Sittingbourne, Kent.

FOR SALE, a FLORIST'S BUSINESS, in a good neighbourhood, consisting of 11 Houses, about 650 run, in good condition, all heated by Hot Water; also 2 long Pits. Stock to be taken at valuation. Rent low.

G. A. SAYERS, 11, Rennell Street, Lewisham, S.E.

TO BE LET, on easy terms, a NURSERY and FLORISTS' BUSINESS, within 4 miles of Covent Garden Market, 5 Greenhouses, about 2 acres. Good Dwelling House, Coach House, and Stabling.

Apply to J. R. SPILLER, Esq., Solicitor, 12, Tadmor Street, Shepherd's Bush.

SQUELCH AND BARNHAM, North Row, Covent Garden, London, W.C., REQUIRE any quantity of fine Muscats, for which they can offer good prices, also fine Black Grapes, Tomatos, Cucumbers, choice Flowers, &c.

SQUELCH AND BARNHAM, giving personal attention to all consignments, they are thus enabled to obtain the HIGHEST MARKET PRICE.

SQUELCH AND BARNHAM,
ACCOUNT SALES sent daily, and
CHEQUES forwarded weekly.
BANKERS and TRADE REFERENCES.
BASKETS and LABELS supplied.

Landscape Gardening.

H. F. MALLER (of the firm of B. Maller & Sons), late Pupil of the Crystal Palace School of Landscape Gardening, is prepared to FURNISH PLANS, or undertake any kind of the above work.—61, High Street, Lewisham.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

At a General Meeting of the Subscribers to this Institution held on FRIDAY, the 14th January, 1887, for the purpose of making an Addition to the List of Pensioners, it was resolved "That in consequence of Two Vacancies having occurred in the List of Pensioners since the voting papers were issued, after the Four Pensioners for whom the Election is called have been elected the two next highest on the poll shall be declared Pensioners." The following was the result of the Ballot:— CANDIDATES.

Votes.	Name.	Age.
1095	HARRIETT CHAPMAN	64
227	MATILDA CHARLTON	60
1172	ELIZABETH COLE	74
840	DAVID DAY	65
82	STEVEN EVANS	71
270	JAMES EWING	86
904	RUTH HOOD	68
64	THOMAS MORLEY	77
268	HENRY MOXHAM	67
266	MARY NELSON	65
89	JOSEPH NORVAL...	61
540	CHARLES OSMAN	64
1053	SAMUEL PERKINS	62
183	JOHN SLOWE	77
182	ELIZABETH SNOW	72
1211	WILLIAM WADDS	77
694	THOMAS M. WALL	86

The Meeting then declared William Wadds, Elizabeth Cole, Harriett Chapman, Samuel Perkins, Ruth Hood, and David Day duly elected Pensioners from the 25th December last.

By Order, EDWD. R. CUTLER, Secretary.
50, Parliament Street, S.W., January 18, 1887.

APPEAL TO THE BENEVOLENT.

Re CHAS. G. ELLIOTT.

In response to above appeal in last week's *Gardeners' Chronicle*, the following sums have been received, and are hereby gratefully acknowledged:—

Mrs. SILLEM, Sydenham...	£1	0	0
O. AND G. CLUB	0	8	0
J. W., JUN.	0	5	0
T. M.	0	5	0
B. WYNNE	0	5	0
W. T. S.	0	5	0
G. THOMSON	0	10	0
W. R.	0	10	0
J. LAING	0	5	0
A FRIEND	0	2	0
M. T.	0	2	6

It is gratifying to state that Mr. Elliott has now obtained employment; the above sum has been devoted to purchasing him articles of which he was in sore need.

W. RICHARDS, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

B. S. WILLIAMS'

PRIZE GLOXINIAS

ARE UNEQUALLED.

From Mr. W. COPE, Gardener to W. E. Tallents, Esq., Carlton-on-Trent:—

"I have had some fine Gloxinias from the seed I got from you last year. I never saw such splendid colours before."

GLOXINIA, Williams' Finest Spotted, Erect.

The seed of this variety which I offer is the produce of a strain which, for excellence of quality, are unrivalled. The blooms are very large, of brilliant and varied colours; they are exquisitely and beautifully spotted. .. .. Per packet s. 2 d. 6

GLOXINIA, Williams' Superb, Erect.

This has been saved from plants which have been carefully selected from the best English and Continental strains, including the celebrated collection of M. Duval, of Versailles, whose entire stock I have purchased. It has gained First Prizes wherever it has been exhibited. This strain includes the most varied tints of colour to be found in this useful decorative plant. I can strongly recommend it .. .. Per packet 2 6

GLOXINIA.

☞ The seed of this magnificent plant embraces the most varied colours, in rich crimson, porcelain, purple, and lavender-blue, rose and violet belted flowers, comprised both in the erect and drooping varieties.

Erect, finest mixed	Per packet	1 6
Finest mixed, erect and drooping	"	1 6
Drooping, finest mixed	"	1 6

ILLUSTRATED SEED CATALOGUE for 1887 is now ready, and will be forwarded, gratis and post-free, to all applicants.

VICTORIA & PARADISE NURSERIES, UPPER HOLLOWAY, LONDON, N.

BAUMFORTHS' SEEDLING RASPBERRY.

THIS new and splendid Raspberry has now so thoroughly established itself a popular favourite with the growers for market, the gentleman's table, and especially the exhibitor, throughout the Kingdom, that it is almost superfluous now to make a repetition of its merits in detail. Suffice it to say, during the time I have had the pleasure of introducing it, I have been favoured with orders for over 150,000 plants, which are distributed over all parts of the world, and the hundreds of voluntary testimonials received in its favour fully confirm my previous description of its sterling properties, and entitle it to be classed the most popular and finest variety of Raspberry in cultivation, alike for produce, size, deep crimson colour, quality, and strong, robust constitution.

I have selected the following from the numerous Testimonials I have received:—

From MR. HUGH LYNCH, Gardener to Lord Beaumont, Carlton Towers.

"I have grown your famous Raspberry, "Baumforth's Seedling," the last four years, and am pleased to inform you that I am thoroughly satisfied with it. I find it nearly a fortnight earlier than the good old Fillbasket, the fruit much larger, and with a far superior flavour. I have had it in competition at the best local shows the last three years, and have always secured the first prize; and I would advise all who are intending planting Raspberries to give it a trial. My experience of it is, that Baumforth's Seedling has no equal."

From Mr. D. MELVILLE, Gardener to Mrs. Hornsby St. Vincents, New Somerby, near Grantham.

"I consider Baumforth's Seedling Raspberry the best in cultivation. It is of very vigorous growth and most prolific habit, bearing a second crop of extraordinary sized fruit. I would strongly recommend planters of Raspberries to obtain this excellent sort, both for dessert and the exhibition table. The fruit is all that can be desired. I enclose you particulars of a few first prizes obtained at different exhibitions, to prove my statement.

I am offering Canes this Season at following Reduced Prices:—

Planting Canes, 15s. per 100, 3s. per doz.

Fruiting Canes, 22s. 6d. per 100, 4s. per doz.

EARLY ORDERS RESPECTFULLY SOLICITED

EDMUND PHILIP DIXON,

NURSERIES—

HULL and BURTON-CONSTABLE.

SEED ESTABLISHMENT—

57, QUEEN STREET, HULL.

CHOICE FLOWER SEEDS.

NEW CATALOGUE of **88 pages**, consisting exclusively of **FLOWER SEEDS**, in which everything is fully described, and many illustrated. The Catalogue contains no less than

100 well-executed Engravings.

A large portion of these, like the plants they illustrate, are original, and to be found in this Catalogue only. Can fairly claim to be one of the most complete Catalogues of Flower Seeds ever published.

Copies may be had gratuitously and post-free upon application to

THOMAS S. WARE,

HALE FARM NURSERIES,

TOTTENHAM, LONDON.

PEACHES AND NECTARINES

FOR FORCING.

FINE TREES, in pots, of the most approved kinds, well furnished with fruit buds, price 5*s.*, 7*s.* 6*d.*, and 10*s.* 6*d.* each.

CATALOGUES Post-free.

THOMAS RIVERS & SON,
SAWBRIDGEWORTH, HERTS.

GRATIS. **POST-FREE.**

A JUBILEE PRESENT.

"YE LITTLE BOOKE FOR YE GARDEN,"

Price Sixpence.

Containing Original Sketches, Concise Cameos, and a useful Calendar of Operations in Horticulture.

W. WOOD & SON, F.R.H.S.,
Horticultural Specialists,
WOOD GREEN, LONDON, N.,

Beg to announce that their NEW ANNUAL for 1887 will be sent gratis to
EVERY READER OF THIS PAPER,
and to all Customers and Friends who will kindly forward their address.

GRAND LEEK COMPETITION.

First Prize, £5.

IN order to make our Great Exhibition LEEK (the Lyon) still more widely known, we have decided to offer the above Prize to the grower of the best Six Specimens. The competition will take place on November 4, 1887, and is open to all without fee or entry money. A card will be sent with every 1*s.* 6*d.* packet of Seed supplied by us to those who signify at the time of ordering their intention to compete. For full information see our AMATEURS' GARDENING GUIDE for 1887, gratis and post-free.

STUART AND MEIN, Kelso, Scotland.

CUTBUSH'S MILL-TRACK MUSHROOM SPAWN.—Too well known to require description. Price, 6*s.* per bushel (1*s.* extra per bushel for package), or 6*d.* per cake; free by parcel post, 1*s.*

None genuine unless in sealed packages and printed cultural directions enclosed, with our signature attached.

WM. CUTBUSH AND SON (Limited), Nurserymen and Seed Merchants, Highgate Nurseries, N.

Just Published, the

SEED CATALOGUE OF HOOPER & CO.

(LIMITED).

This Catalogue is believed to be the most complete, comprehensive, and interesting, issued in the English language.

AMATEURS, GARDENERS, STEWARDS, and all interested in Gardening, are invited to peruse "HOOPER'S CATALOGUE" before placing their Orders. Although a book of 120 pages, nothing is charged for it, but twopence in stamps should be sent for the postage.

HOOPER AND CO. (Limited) occupy an exceptionally advantageous position in their ability to supply their goods at low (or first-hand) prices. The Firm is an amalgamation of three houses, covering every branch of the Trade. The economy resulting from this fusion, and the experience gained, are all placed to the benefit of their Customers, as will be proved upon trial.

HOOPER & CO. (Limited),
COVENT GARDEN, LONDON, W.C.
BRANCHES:—Maida Vale, Twickenham, Paris, and New York.

SPIRÆA JAPONICA, fine Imported Clumps, 12*s.* 6*d.* per 100. Low offers per 1000 on application.

WATKINS AND SIMPSON, Seed and Bulb Merchants, Exeter Street, Strand, W.C.

SEED CATALOGUE for 1887.—Just published, with everything priced, containing many NOVELTIES of sterling merit, both in Vegetable and Flower Seeds. Post free on application to

WILLIAM BULL, F.L.S., Establishment for New and Rare Plants and Seeds, 536, King's Road, Chelsea, London, S.W.

JAMES L. BOYSON
ROSE GROWER, Caen (Calvados), France.

My LIST of the 72 NEW ROSES brought out this autumn is now ready, and will be sent Free on application.

Carefully hardened off Plants will be ready for delivery in March, 1887, as well as a fine stock of "Her Majesty" H.P.; "American Beauty," H.T.; "The Bride," T.; "Clara Cochet," H.P.; and "Comtesse de Frigneuse," T.

My complete CATALOGUE of over 1200 of the best varieties, with raiser's name and date of sending out of each variety, free for 7*d.* in stamps.

A few thousand SEEDLING BRIERS still unsold.

FLOWERING SHRUBS.—LILAC, MOCK ORANGE, WEIGELA, BERBERIS, CHERRY, HYDRANGEA, HYPERICUM, RIBES, SPIRÆA, RHUS, VIBURNUM, &c.; 8*s.* per dozen, 50*s.* per 100. Descriptive LIST free.

RICHARD SMITH AND CO., Nurserymen, Worcester.

EIGHTY THOUSAND CLEMATIS, in Pots, of all the finest Double and Single Varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12*s.* to 24*s.* per dozen, strong plants. Descriptive LIST on application.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

CLEARANCE SALE of Healthy PALMS for Table and Conservatory Decoration.—LATANIA BORBONICA, SEAFORTHIA ELEGANS, PHŒNIX RECLINATA, and PHŒNIX TENUIS, 12 inches high, 6*d.* each, 4*s.* per dozen, 25*s.* per 100; same kinds, 20 inches high, 1*s.* 6*d.* each, 6 for 8*s.*, 12 for 14*s.* Package and delivery free.

COCOS WEDDELLIANA, KENTIAS, ARECA LUTESCENS, and EUTERPE EDULIS, 2*s.* to 5*s.* each. Large PALMS, 3 feet to 6 feet high, 5*s.* to 50*s.* each, all of splendid value.

GARDENER, Holly Lodge, Stamford Hill, London, N.

Finest Quality, Extra Cheap.

MORLE AND CO. offer:—
AZALEA INDICA, full of flower-buds, 15*s.*, 21*s.*, and 30*s.* per dozen.
CAMELLIAS, full of flower-buds, 18*s.*, 24*s.*, to 36*s.* per dozen; specimens, 5*s.* to 15*s.* each.
RHODODENDRONS, finest named, 18*s.* to 30*s.* per dozen.
DEUTZIA GRACILIS, extra strong, 6*s.* per dozen.
SPIRÆA JAPONICA, extra strong, 4*s.* per dozen.
LILY of the VALLEY, extra strong Berlin Crowns, 6*s.* per 100.
TUBEROSES, Double African and American Pearl. Largest and cheapest stock in the Trade. See Special LIST. Trade Supplied.

MORLE AND CO., 1 and 2, Fenchurch Street; and at Child's Hill Farm Nursery, Finchley Road, N.W.

CHRYSANTHEMUMS. — New Descriptive CATALOGUE of all the New and Choice Varieties considered worth cultivation, with Cultural Directions. 750 varieties in stock. Post-free 3*d.*

ROBERT OWEN, Floral Nursery, Castle Hill, Maidenhead.

HARDY RHODODENDRONS and AZALEAS.—The most extensive stock in the Kingdom of the finest hardy varieties known.

☞ The Rhododendrons in Rotten Row and the Botanic Gardens, Regent's Park, are supplied by

ANTHONY WATERER, Knap Hill Nursery, Woking, Surrey.

Single Roses.

GEO. COOLING AND SONS offer strong Plants of the following interesting and beautiful varieties:—BERBERIFOLIA HARDII, 2*s.* each; CAMELLIA JAPONICA, 2*s.* each; COPPER AUSTRIAN BRIER, 1*s.* each; MACARTNEY SIMPLEX, 1*s.* 6*d.* each; PAUL'S SINGLE CRIMSON, 1*s.* 6*d.* each; PAUL'S SINGLE WHITE, 1*s.* 6*d.* each; POLYANTHA, 1*s.* 6*d.* each; RUGOSA, 1*s.* 6*d.* each; RUGOSA ALBA, 2*s.* each; ROSA ECÆ, 2*s.* each; YELLOW AUSTRIAN BRIER, 1*s.* each.

The set of Eleven Varieties, carriage free, 16*s.* 6*d.*

Full descriptions in our ROSE CATALOGUE, gratis and post-free. The Nurseries, Bath.

THE BEST NEW CULINARY PEAS for 1887 are
ECKFORD'S "MAGNIFICENT."
ECKFORD'S "VICTOR."
ECKFORD'S "DIGNITY."

ECKFORD'S NEW PEAS are supplied in SEALED PACKETS ONLY. See descriptions in NEW SEED CATALOGUE, post-free on application.

WILLIAM BULL, F.L.S., Establishment for New and Rare Plants and Seeds, 536, King's Road, Chelsea, London, S.W.

GREAT SACRIFICE to Clear Land.—Strong Standard and Pyramid-bearing Fruit Trees of best sorts, and fine Evergreen Ornamental Trees and Shrubs, Extra Transplanted, &c. Large Discount off usual prices for Cash. See LIST. Also FOREST TREES in quantity.—Apply,

T. L. MAYOS, Highfield Nurseries, Hereford.

Special Offer.

ISAAC MATTHEWS AND SON have for Sale 500,000 RHODODENDRONS, varying in size from 4 to 6 inches up to 2 to 3 feet—Cunningham's White, Jacksoni, caucasicum, pictum, Seedling Hybrids, Hybrid ponticum, and named varieties; good bushy plants. HOLLIES, CONIFERS, FOREST TREES in large quantities; AUCUBAS, YEWS, and other Nursery Stock. CATALOGUES now ready, and may be had, gratis and post-free, on application to the Nurseries, Milton, Stoke-on-Trent.

Our Nurseries are 110 acres.

MY NEW CATALOGUE of the CHOICEST GERMAN FLOWER SEEDS is now being issued; copies may be had Gratis and Post-free on application.

FRED. ROEMER, Seed Grower, Quedlinburg, Germany.

PRIZE COB and other NUT TREES.

Gentlemen desirous of obtaining the true

WEBB'S PRIZE COB FILBERT TREES,

AS ALSO THE

Kentish Cob and other Nut Trees,

should send their Orders as early as convenient to

Mr. COOPER, F.R.H.S., Calcot Gardens, Reading

of whom alone the various sorts can be obtained.

PRICE LISTS and PAMPHLETS on application.

SEEDS,

VEGETABLE, FLOWER, AND FARM,

Carefully Selected,

AND FROM WHICH MAY BE EXPECTED

THE BEST RESULTS

ever yet attained.

ILLUSTRATED LIST,

Containing Copious, Interesting and Reliable Information, Free.

RICHARD SMITH & CO.,

SEED MERCHANTS and NURSERYMEN,

WORCESTER.

KENT—THE GARDEN OF ENGLAND.

300,000 FRUIT TREES—true to name.

GEORGE BUNYARD & CO.,

THE OLD NURSERIES, MAIDSTONE,

(Established 1796), will forward, for Six Stamps, their

DESCRIPTIVE FRUIT CATALOGUE,

with Illustrations and Cultural Notes (Copyright edition). See *Gardeners' Chronicle* of Sept. 4, p. 298. The finest stock ever offered—clean, healthy, with grand fibrous roots. Frequent trains from London by North Kent and London & Chatham Railways.

HENDER'S PETUNIAS and BALSAMS

Are the Best Strains offered:—

PETUNIAS, Double Fringed, 2*s.* and 3*s.* 6*d.* per packet.
,, Single, 1*s.* and 2*s.* per packet; Fringed, 2*s.*
BALSAMS, eight varieties, 2*s.* 6*d.*; mixed, 1*s.* per packet.

HENDER AND SONS, Mannamead Nursery, Plymouth.

NOVELTIES WORTH HAVING.

BROCCOLI — "CHRISTMAS PURPLE SPROUTING."

This variety produces good Sprouts before Christmas, and is in full bearing in January. Per packet, 1*s.*

CELERY—"BIBBY'S DEFIANCE SOLID WHITE."

This is an undoubtedly fine improvement in White Celeries—is large, firm, and solid, far surpassing "Sandringham," as it grows higher, faster, and larger in the same time, and as sweet as a nut. Per packet, 8*d.*

LETTUCE—"VAUXHALL DEFIANCE."

Cabbage variety—the finest summer Lettuce grown—is very large, and stands drought without running better than any variety we know. Per ounce, 1*s.*

PARSNIP — "IMPROVED MARROW."

This variety has a very clean, handsome root, and large—its flavour is before any other, it eats as short as a Carrot, is very sweet, without so much of the mealy taste of other Parsnips. Per ounce, 4*d.*

PEA — "SANGSTER'S No. 1."

Extra Early Selection.

We consider this greatly improved variety, which we have been selecting for some years, to be as Early as Laxton's Earliest of All, and a heavier cropper, and larger pods. Per quart, 1*s.*

Prices to the Trade on application.

CATALOGUES of all varieties of VEGETABLE and FLOWER SEEDS, including many good Novelties, free by Post.

WATKINS & SIMPSON,
SEED and BULB MERCHANTS,
EXETER STREET, STRAND, W.C.

THE GOLDEN LARCH
(PSEUDO-LARIX KAEMPFERI).
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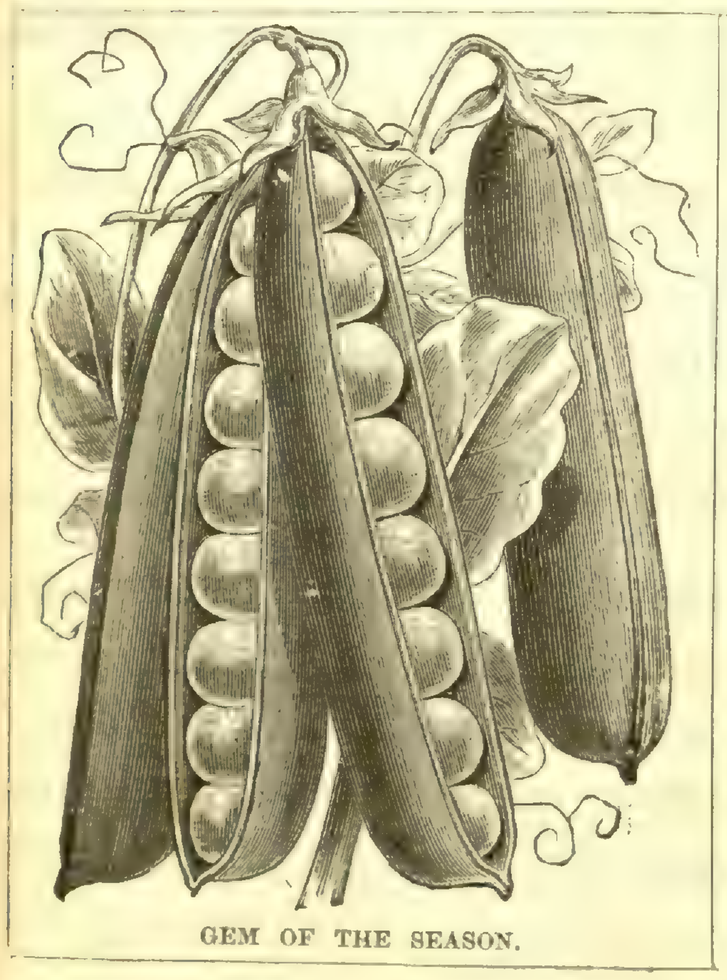
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MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, February 1, at half-past 12 o'Clock precisely, by order of Messrs. HUGH LOW & Co., a large quantity of IMPORTED ORCHIDS, in the best possible condition, just to hand by S.S. *City of Khios*, consisting of a grand lot of **1500 DENDROBIUM WARDIANUM**, the bulk of the variety named Lowii, amongst them a marvellous specimen, one of the finest masses imported, with twenty young growths, forty buds of large size, seventeen of which will produce flowers immediately; D. BRYMERIANUM, 500 D. CRASSINODE, 500 D. DEVONIANUM, D. PRIMULINUM GIGANTEUM, D. THYRSIFLORUM, D. INFUNDIBULUM, or JAMESIANUM, D. HETEROCARPUM, D. FALCONERI, CYMBIDIUM LOWIANUM, C. GIGANTEUM, CŒLOGYNE BARBATA, and other CHOICE ORCHIDS.

Also a fine lot af LÆLIA SUPERBIENS (another property) for Sale without reserve.

On view morning of Sale, and Catalogues had.

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Collected by Mr. C. ROEBELEN, and guaranteed true.
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CHEAP CLEARANCE OFFER.—LAUREL, CAUCASICUM, 12 to 18 inches, 5s.; 2 to 3 feet, 12s. COLCHIC, 1½ to 2 feet, 8s.; 3 to 4 feet, 16s.; 4 to 5 feet, 20s. COMMON, 12 to 18 inches, 4s. LATIFOLIA, 12 to 18 inches, 9s; 2 to 3 feet, 14s. ROTUNDIFOLIA, 12 to 18 inches, 7s.; 2 to 3 feet, 15s. PRIVET, oval-leaved, 2 to 3 feet, 4s. IVY, Irish, 2 to 3 feet, 7s. All per 100. ALDER, 2 to 3 feet, 18s. ASH, common, 20s. BIRCH, 2 to 3 feet, 18s. LARCH, 1½ to 2 feet, 15s.; 2 to 2½ feet, 18s. QUICK, 2 to 2½ feet, 18s. SYCAMORE, 2 to 2½ feet, 17s. 6d. All per 1000. Samples on application.

J. J. MARRIOTT, Walsall, Staffordshire.

SHRUBS and CONIFERÆ.—Laurustinus, 2 feet, bushy, 32s. per 100. Arbutus Unedo, 2 feet, 40s. per 100. Aucuba japonica, 2 to 2½ feet, 40s. per 100. Box, Tree, sorts, 1½ to 2 feet, 30s. per 100. Common Laurels, 2 feet, 12s. per 100. Colchic Laurels, 2 to 2½ feet, 16s. per 100. Grislienia littoralis, 2 feet, 35s. per 100. Sweet Bay, 1½ to 2 feet, 30s. per 100. Rhododendron ponticum, 1½ to 2 feet, 30s. per 100; ditto, 2 to 2½ feet, 40s. per 100, extra fine. Abies Douglasii, 2 to 3 feet, 30s. per 100; ditto, 3 to 4 feet, 40s. per 100; ditto, 4 to 5 feet, 70s. per 100, fine roots and well furnished. Araucaria imbricata, 2 to 2½ feet, 42s. per dozen; ditto, 3 to 3½ feet, 60s. per dozen. Cupressus Lawsonii, 1½ to 2 feet, 16s. per 100; ditto, 2 to 2½ feet, 20s. per 100; ditto, 3 to 4 feet, 50s. per 100. Cupressus erecta viridis, 1½ to 2 feet, 30s. per 100; ditto, 2 to 2½ feet, 40s. per 100. Retinospora plumosa, 1½ to 2 feet, 30s. per 100; ditto, 2 to 2½ feet, 40s. per 100, extra. Picea Nordmanniana, 2 feet, 40s. per 100. Thuia Lobbii, 2 to 2½ feet, 25s. per 100. Special offer by the 1000 for smaller sizes. GARLIES MITCHELL, Nurseryman, Stranraer.

LIMES — ELMS — LIMES. STANDARDS for Avenue or Street Planting, straight stems, fine heads, good roots.

LIMES, best red-twigged variety, 12 to 14 feet, and 14 to 16 feet.

ELMS, English, true, 12 to 14 feet, and 14 to 16 feet.

Very cheap by the dozen or hundred.

JOHN PERKINS AND SON, Billing Road Nurseries, Northampton.

JUBILEE BEGONIAS (Copyright). — We have just published a Chromo-Litho of 12 of our best DOUBLE SEEDLING BEGONIAS, pronounced to be the finest Floral Plate yet sent out; with Jubilee Portrait of Her Majesty. Post-free, 4s.

JOHN LAING AND CO., The Nurseries, Forest Hill, S.E.

FRUIT TREES, in Pots, smotheren with Fruit Buds. Grand Trees, 4s. each; 42s. per dozen; £15 p. 100.

WILL TAYLER, Osborn Nursery, Hampton, Middlesex.

BEGONIA SEED.—Box's Jubilee varieties, choicest from latest prize singles, per packet, 1s. and 2s. 6d; double, the most reliable, very special, per packet, 2s. 6d. and 5s; very extra pure double white, per packet, 5s. and 10s. Sow now. See other Advertisement of Tubers.

J. R. BOX (for last ten years J. Laing's partner), Surrey Seed Warehouse, Croydon.

PLATANUS OCCIDENTALIS, extra fine trees, 8 to 12 feet, £3 per 100. ELMS, 8 to 12 feet, 50s. per 100; strong DAMSONS, and Victoria PLUMS, 40s. per 100. Fine Dwarf ROSES, best kinds, 25s. per 100. Other trees cheap. W. JACKSON, Blakedown, Kidderminster.

FERNS—FERNS—FERNS.—A few thousand Pteris tremula for disposal. Price, £6 per 1000, 14s. per 100. Cash with order from unknown correspondents. Also a quantity of SEAKALE for Planting; good stuff. Cheap.

H. TITE, Nurseryman, Hampton, Middlesex.

WHITE ELEPHANT POTATOS, 4s. per cwt. Strong transplanted QUICKS, 5 years old, 18s. per 1000. Harlington Windsor BEANS, 6s. per bushel. Victoria RHUBARB STOOLS, 12s. per 100. All fine samples. Cash with order. Bags extra. Apply

R. CRUST AND SON, Nurserymen, Spalding.

EAST LOTHIAN STOCK. — Extra choice strain, saved from 2-yr. old plants, specially grown for Seed. Purple, White, Scarlet, Crimson, and Wallflower-leaved White, price 1s., 2s. 6d., and 5s. per packet.

Priced CATALOGUE for 1887, post-free on application.

IRELAND AND THOMSON, Seed Merchants, 81, Princes Street, Edinburgh.

CŒLOGYNE CRISTATA, with Bloom Spikes. Well grown, very cheay.

TRUSTEES of the late J. Stevenson, Timperley, Cheshire.

SHARPE'S NEW PEAS.

"QUEEN,"

2s. per Half-pint Sealed Packet.

"SIR F. A. MILLBANK,"

2s. per Half-pint Sealed Packet.

"TRIUMPH,"

2s. 6d. per Pint Sealed Packet.

"PARAGON,"

1s. 6d. per Pint Sealed Packet.

POST-FREE.

For full description and particulars, see *Gardeners' Chronicle*, December 4, 1886, p. 710.

Trade prices of the above and other novelties contained in Sharpe's List of Specialties, post-free on application.

CHARLES SHARPE & CO.

SEED MERCHANTS, SLEAFORD.

NOVELTIES FOR THE GARDEN.

"FIDLER'S READING CONQUEROR PEA.

New variety, of special merit. One of the best Garden Peas ever offered to the public. Is a very heavy cropper, and produces large pods containing from 10 to 12 Peas. When cooked is of a dark green colour and of excellent flavour.

"FIDLER'S CLIPPER POTATO."

New round variety. Was awarded the Silver Medal at the recent Tercentenary Exhibition for the Best Seedling Potato. The very best Early Round variety now before the public.

FIDLER'S SEED CATALOGUE.

Now ready, gratis and post-free upon application.

C. FIDLER, 103, 104, and 105, FRIAR STREET, READING.

DOUBLE BEGONIAS (Tubers).

H. CANNELL AND SONS' UNRIVALLED COLLECTION, display and success in growing and increasing these lovely sections in choiceness and beauty equal to Orchids. We have received more First-class Certificates from the Royal Horticultural Society for these than all other firms put together.

12 Tubers (Seedlings) sent post free for	£0	9s. 0d.
50 " " "	£1	15s. 0d.
100 " " "	£3	6s. 0d.

SEND FOR A CATALOGUE.

DAHLIAS FOR PROPAGATION.

WE have both the FINEST COLLECTION and BULBS in the World. Send for a Catalogue. 12 splendid kinds sent post-free for 5s.

CANNELL'S PARSLEY

"BEAUTY OF THE PARTERRE,"

THE BEST EVER INTRODUCED.

A real beautiful object, both on the table and in the garden.

6d. and 1s. per packet.

"Glanafon Gardens, Taibach, near Port Talbot, *November* 15, 1886.

"SIRS,—I have grown Parsley extensively for a great many years, and have tried several varieties, but in my opinion your 'Beauty of the Parterre' is the finest in cultivation. I have some roots over 2 feet in diameter; it is really handsome, and I would recommend it to all. H. MORRIS."

"E. SAVENEY, Esq. (Sec.) "The Cedars, Lee, S.E.

"Send six packets seed of 'Beauty of the Parterre' Parsley, which Mrs. Penn wishes to have at once."

H. CANNELL & SONS,

THE HOME OF FLOWERS,

SWANLEY, KENT.

Send for an ILLUSTRATED PRICE LIST of

JOHN BLAKE'S
PATENT SELF-ACTING HYDRAULIC RAMS,

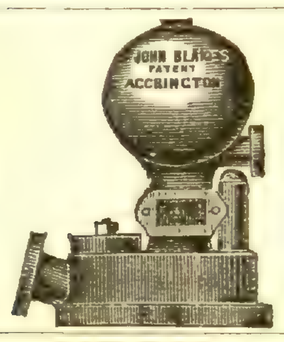
For Raising Water for the Supply of Towns, Villages, Irriagation, Railway Stations, Mansions, Fountains, Farms, &c.

No Cost for Motive Power, which is obtained from a Stream of Water passing through the Ram.

NO OILING OR PACKING REQUIRED.

MADE IN SIZES TO RAISE FROM **300** TO **500,000** GALLONS PER DAY. WILL FORCE TO A HEIGHT OF **1500 Feet.**
SPECIAL RAMS for HIGH FALLS, to send up One Third of the Water passing through them.

Fig. A.



This Ram raises a portion of the same water that works it.

PRICES OF RAMS OF FIGURE "**A**" MAKE, TO FORCE to MEDIUM HEIGHTS.

No. of the Size of the Ram.	Number of Gallons per Day of twenty-four Hours the Ram will raise where there is sufficient working Fall as compared to the Height the Water has to be forced.	Price.
2	300	£12
3	600	15
4	1,000	18
5	1,500	21
6	2,000	25
7	3,000	35
8	5,000	45
9	7,000	55
10	10,000	65
11	15,000	75
12	20,000	100
13	35,000	150
14	50,000	210
15	70,000	275
16	100,000	350

Estimates will be given on receipt of the following particulars:—

1st, the fall (in feet or inches) which can be obtained from the stream, spring, river, or other source of supply; 2d, the height and distance to which the water has to be forced; 3d, the approximate quantity falling per minute, and the number of gallons required to be raised in a day of twenty-four hours; and if a B ram is required, the depth and horizontal distance from the Ram to the clean water should also be stated. Gun-metal is liberally used in the construction of these rams, and the prices include gun-metal foot and stop delivery valve, &c. They are fitted up in a most substantial and workmanlike manner, the first cost being only a secondary consideration.

View of Ram Worked by Water from a Spring, and supplying the House and Garden on the Hill.

This Ram, whilst worked by a stream of impure water, will pump clean water from a well or spring.

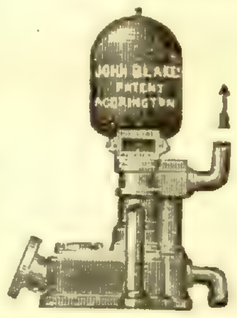


Fig. B.

PRICES OF DOUBLE-ACTING RAMS OF FIGURE "**B**" MAKE, TO FORCE TO MEDIUM HEIGHTS.

No. of the size of the Ram.	Number of Gallons per day of twenty-four hours the Ram will raise where there is sufficient working fall as compared to the height the water has to be forced.	Price.
3	500	£40
4	1,000	50
5	2,000	60
6	4,000	90
7	7,000	120
8	10,000	150
9	15,000	180
10	20,000	200
11	30,000	280
12	50,000	400
13	70,000	550
14	100,000	700

EXTRACTS FROM TESTIMONIALS.

From THOMAS ROBERTS, Esq.,

Estate Surveyor to His Grace the Duke of Sutherland, K.G., Surveyor's Office, Trentham Hall, Staffordshire, April 13, 1886.

"DEAR SIR,—I am pleased to say that the Hydraulic Ram you supplied and fixed at Titensor (the residence of the Marquess of Stafford, M.P.) does its work very satisfactorily, with a fall of 9 feet 6 inches, raising 9000 gallons daily to a height of 150 feet. The Duke of Sutherland, K.G., inspected the working of the Ram, and expressed his entire satisfaction with it.—Iam yours faithfully,
"THOMAS ROBERTS."

From HENRY MORTON, Esq.,

Agent to the Most Honourable the Marquess of Ripon, K.G., Ripon, April 12, 1886.

"DEAR SIR,—The Patent Ram, with 1½ mile of service pipe, a large galvanised tank, and other fittings, which you fixed for the Marquess of Ripon, for the conveyance of water from Hutton Moor Springs to Blows Hall and Copt Hewick Hall, are highly satisfactory to all concerned, both as an engineering success and the intrinsic merits of the materials supplied. About 6000 gallons of water per day are forced into the tank at Blows Hall, nearly a mile distant, and 127 feet above the Ram, the overflow falling into a 20,000 gallon underground tank, from which it gravitates through the 4-inch main 800 yards long, with a fall of 70 feet to the service-cocks and fire-plugs at Copt Hewick Hall, where in case of fire, two or three powerful jets of water can be thrown on to the roof of the Hall.

"I consider your method of carrying out the work is everything that could be desired, and, whilst the waste-power water from the Ram is less than you specified, the quantity elevated is just what you guaranteed.—I am, dear sir, yours very truly,
"HENRY MORTON."

From WILLIAM DICKINSON, Esq.,

Agent to the Most Honourable the Marquess of Abergavenny, K.G., Eridge Estate Office, Hargate Ladge, Tunbridge Wells, July 3, 1885.

"SIR,—I am instructed by the Marquess of Abergavenny to say that the Patent Hydraulic Ram, with over two miles of pipes, forcing water to a height of 230 feet, which you erected at Eridge Castle about nine months ago, has given his lordship entire satisfaction, and he has every confidence in its continuing to do so.—I am, sir, yours faithfully,
"WILLIAM DICKINSON."

From Captain TOWNSHEND,

Wincham, February 10, 1877.

"In answer to your inquiry I am glad to say the Hydraulic Ram you sent me in November, 1875, is working exceedingly well, and gives no trouble. It will work when quite immersed, as it has been several times during the floods this winter, forcing up water through a delivery pipe 900 yards long, at the rate of 80,000 gallons per day, although you only promised 50,000."

BLAKE'S RAMS HAVE BEEN SUPPLIED TO THE FOLLOWING AMONGST OTHERS:—

The Duke of Connaught.
The Maharajah of Kashmir.
The Duke of Devonshire.
The Duke of Westminster.
The Duke of Cleveland.
The Duke of Portland.
The Duke of Sutherland.
The Marquess of Ripon.
The Marquess of Downshire.
The Marquess of Abergavenny.
The Marquess of Londonderry.
The Earl of Devon.
The Earl of Derby.
The Earl of Gainsborough.
The Earl of Ilchester.
The Earl of Romney.
The Earl of Granard.
The Earl Beauchamp.
The Earl of Caledon.
The Earl of Lichfield.
The Countess de Morella.
Lady Henry Cholmondeley.
Lady Frankland, Thirkleby Park.
Lady Hothfield.
Lord Londesborough.
Lord Galway.
Lord Leconfield.
Lord Ribblesdale.
Lord Hatherton.
Lord Leigh.
Lord Raglan.
The Rev. Lord Scarsdale.
Lord Bridport.
Lord Clifden.
Lord Boyne.
The Hon. A. C. G. Calthorpe.
The Right Hon. T. Sotheron-Estcourt.
The Hon. R. More O'Farrell.
Sir William Ventris Field.
The Hon. George Kenyon.
The Rev. Hon. E. T. St. John, Bletsoe.
Admiral Sir George Broke-Middleton.
Sir Frederick A. Millbank, Bart., M.P.
Major-General Sir H. M. Havelock-Allan, Bart.
Major-General Fielden, Witton Park.
General Mackenzie, Foveran House.
Gen. Gerard Potter Eaton, The Pole.
Sir James Robert Walker, Bart.
Sir Henry A. Hoare, Stourhead, Bath.
Sir William Fielding, Bart., Feniscowles.
Sir Robert Menzies, Bart., of Menzies.
Sir Humphrey De Trafford, Bart.
Sir Michael Robert Shaw-Stewart, Bart.
Sir Henry W. Ripley, Bart., Acacia.
Sir Michael Arthur Bass, Bart., M.P.
Sir W. C. Worsley, Bart., Hovingham Hall.
Sir Kenneth Smith Mackenzie, Bart.
Sir William Eden, Bart.
Sir Thomas C. C. Western, Bart.
Sir John Shelley, Bart.
Sir Julian Goldsmid, Bart.
Sir Edward Bates, Bart.
Sir Edmund Buckley, Bart.
Sir A. Woodiwiss, Derby.
Colonel Starkie, Lovely Hall.
Colonel Milligan, Cauldwell Hall.
Colonel Towneley, Towneley, Lancashire.
Colonel Hargreaves, Maiden Erleigh.
Colonel Tremayne, M.P.

JOHN BLAKE, ENGINEER, ACCRINGTON, LANCASHIRE, ENGLAND.

F. C. LEHMANN,

OF POPAYAN, CAUCA, UNITED STATES OF COLOMBIA,

BEGS TO OFFER THE FOLLOWING ORCHIDS, &c.:—

	Price. Per 100. £ s. d.	Per 1000. £ s. d.
ADA spec., flowers orange-scarlet, lip pure white	10 0 0	60 0 0
ANGULOA spec., flowers creamy-white, lip rose spotted	15 0 0	....
BOLLEA CŒLESTIS, Rchb. f.	20 0 0	....
CATTLEYA CHOCOENSIS..	15 0 0	100 0 0
„ „ VAR. ALBA..	50 0 0	....
„ TRIANÆI, Lindl. and Rchb. f. ..	20 0 0	135 0 0
„ „ VAR. ALBA, £3 each.		
CHONDRORYHNCHA CHESTERTONI, Rchb. f.	15 0 0	....
COMPARETTIA FALCATA, Pöpp. and Endl.	6 0 0	35 0 0
HOULLETTIA BROCKLEHURSTIANA?	10 0 0	55 0 0
„ CHRYSANTHA?	10 0 0	60 0 0
KEFERSTEINIA GRAMINEA, Rchb. f...	5 0 0	30 0 0
LUDDEMANNIA LEHMANNI, Rchb. f...	20 0 0	....
LYCASTE spec., flowers brown, petals and lip delicate white..	15 0 0	....
„ „ flowers creamy-white..	15 0 0	....
MASDEVALLIA ATRORUBRA	5 0 0	30 0 0
„ CHIMÆRA, Rchb. f.	8 0 0	45 0 0
„ „ VAR. POPAYANENSIS	12 0 0	60 0 0
„ EPHIPPIUM, Rchb. f. (TROCHILUS, Lindl.)	10 0 0	55 0 0
„ MACULATA?	8 0 0	40 0 0
„ PERISTERIA, Rchb. f.	8 0 0	40 0 0
„ RACEMOSA, Lindl.	5 0 0	30 0 0
„ ROSEA, Lindl.	8 0 0	50 0 0
„ VESPERTILIO, Rchb. f.	8 0 0	....
„ spec. (MACRURA?)	10 0 0	55 0 0
„ spec. (SACCILABIATÆ), flowers pure white, red spotted	10 0 0	....
MAXILLARIA GRANDIFLORA, Lindl...	12 0 0	60 0 0
„ LEHMANNI, Rchb. f.	20 0 0	....
„ FRACTIFLEXA, Rchb. f.	8 0 0	....
„ LEPIDOTA, Lindl.	6 0 0	35 0 0
„ „ VAR. ALBIDA, Rchb. f.	8 0 0	40 0 0
„ LUTEO-ALBA	6 0 0	35 0 0
MESOSPINIDIUM SANGUINEUM, Rchb. f.	6 0 0	35 0 0
„ VULCANICUM, Rchb. f.	12 0 0	60 0 0
ODONTOGLOSSUM ANGUSTATUM, Lindl.	8 0 0	40 0 0
„ CIRROSUM, Lindl.	8 0 0	40 0 0
„ CRISPUM, Lindl. (ALEXANDRÆ)..	10 0 0	50 0 0
„ „ VAR. LEHMANNI, Rchb. f. ..	8 0 0	40 0 0
„ „ „ POPAYANENSE	8 0 0	40 0 0
„ EPIDENDROIDES, H. B. K... ..	20 0 0	100 0 0
„ HALLI, Lindl.	8 0 0	45 0 0
„ „ VAR. XANTHOGLOSSUM, Rchb. f.	8 0 0	45 0 0
„ LEHMANNI, Rchb. f., flowers much like O. polyxanthum	20 0 0	100 0 0
„ LUTEOPURPUREUM, Lindl. ..	8 0 0	45 0 0
„ „ „ var. nov.	8 0 0	45 0 0
„ PARDINUM, Lindl.	8 0 0	45 0 0
„ POLYXANTHUM, Rchb. f.	10 0 0	50 0 0
„ RAMOSISSIMUM, Lindl.	20 0 0	100 0 0
„ „ VAR. XANTHINUM	10 0 0	50 0 0
„ REVOLUTUM, Lindl.	8 0 0	45 0 0

	Price. Per 100. £ s. d.	Per 1000. £ s. d.
ODONTOGLOSSUM SCEPTRUM	8 0 0	45 0 0
„ ROEZLII, Rchb. f.	12 0 0	60 0 0
„ VEXILLARIUM, Rchb. f.	12 0 0	60 0 0
„ „ VAR. LEHMANNI, Rchb. f. ..	15 0 0	75 0 0
„ WALLISI, Rchb. f.	8 0 0	50 0 0
ONCIDIUM JAMESONI, Lindl.	8 0 0	40 0 0
„ KRAMERI, Rchb. f.	8 0 0	40 0 0
„ NUBIGENUM, Lindl.	6 0 0	35 0 0
„ OLIVACEUM, H. B. K. (CUCULLATUM), Lindl.	6 0 0	35 0 0
„ OBRYZATUM, Rchb. f.	6 0 0	35 0 0
„ PYRAMIDALE, Lindl.	6 0 0	30 0 0
„ VIRGULATUM, Rchb. f.	6 0 0	30 0 0
„ WELTONI	8 0 0	40 0 0
„ (CYRTOCHILUM) HASTIFERUM, Rchb. f.	25 0 0	120 0 0
„ „ MACRANTHUM, Lindl.	20 0 0	100 0 0
„ „ UNDULATUM, Lindl.	15 0 0	75 0 0
„ „ SERRATUM, Lindl.	15 0 0	70 0 0
„ „ spec. nov., flowers chestnut-brown with yellow margins; scape 1—2 feet high, pyramidal, very densely set	25 0 0	120 0 0
„ „ spec. nov. (?)	15 0 0	....
PAPHINIA RUGOSA	20 0 0	....
PERISTERIA ELATA	12 0 0	60 0 0
PESCATOREA DAYANA, Rchb. f. ..	20 0 0	....
„ KLABOCHORUM, Rchb. f.	20 0 0	....
„ LEHMANNI, Rchb. f...	25 0 0	....
„ ROEZLII (EUGLOSSA), Rchb. f. ..	20 0 0	100 0 0
RESTREPIA ANTENNIFERA, H. B. K.	5 0 0	30 0 0
„ GUTTULATA, Lindl.	6 0 0	35 0 0
„ CUCULLATA, Lindl.	5 0 0	30 0 0
RODRIGUEZIA SECUNDA, H. B. K. ..	5 0 0	30 0 0
„ (BURLINGTONIA) NEO-GRANADENSIS	5 0 0	30 0 0
SCHOMBURGKIA spec.	10 0 0	55 0 0
SELENIPEDIUM (CYPRIPEDIUM) ROEZLII, Rchb. f.	6 0 0	30 0 0
„ WALLISI, Rchb. f.	40 0 0	....
„ HARTWEGI, Rchb. f.	15 0 0	....
STANHOPEA CONNATA, Klotzsch ..	12 0 0	....
„ TRICORNIS, Lindl.	12 0 0	....
„ spec., flowers pure white	15 0 0	....
TRICHOCENTRUM spec., flowers pale yellow, lip red-spotted	20 0 0	....
TRICHOPILIA FRAGRANS, Rchb. f. ..	10 0 0	50 0 0
„ LAXA, Rchb. f...	8 0 0	40 0 0
UROPEDIUM LINDENI, Lindl.	8 0 0	40 0 0
WARSCEWICZELLA spec., flowers white	12 0 0	....
„ spec., perigones white, lip streaked red with lilac-violet	15 0 0	....
BATEMANNIA WALLISI	20 0 0	....
EUCHARIS SANDERIANA, Bat. ..	....	15 0 0
PHÆDRANASSA LEHMANNI, Regel	2 10 0	....
„ SCHIZANTHA, Bat.	....	20 0 0
HIPPEASTRUM SOLANDRÆFLORUM VAR. ALBUM	10 0 0	50 0 0

CONDITIONS:—*Prices are quoted in English Sterling—1 Pound—20 Marks German—25 Francs—5 Dollars American, Gold, and goods delivered free of all charges at the port of shipment.* From there Buyers take all responsibility and expense. *Orders should be accompanied by a remittance in the form of Drafts, Cheques, &c., on well credited Banking Establishments; but if satisfactory reference be given, payment may be made by Bills of Exchange, drawn at 90 days after sight; smaller amounts at sight. Orders under £25 cannot be attended to.*

To secure the arrival of the Plants in good condition Consignments—if not expressly otherwise ordered—will be dispatched only when the Plants are in fit condition to travel; the months being January to April, and July to October.

NOTE.—Payments may be effected through

MESSRS. RÖSING BROTHERS & CO., 10, BASINGHALL STREET, LONDON, E.C.

NEW ROSES FOR 1887.

PRELIMINARY NOTICE.

WM. PAUL & SON

Beg to announce that their Two New H.P. Roses,

GRAND MOGUL,

First-class Certificate Royal Horticultural Society, the only English Rose to which this distinction was awarded in 1886; and

SILVER QUEEN.

Plants are expected to be ready in May next.
Price 10*s.* 6*d.* each.

WM. PAUL & SON will also distribute at the same time Mr. Bennett's two new H.P. Roses—

MRS. JOHN LAING,

Gold Medal, National Rose Society; and

THE PURITAN,

—the latter named after the winning boat in the recent American yacht races; for the sale of which in Europe they are appointed Sole Agents by Mr. Evans, of Philadelphia, who has purchased the entire stock from Mr. Bennett. The price will be 7*s.* 6*d.* each.

A great demand for these Roses being anticipated, and their propagation depending somewhat on the number of orders booked in advance, it is particularly requested that all who require a supply will bespeak them as early as possible, to prevent disappointment.

The usual terms to the Trade.

PAUL'S NURSERIES,

WALTHAM CROSS, HERTS.

KENT & BRYDON'S NEW PEA,

"XL ALL,"

The Best Main Cropping Variety in Cultivation.

THIS valuable new variety is a large Wrinkled Marrow, vigorous in growth and habit, attains a height of 4 feet, and, what is of the greatest importance, is not subject to mildew. It is a main crop Pea, but is also adapted for late sowing, and its cropping powers are enormous. The pods are produced in pairs, which entirely cover the haulm from top to bottom, each pod containing eight to nine large Peas, which, when cooked, retain their beautiful dark-green colour; the flavour is most delicious, and in this respect it has not a rival. Such superior quality combined with productiveness, render "XL ALL" an acquisition of the greatest merit.

Price, 2s. 6d. per Sealed Half-pint Packet.

POST-FREE.

For Testimonials and other CHOICE NOVELTIES see Descriptive SEED GUIDE, free on application.

WHOLESALE:—
Messrs. HURST & SON, 152, Houndsditch, E.C.;

LONDON AGENTS:—
Messrs. NUTTING & SONS, 106, Southwark St., E.C.;
OR

KENT & BRYDON,

SEED MERCHANTS AND NURSERYMEN,
DARLINGTON.

NOVELTIES

WORTH HAVING.

ASTER "COMET."

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As a Supplement to the "GARDENERS' CHRONICLE" for next week, Feb. 5, will be published an Ink-Photograph of a GROUP OF DECORATIVE PLANTS at Birmingham.

THE

Gardeners' Chronicle.

SATURDAY, JANUARY 29, 1887.

CATASETUM BUNGEROTHII.

[SEE SUPPLEMENTARY SHEET.]

THE appearance of this Orchid in a flowering state at Stevens' Rooms on December 16 last caused a flutter among the Orchidists. The figure in the *Lindenia* scarcely foreshadowed the beauties of this plant, and was indeed merely a reproduction from Mr. Bungeroth's rough sketch, intended as a mere memorandum and not as an accurate transcript. At the sale in question the best plant realised fifty guineas, and thus gave a lift to the whole of this beautiful, singular, but slighted genus. Passing in the mind the fly-like C. callosum and others of its section, in which the reflexed sepals and petals form the main feature; the singular C. cassideum, with its large helmet-shaped labellum forming the salient feature, the sepals and petals being very inconspicuous; the fragrant and pretty C. fimbriatum, with fringed labellum; the large and showy C. macrocarpum, the proboscis-bearing and often gaudily tinted C. naso; the singular C. tabulare, with curious ivory-like raised table in its shoe-like lip; the distinct C. scurra, with moustache-like appendages to its elongated labellum, and which was figured from Sir Trevor Lawrence's plant in the *Gardeners' Chronicle* (1877, March 10, p. 305); and all the other varying species which connect the types alluded to, nothing can be found near enough to class with the very fine introduction of the Compagnie Continentale d'Horticulture, of Ghent. The illustration, however, which was taken from the first plant which flowered in this country in the collection of F. G. Tautz, Esq., Studley House, Hammersmith, under Mr. Cowley's care, will be sufficient to convey the impression that Catasetum Bungerothii is worthy to occupy a place in the most select collections in virtue of its cup-shaped flowers, which are about 4 inches in diameter, ivory-white

of wax-like substance, and of great beauty and durability.

The sepals are lanceolate acuminate. The two petals stand erect instead of spreading laterally, and, with the upper sepal, form a sort of hood balancing the spoon-shaped lip on the other side. They have the same ivory-white colour, at first flushed with green, as the sepals but are broader and so close together as to touch by their inner edges and thus nearly to conceal the upper sepal. The broad concave lip is of the same colour as the other flower-segments, but the throat or entrance to the short conical spur is of an orange colour. The column is stout, the anther prolonged at the apex into a stout curved horn, while at the base are two slender curved horns (in other species, and doubtless in this also) so sensitive to impressions that, do but touch them, and out fly, with considerable force, the pollen masses. An insect, on food intent, attracted by the delicate perfume of the flower and the orange glow of the throat, alights on the flower, is guided necessarily to the honey-store in the spur, and in its progress must knock up against the spring-like antennæ, with the result above mentioned. Presuming that the pollen masses stick to the insect's back, as they would probably do, he would convey the pollen to the next flower visited, and so effect its impregnation.

Those who desire to know more of the doings of what Darwin called "the most remarkable of all Orchids" should read the sixth chapter of his work "On the various Contrivances by which British and Foreign Orchids are Fertilised by Insects," and if he is not impressed with a deeper sense of wonder and respect for plants and their ways in consequence, we shall think but lightly of his intelligence. Gardeners will remember the mystery of the flowers of the supposed distinct genera, Monacanthus, Catasetum, and Myanthus, all produced on the same scape, and how marvellous and inexplicable it all was till Darwin furnished the clue, and proved that the different forms of flower really represented different sexual states of the same flower.

We think it probable that considerable variation will be found in the flowers of C. Bungerothii, for we find that our notes taken from the plant sold at Stevens', and now in the possession of Baron Schroder, do not exactly coincide with the drawing made by Mr. Worthington Smith from the plant in the collection of Mr. Tautz. In particular we have no mention of the finely serrated edge to the lip shown in Mr. Smith's illustration. As the plant from which we took our memoranda was seen on a dark day in a gloomy sale-room raised above the eye, and out of reach, it is possible that our notes are not strictly correct, and that this plant also had the serrated edge to the lip. Had we seen it, however, we could scarcely have omitted to note so remarkable a feature.

As we have said, we are under great obligations to Mr. Tautz for permission to draw this flower. The plant forms one of the gems of Mr. Tautz's very choice collection, the general condition of which reflects great credit on Mr. Cowley, the gardener. Although growing a general collection Mr. Tautz has a special fancy for the genus Cypripedium, of which genus his collection is well-nigh complete. Some remarks on these plants are made in another column of this issue, while, for a full description of Mr. Tautz's houses we may refer to our previous volume, p. 725.

With respect to the Catasetums generally, it will not be saying too much to assert that the time has arrived when they should be taken in hand more earnestly by our Orchid growers, as they are really worthy of more attention; but if success is to be obtained with them, it must be in the same way as with other plants, viz., by giving them space to themselves, and treating them properly. Mixed up one here and one there, on the stages with other plants, they are never satisfactory. Catasetums like plenty of light at all seasons, and in their general culture they require much the same treatment as deciduous Dendrobes, viz., extra heat and plenty of water when growing, and a thorough season of rest with but little water (or none, unless signs of wrinkling be seen in the pseudobulbs) from the time the leaves turn yellow until the next growths appear; but during this resting time they should be placed in a good position on a shelf near the glass in a house in which the temperature ranges from 50°—60°, and in the culture they should be associated with Cycnoches and Mormondes. Where convenient, they may be well grown in baskets.

PLANTS NEW OR NOTEWORTHY.

MASDEVALLIA PUSIOLA, *n. sp.**

THE smallest Masdevallia yet known. It grows at St. Albans, in the Masdevallia-house of Mr. F. Sander, like a little weed amidst other Columbian Masdevallias. There it was discovered by Herr Oberhofgartner Wendland, who took the charming little thing to Herrenhausen. The small tufted lanceolate leaves are an inch long and the small flowers, standing on capillary stalks, scarcely equal a quarter of an inch in length. The flowers have a very strong abrupt mentum, and are deeply slit. The free parts of the sepals are equal in length to that of their tails. The petals are very peculiar, ligulate, bilobed at the apex, the one lobe being bent forwards; both lobes are blunt, triangular. Lip unguiculate, auriculate, on each side at the base, the anterior blade oblong sagittate. Column angulate on each side of the fovea, and tridentate at the apex. There is a transverse keel on each lateral sepal in front of the base, as in several other species. The colour of the flower is light sulphur. I saw the other day the original plant in its full grandeur or rather *petitesse* in uncommon health. If amateurs would arm their eyes with powerful lenses, what unexpected charms of over-rich Nature might they then delight in. *H. G. Rchb. f.*

DENDROBIUM STREBLOCERAS, *Rchb. f.; supra, Gard. Chron.*, 1886, *February* 27, p. 266.

A fine inflorescence of this very curious species is at hand, kindly sent me by Mons. Lucien Linden. It is eight-flowered, and the flower-segments are a little narrower and smaller than those of Dendrobium stratiotes. The chin is remarkably conical, acute. The sepals are ligulate acute, twisted, undulate at the margins in an uncommonly complicated and bewildering manner, light green, with five brown nerves at the inner side of the base, which become more and more confluent above, having, however, kept the green margin. The longer, linear acute petals are twisted four times, bicolor dark cinnamon-brown with green margins. The side-laciniæ of the lip are oblique, oblong, truncate, green outside, with thin brown nerves. There are two small angulate keels at the base. Five keels run out from the base. The two outer ones go only to the spot where the linear stalk touches the dilated central lacinia. The three inner ones run to the apex of the mid-lacinia, the middle one rises in an abrupt triangular lamella. The disc between the side-laciniæ, the stalk, and the anterior lacinia, are white. Some nerves, as also the edges of the keels, are of the finest mauve-purple, which affords a good contrast. The column is white, with rows of innumerable minute brown spots in front. It is peculiar looking, and widely distinct from, the great majority of Orchids. *H. G. Rchb. f.*

TILLANDSIA (VRIESIA) RETICULATA, *Baker.**

This has long been known in gardens under the names of Guzmannia reticulata, Tillandsia reticulata, and Vriesia reticulata, but appears never to have been described. It is a native of the province of Rio Grande do Sul, in South Brazil, and I believe was introduced about the year 1870. My notes upon it were made on a specimen that flowered with Mr. Bull in March, 1873, which was drawn for the *Botanical Magazine*, but never appeared, and on a plant exhibited by Messrs. Veitch at South Kensington in May, 1879.

Acaulescent. Leaves thirty to forty in a dense rosette, lorate-lanceolate, 1½—2 feet long, 3 inches broad above the dilated base, moderately firm in texture, nearly naked on both surfaces, copiously reticulated, with fine transverse lines of dark green on a pale green ground, deltoid at the apex. Peduncle as long as the leaves; bract-leaves many, entirely adpressed, scariose, pale green, ovate-lanceolate, imbricated. Inflorescence copiously panicled, a foot or more long; side-spikes erecto-patent, the lowest half a foot long; flowers erecto-patent, not crowded; flower-bract ovate, green, much shorter than the calyx. Calyx greenish, glabrous, 1¼ inch long; sepals oblong, obtuse, imbricated. Petals milk-white, a quarter of an inch longer than the calyx; blade orbicular, spreading; claw appendiculate with two large scales at its base. Stamens a little longer than the petals; filaments flattened; anthers lanceolate, basifixed. Ovary ovoid; style protruded beyond the tip of the petals; stigmas small, orbicular. *J. G. Baker.*

OXALIS CATHARINENSIS, *N. E. Brown, n. sp.*†

This very distinct species has been in cultivation for some years past, under the name of O. Regnelli, having unfortunately been so named, I am informed, by Professor Fenzl; but it certainly is very distinct from the true O. Regnelli, Miq., as I discovered this summer, when Dr. Hildebrand drew my attention to the plant. It is important to state this, because Dr. Hildebrand informs me that it is this plant which is intended under the name of O. Regnelli in the writings of Charles Darwin, Fritz Müller, and of himself, previous to this date (December, 1886); but in a paper which Dr. Hildebrand is now about to publish upon Oxalis, the error will be corrected.

This species was discovered in the province of Santa Catharina, South Brazil, by Fritz Müller, who sent seeds of it to Europe, from which plants were raised and distributed to various gardens. The plant is readily recognised by its scaly underground stems or rhizomes, having no bulb, and by the colour

* *Masdevallia pusiola*, n. sp.—Minuta, dense cæspitosa, foliis lanceolatis angustis; pedunculis capillaribus monanthis; mento egregio angulato; sepalis ultra basin versus fissis, triangulis, in caudas æquilongas excurentibus; tepalis bilobis, lobis triangulis inter se divaricatis, labelli ungue lineari basi utrinque auriculato, lamina sagittata oblonga; columna apice tridentata, juxta foveam utrinque angulata, carinulis semilunatis transversis utrinque ante basin sepalorum. Flores flavidi. U. S. Columbiæ. *A. G. Rchb. f.*

* *Tillandsia* (*Vriesia*) *reticulata*, Baker.—Acaulis; folii. 30—40 lorato-lanceolatis dense rosulatis albo-viridi reticulatis apice deltoideis utrinque vix lepidotis; pedunculo foliis æquilongo; bracteis ovato-lanceolatis imbricatis; spicis laxifloris copiose paniculatis; bracteis ovatis calyce duplo brevioribus; sepalis oblongis obtusis imbricatis; petalis albidis limbo brevi patulo; staminibus breviter exsertis, antheris lanceolatis. *J. G. Baker.*

† *Oxalis catharinensis*, N. E. Brown, n. sp.—The roots are fibrous, with or without a large ovoid, watery, tuberous root mingled with them. Rhizome branching, ¼—⅓ inch thick, densely covered with erect, thick, fleshy, broadly-ovate, acute, imbricating scales, which are flattish on the face, very convex and slightly keeled on the shining and punctate-dotted back, three-nerved when dry. Petioles 2—8 inches long, terete, pale green, glabrous, or very sparsely hairy towards the base, articulating immediately above the stipules, which are oblong, with free rounded apices, and membranous margins, ciliat, with rather long hairs. Leaflets three, triangular, subsessile, —2½ inches broad, cuneate at the base, truncate at the apex, with rounded angles and a very slight notch in the middle; bright green and glabrous above, paler or with a purplish tint, and minutely and sparsely hairy beneath, without any glandular dots, minutely and sparsely ciliate. Peduncles as long as, or a little longer than the petioles, terete, glabrous, umbellately 4—15-flowered. Bracts 1—1½ line long, glabrous. Pedicels ½—1¾ inch long. Flowers white, greenish just at the base. Sepals 2—3 lines long, lanceolate acuminate, with two minute glands at the apex; petals ½—¾ inch long, 1½—2 lines broad, narrow cuneate-oblong, obtusely rounded at the apex. The longer stamens are hairy and edentate. Ovary oblong, glabrous, ovules several in a cell. Styles free, hairy; stigmas capitate.

of its flowers, there being very few species of this large genus with white flowers. *N. E. Brown, Herbarium, Kew.*

NOTES FROM TRENT PARK, BARNET.

Peaches: Colour and Flavour.—In the glass department at this place I noticed, on the occasion of a visit made last autumn, that there have been considerable alterations within the last few years. One half of the principal Peach wall, with a southern aspect, has been covered so as to form two large lean-to houses. The internal arrangement consists of the usual path running the entire length immediately in front of the trees that cover the back wall, with trellises across the house which reach from the border to the roof, these are 10 feet apart, and at this distance sufficient light reaches the trees on the wall to keep them in a good bearing state down to the bottom. Needless, to say in houses devoted to the cultivation of Peaches it is a matter of the first importance that the arrangement should be such as will give the largest extent of surface on which to train the trees, keeping in view the necessity for the whole getting enough light to admit of the fruit colouring as it should do, for, although attempts are sometimes made with a view to show that high-coloured fruit is not the best flavoured such teaching is opposed to facts, for, even in the case of varieties of Peaches that are naturally pale, the more colour the fruit possesses the better flavoured it will be found. As additional evidence in this direction, it is only necessary to point to the fact that the side of a Peach or a Nectarine that has been sufficiently exposed to the sun and thereby well coloured, is often so much better when it comes to be eaten than the pale side that has been next the wall, that it might not have belonged to the same kind. There is no question that this old but now seldom seen arrangement of cross-trellises, when at the right distance apart, and in conjunction with trees on the back wall, affords the largest extent of surface that admits enough of the sun's direct rays reaching the trees to give the desired colour to the fruit. The crop in both houses was cleared, the whole of the trees were in fine condition, with wood hard and ripe, whilst the foliage was still as fresh and free from insects as it is usually seen in the spring. Another long lean-to house, facing eastwards, narrower than those described, is also filled with Peach trees, which are young, and confined to the back wall, which they have nearly covered. The crop was over, and the roots were freely pruned in the middle of September—in some cases the trees had been wholly taken up; like those in the preceding houses, they promise well for besring next season.

Vines.

Two low houses containing Muscat Vines have been thrown into one, and the roof raised much higher, A sight of these Vines would go far to dispel the idea sometimes entertained that making a new border, with the consequent lifting the roots, involves the sacrifice of a crop. The border is inside, and within the last twelve months a new one has been made; the greater part of the roots were lifted, and the Vines were bearing a full crop of medium-sized bunches, that had coloured to perfection. These Vines are old, but will doubtless now take a fresh lease. A strong old Black Hamburgh Vine, that has a house to itself, is in fine bearing condition, carrying a heavy crop of full-sized bunches. Another house adjoining contains three Vines alike in a fruitful state.

Orchids.

A select collection of Orchids is in course of formation. One house is principally filled with Odontoglossums and other cool kinds; these are growing well. Some of the plants are making their first or second growth since being imported; others have been longer established. In another house containing kinds requiring more heat are various species of Aërides, Saccolabium, Vanda, Phalænopsis, and others in thriving condition. There are also a number of Dendrobiums remarkable for the size and strength of the growth they have made. A row of D. Wardianum growing in baskets suspended from the roof have bulbs from 3½ to over 4 feet in length, and proportionately thick. The substance in the leaves, and prominence of the nodes, are such as give a forecast of the great amount of the flower crop.

In a lean-to house, the back wall of which is occupied by Fig trees, there is a row of Dendrobium nobile temporarily located whilst the growth is ripening up. These show what can be done in the way of increasing this pretty Orchid when the treatment is such as it requires. About eight years since Mr. Baxter commenced with a single bulb that had produced growths at the nodes, in the way this species usually does. From this small beginning the stock now consists of twelve plants, from 2 to 2½ feet in diameter; numbers of the bulbs are over 2½ feet long, and of proportionate strength—an example of successful Orchid growing it would not be easy to excel.

Miscellaneous Plants.

Zonal Pelargoniums to bloom in winter are well done, many of these being seedlings raised by Mr. Baxter, and among them are several varieties of shades of colour, and which at one time, when the varieties of Pelargoniums were less numerous, would have been looked upon as a wonderful advance.

Of Amaryllis many fine kinds have been raised; the stock is a large one, consisting of named varieties and selected seedlings. The conservatory, which adjoins the mansion, is well furnished with large Tree Ferns and other plants, with Tacsonias and other climbers draping the roof,

Pot Roses, of which there are a large number very well grown, are a leading feature in the early part of the year.

The Flower Garden.

The arrangement of the beds differs from the geometrical designs usually observed. Beds are comparatively few in number, and large and irregular in shape. Each bed was filled with various kinds of plants in masses, the whole arranged so well that there was an agreeable diversity in form and harmony of colour. The Rhododendrons were a feature in themselves, clothing the surface thickly under the old trees with which the pleasure-grounda bounds. Recently, wide openings have been cut through the groups of these plants in places, so as to secure glimpses here and there of the lawn in the direction of the lower lake. This is a manifest improvement.

On the north side of Mr. Baxter's house, which has recently been rebuilt, Tropæolum speciosum was growing most luxuriantly, and reaching a height of 14 feet. This brilliant climber is not often seen in this part of England in so fine condition as it is here. The plant is often said to be unsuited to the south of the kingdom, but the way it grows at Trent Park is sufficient evidence that a northern aspect, good soil, protection from wind, and sufficient water, are all that is necessary to induce it to thrive and flower abundantly.

Open Walls.

Peaches on the open walls were bearing well. Here again it was evident that there need be no loss of time when the border has to be renewed; last winter a new border was made, most of the roots being lifted, but no trace of the disturbance was apparent.

Apricots.—Of these an unusual quantity are grown. The trees occupy a west wall in the kitchen garden, about a hundred yards in length; they are in fine condition, and bear well.

Rubus laciniatus (the Parsley-leaved Blackberry) is well managed here; it forms a row across one of the quarters of the kitchen garken, and bears profusely. After fruiting, the shoots that have borne are cut away from the bottom, the young current season's growths are retained their whole length—often 10 or 12 feet: these are trained to a wire running horizontally about 2½ feet from the ground.

Of Plums, as elsewhere, there was a superabundance.

Some varieties of Pears were heavily laden, whilst Apples were much more plentiful than in most places,

Laxton's Open-air Tomato, growing against a wall. literally formed ropes of fruit, which covered the shoots from the bottom of the plants to their extremities. It is a medium-sized variety, and an extraordinary bearer. *T. B.*

THE HERBACEOUS BORDER.

OUTDOOR AURICULAS.

The distinction drawn between outdoor Auriculas and those in pots is, that whilst the former are treated pretty much as other hardy plants are, the latter, whilst still hardy in habit, yet receive care and attention equal to what would be demanded by Orchids, perhaps even more so. That so much care is bestowed does not arise from the absolute necessity of the case, but rather because the house culture of these hardy plants seems to breed in those tending them a sentiment amounting to strong affection. As evidence of this a story is told of a well known and eminent Auricula grower who never could be induced to take a holiday. However, on occasion he felt compelled to attend a daughter's wedding, but lo! in the afternoon, tired speedily of such dissipation, he was found amongst his pet plants far happier with them than in the pursuit of human enjoyments and frivolities. Really, it is not wise for any one to embark in the culture of choice Auriculas unless he can do so in a spirit of love and devotion, The needs and requirements of the plants must have first consideration if they are to be effectively and satisfactorily grown, and if not well grown they are poor things indeed. But with hardier border kinds—and these include alpines of the stronger habits, laced and fancy sections, with a further heterogeneous race, which it is hard to define—we find Auriculas thriving wondrously well even under adverse circumstances. When, last winter, all other hardy plants, border Polyanthuses, and similar things included, were burnt or seared with frosts and biting winds, a big batch of laced Auriculas out in the open field were as green and vigorous as if in a frame; literally they seemed to revel in the cold, which proved so injurious to other things. They have stood through the heat and drought of two summers in just the same way, utterly regardless of the afflictions, and seeming again to like them. Neither frost, snow, heavy rains, nor summer heat seemed to affect them in the least, and the plants are now big clumps in most cases. A batch of later sown plants put out in an equally exposed position have stood equally well, and threw up an abundance of flowers, but the hot sunshine of autumn soon withered them. Most certainly the blooms suffer under heavy rains, and equally so under hot sunshine, and, after all, the great aim of the grower of Auriculas under glass is to preserve his plants from these imperious elements, and enable the blooms to develope their fullest beauty.

As a rule Auriculas in the open ground, remaining restful rather later in the spring than do pot plants under glass, give their bloom rather later, hence they more often drop in fine spring weather. With the bulk of plants in this district, May is the chief outdoor blooming month; but many plants will open flowers early in April, so that the season extends some two months at least. The soil here is a retentive loam—that is to say, it is very retentive of moisture during the winter, but bakes freely in hot weather. Thus the changes in the nature of the soil are as diverse as are those of temperature in the air—and yet through all the Auricula seems to be happy. Perhaps it may be not inaptly described as a happy-go-lucky sort of plant, that has the useful faculty of being ready to adapt itself to all sorts of

circumstances and conditions. If during the summer the surface about the plants is slightly loosened with a fork—one is afraid to say a forking, lest some one should accept the advice too literally, and in doing so dig the soil too deep, to the exceeding danger of the plants (the surface should be merely stirred)—a top-dressing of old pot soil, cocoa-fibre refuse, leaf-soil, or some well decayed manure from an old hotbed, will do great good, promoting surface rooting, and the formation through these roots of strong blooming crowns. It must not be assumed that because Auriculas are such very accommodating plants that therefore they want no manuring. Really rich soil is not at all essential, but if the other extreme is starvation, then it is far wiser to hit the happy mean, and make the soil moderately good.

Plants of the border kinds whether laced, fancy, or what not, are easily raised from seed, which may be sown anywhere under glass, and if it suits the fancy at Christmas or at midsummer. In either case it will assuredly grow somewhere, provided the seed at the time of sowing is sound. The seedlings, let the kind be what it may, rarely grow fast; they are indeed rather slowcoaches, showing something of the tortoise rate of speed—slow and sure. Now I, for convenience sake, as much perhaps as for any other reason, usually sow in shallow pans about March, standing them in a cool house and fairly near the glass. Generally the seed germinates a little too thickly, for we all indulge in the common failing of being too freehanded with seed. However, when the plants are crowded they are very carefully lifted and dibbled out into shallow boxes, nay even the shallow lids of cheese boxes are thus utilised, and they remain in them until favourable weather in the autumn admits of the final planting out into the open ground. The dibber is usually the instrument employed for this work, for, well handled, it is one of a very useful kind, and enables transplanting of this nature to be soon got over.

Just one thing in relation to outdoor Auriculas merits attention—we want kinds producing bold well-coloured flowers, growing from stout erect stems. Many beautiful flowers are too modest, and blush or hang their heads before the gaze of man. It is in such cases that a little boldness becomes a virtue. *A. D.*

THE FLOWER GARDEN.

BEDDING-OUT PLANTS.

THE stock of bedding plants should be looked over as frequently as possible, and all decayed leaves removed. The surface of pots and boxes should be scratched over to rid them of moss, and to keep the soil sweet. Old Pelargoniums should be kept dry until they break, which they will do in a cool structure. Give only sufficient heat to exclude frost. On a sunny day a little extra heat should be given, and full air put on to drive out any damp. Heat should be applied as soon as growth begins and a good watering should be given.

The bulk of stove plants should be placed into a nice growing atmosphere, to induce a fresh growth, to yield a crop of cuttings. Preparation should also be made for propagating the same as soon as ready. The propagating-house should be well cleansed, the drainage over the pipes looked to, and a good layer of sawdust placed on the top to receive the cuttings. Cocoa-nut fibre refuse makes a capital medium for rooting cuttings in, much better than sand as the roots emitted into the fibre are more robust than those in the sand, and they do not sustain so much damage in the processs of potting.

PROPAGATION.

Many people have not the convenience of a propagating-house, and resort has to be had to a hotbed. A cartful of long horse manure, and three cartfuls of leaves will make a capital bed for a two-light frame. Well mix the dung and leaves, throwing into a conical heap, and keeping them as loose and open as possible. Let the heap be twice turned at intervals of three days. In other three days it will be fit to make into a bed. Spread the material evenly over the necessary space. Well tread as the work of building proceeds, to secure an equal subsidence, and when finished place the frame on the top. Place about 6 inches of cocoa-nut fibre inside the box for the purpose of plunging the pots.

A batch of single Dahlias for early flowering may now be sown, also a quantity of Hollyhock; if these are grown on and well attended to, they will bloom nicely in autumn. Some good strains are now to be had of this stately plant. Out of a large packet last year there was not one that had single flowers amongst a hundred which were kept.

OUT-OF-DOORS OPERATIONS.

The late frosts may have loosened some of the recently planted Pansies, Daisies, &c. These should be looked over now the fresh weather has set in, and they should be made firm. The Dutch hoe should be run through beds of Wallflowers and other plants, when the ground is in a fit state, to loosen the surface. Should black frosts set in, the loose surface prevents the frost penetrating so far into the ground. The coverings used for protecting annuals and other subjects should be removed every fine day, to allow the plants all the sun and air possible, as the most trying season of the year has to come yet, when the solar heat returns, but sharp morning frosts are frequent, often accompanied by keen cutting winds.

A packet of Verbena venosa should now be sown for early blooming. This is a plant which is not sufficiently appreciated, certainly not so much as it deserves to be. Planted with Cinereria maritima, or silver-leaved Pelargoniums, it makes a charming combination. It may be struck from eyes of the fleshy roots. If these were saved, sometimes they remain quite fresh in the beds all winter, if the frost has not been too severe,

SEED SOWING.

A good pinch of the various kinds of Foxgloves may also be sown in heat. Where there are large beds to be filled at a considerable distance from the walks, these are the most effective plants for the purpose I know. Where blanks are found in woodland glades, they are only second in importance to the Hollyhock. If once they are sown, and the seed-pods are allowed to mature, they will soon cover every inch of vacant space, and repay the little trouble expended on them with glorious results.

PLANTING SHRUBS, &c.

As soon as the ground is again in workable condition, the planting operations which were stopped by the late storm should be resumed, as well as the formation of lawns, walks, laying of Box, &c. The lengthening of the days will now allow of all those operations proceeding more rapidly. Newly planted trees and shrubs should receive a good mulching of any loose material over the roots, to prevent the escape of moisture; especially in heavy

FIG. 32.—CATASETUM BUNGEROTHII, TO SHOW HABIT. (SEE P. 139.)

FIG. 33.—CYPRIPEDIUM BOISSIERIANUM.

clay lands is this is a necessity, as they are so liable to crack during hot, dry weather. Ground intended to be sown with grasses should be put in a forward state, so that all the lumps may be pulverised by the action of the weather. This will save a vast amount of labour in rolling, raking, &c.

Roses if not already planted, should be seen to as soon as possible. Let the ground be deeply trenched and amply manured with good cow or pig manure. A liberal addition of good sound loam should be added if the soil be light and gravelly. If the soil be heavy, such as the bulk of Roses prefer, a liberal quantity of charred rubbish or soil should be added. Choose a good fresh sunny day, if it can be had, for the purpose of planting. Open the pits for the reception of the plants as early in the morning as possible, so that the sun may warm the soil. Trim all the roots neatly at their extremitities with a knife. As each plant is set in its place, a few spadefuls of a nice sharp compost should be given over the roots of each plant. In the case of standards and climbers, they should be staked and tied as the work proceeds. *William Baillie, Luton Hoo Gardens.*

MR. TAUTZ'S ORCHIDS.

IT is a great advantage to horticulture when some *connoisseur* brings together as many forms and varieties of one particular genus as he can do. It is one thing to study herbarium mummies; it is quite another thing to compare the same plants glowing with colour and instinct with vitality. Mr. Tautz's collection, at Goldhawk Road, Shepherd's Bush, is specially rich in species and varieties of Cypripedium, and on a recent visit we noticed in flower, in addition to various Lycastes, Lælias, Odontoglossum maculatum, Angræcum cordatum, and Lycaste lanipes, the following Cypripedia:—C. Daucheri var. marmoratum, the broad dorsal sepal of which has a yellowish ground colour singularly streaked with purplish rays. C. Marshallianum, with pale rose-coloured flowers thickly besprinkled with small purple dots, as on the under-surface of the leaves. C. vexillarium, the rosy-lilac flowers of which remind one of a soldier standing at attention with his arms by his side, the lateral petals being directed downwards. C. Petersi (more correctly C. Petri), with the dorsal sepal white, traversed with green nerves and purplish petals. C. callosum, a magnificent flower with very broad upper sepal, white with purple veins, lateral petals spreading, oblong obtuse, with a few tufts of purplish hairs on the edges, as in C. barbatum. C. pardinum, with green dorsal sepal and darker tinted nerves of the same colour, oblong petals, greenish at the base, shading off into dull pink towards the tips, and with dark purplish spots. C. Boxalli var. atratum, a remarkable flower, with the glossy dark green upper sepal richly purple-spotted, and with a white edge. Other species in flower were C. Williamsi, C. concolor, C. politum, C. Schlimii, C. Sellierianum.

C.Boissierianum, of which we give a figure taken some weeks ago (fig. 33), is now out of bloom. This curious and rare plant belongs to the Selenipedium section, rendered so familiar to us in the varieties of C. longifolium, from all of which, however, it is distinct, as will be seen by reference to our illustration. Among the chief distinguishing features will be seen the rounded and structurally different labellum, and the curiously twisted and horizontally extended petals. Although not a showy flower there is ample beauty in the flowers of this species, which are yellow-veined and tinged with bright green, the edges of the petals and other dark markings shown in our illustration being brownish-crimson. As an easily cultivated plant, and one which is presentable either in or out of flower, C. Boissierianum is a subject worthy of attention.

THE LATE MR. JOHN F. MCELROY.—We are requested to state that Mr. MCELROY was the Secretary of the United Horticultural Benefit and Provident Society for the space of fourteen years, and not for eight only as stated in the notice concerning his death.

WILLOW GROWING.

FORMATION AND MANAGEMENT OF OSIER BEDS.—Not a few persons labour under the very erroneous and misleading notion that, in order to cultivate Osiers successfully, all that is required is to push cuttings into a half-prepared morass or swamp, or, in fact, in any piece of ground that is worthless for another crop. That such notions are as absurd as they are impracticable is well known to every one who has studied the matter; in fact, the three great secrets of successful Osier culture are—first, thorough preparation of the ground; second, planting with only the best kinds of Willows, and such as are suitable for the particular soil and exposure—for be it remembered that the soil and situation that are suitable for one class of Willows is just as unsuitable for others; and, third, maintaining a thorough clean state of the beds for at least the first three years, after which time the strength of the Willows will, in most instances, overcome the undergrowth.

THE GROUND AND ITS PREPARATION.

Where choice of situation is to be had, as will be the case on most estates, that of a low-lying, level nature is preferable, more particularly if this be a naturally moist, rich alluvial soil. Again, although it may not be an absolute necessity, ground that can be watered or irrigated at will has special advantages over such as cannot, for during the dry summer months an occasional flooding of the Osier beds is productive of the very best results.

Having decided on the situation, the next all-important matter is the thorough drainage of the ground, for although Willows, speaking broadly, are natives of moist—nay, even wet soils, yet to be successfully grown for profit in basket-making it may be well to bear in mind that they survive in dry soil, flourish in that of a moist nature, and, in the majority of cases, die out altogether where stagnant water is allowed to remain at their roots. In soils of a wet, retentive nature it will, therefore, be apparent that complete drainage should take precedence of all other operations, and that to a greater or less extent, as will soon be found out after a careful inspection of the ground has been made, for no hard and fast lines can be laid down that would be applicable even in a few cases. Open drains are to be recommended, these being of such a width and depth and placed at such distances apart as will preserve the ground in a dry, sweet state even during the most unfavourable weather. Trenching the ground to the depth of 18 inches or so should next be engaged in, all obnoxious weeds being at the same time carefully picked out, more particularly those of the Couch-grass and Bindweed, or Wild Convolvulus.

THE BEST WILLOWS FOR BASKET-MAKING.

When it is stated, and that after careful computation, that no less than about seventy kinds of Willows are cultivated in this country for basket-making, the planter's choice will seem to be extensive; but such is really not the case, for less than a dozen kinds include such as are really valuable and preferable for profitable planting. The most generally cultivated as well as most vigorous growing of basket Willow is Salix viminalis, while other good kinds are S. triandra, S. Forbyana, S. purpurea, and S. stipularis, to which might also be added such small growing kinds as S. vitellina, and S. Helix. A score of others might be enumerated, but those given are about the best, and only the best kinds should be grown if it is intended to have the best return for cost of culture and ground-rent. Foreign importations, those from France and Belgium in particular, have very considerably lessened the profits of Willow growing in this country, and that even within the past few years, so that under existing circumstances it will be readily enough seen that not only the best materials but the best system of management must be resorted to to make Willow growing at all remunerative in this country at the present time.

MAKING AND PLANTING THE SETS.

The cuttings, or sets as they are more generally termed, may be of lengths varying from 12 inches to 18 inches, but a medium between these two is that usually employed, for the planter must be guided to a great extent as to size of cuttings by the nature of the ground he is about to operate on, that of a rough, lumpy texture requiring longer and stronger than where the land is level of surface, as is likely to be the case if a crop of Potatos has been grown on the ground previous to cropping it with Willows.

It might likewise be noted in passing, that we have seen this system of ground preparation, by first taking a crop of Potatos or Turnips, carried out with good results on several small farms in the North of Ireland. The Potato crop, especially if kept free from weeds, leaves the ground in a nice, clean, and level state for receiving the Willow sets, and if properly looked to afterwards, and at the right time, ground so treated will cost but a trifle to keep it in good tilth and clean for a number of years. Another advantage of preparatory preparation of Willow ground by first of all taking a farm crop from it is this, that a heavy coating of farmyard manure can better be applied, the good results of which will be apparent on the succeeding crops of Osiers for a number of years.

Good Osier sets ready for planting may be procured from any respectable Willow grower at about 10s. per 1000; we have known 20s. per 1000 paid, but a better, as well as cheaper, plan is to purchase a ton, or whatever may be deemed sufficient for the ground to be planted, of the Willow rods, and have them prepared on the ground. In making the sets—which as before stated should be 12 inches and upwards in length—commence at the butt ends of the rods, and with a sharp knife cut into the lengths required, repeating the process only as long as the wood is hard, or nearly destitute of pith, that towards the point being cast aside as useless for the purpose in view. Next arrange the sets according to strength, place the eyes all one way, and tie into bundles. In planting the sets use a common garden line, and place them 16 inches apart and 2 feet from row to row, this being a good uniform rule for the larger growing kinds; while the finer sorts may be planted 10 inches, or even 8 inches apart.

Close planting in the case of basket Osiers is certainly to be commended, as when allowed too much space they grow strong, rank, and bushy; but the quality of soil, as well as particular sort of Willow to be planted, can alone determine the distance apart which the individual cuttings should be placed. February may be considered as about the best month for planting, although in not too cold soils good results have followed the insertion of the cuttings even a couple of months sooner. *A. D. W.*

(To be continued.)

THE HARDY FRUIT GARDEN.

GOOSEBERRIES ON TRELLISES.

THESE are in most fruit gardens a useful adjunct to the fruit bushes in quarters, and are much appreciated for the ease with which the fruit can be plucked. By growing a good quantity of the different varieties in this way the supply can be extended over a lengthened period, as the bushes are easily netted and preserved from the predatory birds. To form the trellises use posts of hard durable wood, which place at a distance of 10 feet asunder; through holes pierced in these pass four (at a foot apart) galvanised wires. In this garden there are three of such trellises, which are placed 6 feet apart, and are 50 feet long. In pruning the bushes on these trellises the young growths should be well thinned out annually, and a good quantity of the old wood should also be cut away, tying in an equal quantity of the young. After properly fastening the wood to the wires in a fan-shaped fashion prick up slightly the soil between the rows and around single bushes, and give a good mulching of short manure.

OUT-OF-DOORS VINES.

These should be grown in most gardens, if for no other purpose than for supplying leaves for garnishing purposes, thereby relieving the Vines grown under glass, which are frequently made to suffer from denudation of foliage. The Vines should now be pruned, young wood being left where there is sufficient space to lay it in, cutting out some of the oldest wood to make room for it.

NEWLY PLANTED TREES.

Those on walls should be left loose for the present, and until the roots get settled down; leaving the training of them as late as possible. Those in the orchard should be lightly tied to stakes, placing a piece of cloth or other soft material round the stem to prevent injury to the bark, the final ties being given when the ground has settled down. The stems of young trees must be protected from game, by tying old bagging or mattings round them from the ground line up to 2 feet of the stem. *Edward Ward, Hewell, Bromsgrove.*

THE APIARY.

FEEDING BEES.

AT last there seems to be a break in the very severe frost, and on January 19 my bees went out for a cleansing flight. It may be that some of the bees are running short of stores. If there is any reason to suppose that to be the case, do not fail to attend to them as soon as fine warm days set in. Do not on any account meddle with them on a cold day, and do not give them liquid food. I have frequently had the pleasure of mentioning the name of Mr. S. Simmins, of Rottingdean. He keeps some hundreds of hives, and therefore his words must be weighty. In the last number of the *British Bee Journal* he says, that if necessary food must be supplied the best place to supply it is on the top of the cluster. Now, candy has hitherto been thought the only safe food at this time of the year, but, as friend Simmins says, nothing is more difficult and expensive to make. He therefore gives the following advice, which I shall try myself at the first opportunity:—Go to a hive in the middle of a fine warm day, take off the roof and gently but rapidly uncover the bees. Place a piece of newspaper over the frames, and then lay several pounds of Porto Rico sugar on the paper. Press it down all round and then cover up warm, and replace the roof. If the colony is strong, the bees will at once find their way through the paper, and will commence operations on the sugar; but if the colony happens to be weak Mr. Simmins advises that a slit be made in the paper as a start. The sugar being pressed down all round will keep the warm air from escaping, and this warm air and the moisture of the hive will cause the sugar to dissolve just as it is required. The bees will eat the sugar, and there will be an outside crust left untouched. This crust, says Mr. Simmins, gets so hard that it will support the weight of a strong stock of bees. This being the case, cooking pots and candy will no longer be required.

The method seems to be simplicity itself. Do not, therefore, lose a stock of bees for the sake of a few pounds of sugar. Remember, too, that the bees begin to breed in January, and that directly breeding commences large quantities of food are consumed. It is well known, too, that the queen only lays eggs in proportion to the available food; therefore, if you require strong stocks stimulate them now, but of course, if you are sure they have enough, let them alone. I have just received a hive from the North of Scotland, and my next article will be on Scotch bee-keeping. *Walter Chitty, Pewsey.*

BEES DECEIVED BY APPEARANCES.

A correspondent, writing on bee-flowers, sends us the following well-worn story, which we reprint as a test of the credulity of our younger readers:—

"A celebrated Dutch painter, when he was but a youth, fell in love, and wooed the hand of the only

daughter of his neighbour, who happened to be an artist and an oddity; so much so that he, like Turner, could never be got to allow any one within his studio; yet one day, in his absence, Love prevailed, and got the better of locks and keys. The subject on the easel being 'Fruit,' young Scheffer (I may be wrong in the name) saw the opportunity, painted a wasp on the fruit, and had just finished when a noise was heard at the door. In a moment the truant dashed behind a screen, and when the old man entered—who became delighted at the idea of his 'natural works' having deceived the bees—yet taking his handkerchief to rub it off, to his astonishment found it a fixture. He at once called the fair one for an explanation. Her blushes betrayed the hidden Abelard. The old man saw all, and owned himself vanquished. This story, I think, is told us in the *Tide in the Affairs of Man*, the aspirant being no less than the afterwards celebrated Ary Scheffer. This being a case of self-deception in man, still I could tell of how the floral chromoliths executed by Severeyns at Brussels actually lured a big humble-bee. It was attracted by the odour of a Melon into a certain seed warehouse in Cork, and for fully three minutes—being very hungry from smoky city life—wanted to get food from the artificial flowers on Mr. Benary's plates that were framed for illustration in the warehouse. [Are you sure it was not the *Gardeners' Chronicle* Almanac? Ed.]. Here are clear cases of self-deception in man and insect,—the one certainly a question for another Müller." *H.*

Plants and Their Culture.

DECORATIVE TABLE PLANTS.

In most gardens plants for this purpose have to be provided to meet wants during the autumn and winter months; a suitable miscellaneous collection has, therefore, to be cultivated each year, and while every place has some particular demand in this way, in most of them a portion of the plants are required in pairs. In forming a collection there are numerous graceful subjects to select from that can be obtained at a moderate cost, while some of them may be propagated with little difficulty. The present time is a fit one for commencing by preparing a case for the purpose. An ordinary frame answers admirably if placed upon a bed, retaining a heat of 85° in a house where a brisk stove temperature is to be had.

Dracænas.

In dealing with Dracænas the best material from which to raise well furnished plants is the highly coloured heads of those that are past being serviceable. These should be taken off and firmly inserted in 3-inch pots filled with fine sandy peat, with sand on its surface to exclude the air. Plunge the pots up to their rims in the case, and they will be soon moderately well filled with roots, when the plants should be gradually inured to the air of the house, and shifted into 6-inch pots. The following are useful sorts:—D. gracilis, D. norwoodiensis, D. Guilfoylei, and D. Lindeni; the last-named in a young state is beautifully marked, but with us it loses its colour with age.

Crotons.

Of these C. angustifolius, C. tortilis, C. Chelsoni, C. Johannis, and C. Weismanni, when quickly grown on from healthy strong cuttings make graceful specimens.

Various.

Old plants of Reidia glaucescens cut down now will soon break and produce cuttings which will readily root and grow into pretty plants by the autumn. This remarkable plant is most useful for the breakfast and luncheon table. Young plants of the variegated Curculigo are very distinct and graceful, and are easily increased from suckers, as are likewise the variegated Ananasa (Pine-apple), Pandanus Veitchii, and P. graminifolius, all of which are desirable. In taking suckers of P. Veitchii, those that are best coloured should be selected. To the above should be added Aralia Veitchii, its variety gracillima, and A. leptophylla; the elegantly cut foliage and erect habit of these impart to them a light and pleasing appearance. Amongst Palms the following should be included:—Cocos Weddelliana, Geonoma gracilis, Areca lutescens, and Euterpe edulis. Add to these some Ferns, such as Lomaria ciliata, L. gibba, Onychium auratum, Adiantum cuneatum, A. gracillimum, and the golden and silver Gymnogrammas, all of which for this purpose form the prettiest plants when raised from spores, and a useful group will have been obtained, although some equally worthy are omitted. Those enumerated thrive in stove temperature, and their colours are best brought out where they are placed on beds near the glass, where they should at no time be heavily shaded (the Ferns excepted), and be afforded free space, and turned weekly to keep them symmetrical in shape. *Thomas Coomber, Hendre Gardens, Monmouth.*

Orchid Notes and Gleanings.

SACCOLABIUM BELLINUM.

One of the prettiest and most interesting Orchids in the Kew collection is the one now noted. It is a recent introduction from Burmah, and probably the only figure is in Williams' *Orchid Album*, iv., t. 156. In habit the plant is dwarf and compact, and the large and beautifully marked flowers are borne on decurved peduncles; the sepals and petals are straw-coloured blotched with dark brown, and the large white lip—spotted with mauve, purple, yellow and red—is beset with a number of thread-like processes

Platyclinis.

Two of the species of the genus, viz., P. Cobbiana and P. uncata (perhaps better known under the incorrect generic name of Dendrochilum) are now finely in flower in the Kew Orchid collection. Both are peculiarly graceful in habit, and in spite of the small size of the individual flowers in comparison with those of the more widely grown popular Orchids, are certainly desirable plants. The slender, arching, pendulous spikes are produced in profusion by well grown plants, and the flowers in number make up for their smallness in size. Both the species above-named come from the Philippine Islands. *G. N.*

Eulophia scripta.

This rare old Orchid is not very frequently seen in cultivation, and in 1878 Professor Reichenbach wrote that only once had he seen fresh flowers. A small importation has, however, recently reached this country, and as it is certainly a pretty plant, it may become more common. The pseudobulbs are very singular, just like those of a Catasetum. The flowers, which are borne in panicles, and appear in advance of the leaves, are greenish-yellow, with purple-brown blotches, except that the lip has some white near the base, and the two-lobed callus is of this colour. The front lobe of the lip is crowded with small warty protuberances. It was described long ago from Mauritius, and it is interesting to find that it also occurs in Madagascar. A fine clump of it exists at Kew, and a panicle of flowers is now to be seen there.

Maxillaria picta.

This is one of the more showy members of the genus, the flowers measuring over 2 inches in diameter. The sepals and petals are of a deep yellow inside, with a little dusky shading on the margin, but outside they are straw colour, spotted and marked with numerous purple markings. This peculiarity is well shown in the figure of the *Botanical Register*, t. 1802, also in the *Botanical Magazine*, t. 3154. The column is deep crimson-purple. I have recently seen the much smaller, paler flowered, but still pretty, M. punctata, doing duty for it in collections, which certainly should not be the case. Both are natives of Brazil. Several fine flowers were recently forwarded by Mr. Dodman, gardener to E. Evans, Esq., of Witley, for determination.

Coelogyne lentiginosa.

A handsome and free-flowering species, and one of the best of the erecta section. A fine plant may now be seen in the Kew collection with several racemes of flowers. The plant has this peculiarity, that part of the racemes have the ground colour of the flowers a very deep bright yellow, while the remainder are pale straw colour—a feature which renders it very striking. In either case the front lobe of the lip is adorned with a large orange blotch, and the side lobes margined with deep purple-brown. It is a native of Moulmein, and is figured at t. 5958 of the *Botanical Magazine*. The colouring, however, of this figure is wretched, the sepals and petals being painted green. The lithographer appears to have been short of yellow, and so used the same colour as that used for the pseudobulbs.

A New Cypripedium: C. elegans.

This interesting genus of Orchids is apparently not yet exhausted, as we notice a new species described by Professor Reichenbach under the above name at p. 561 of the *Flora* for 1886. It is an extremely interesting species, though perhaps not likely to be much sought after as a garden plant. It is a member of the Diphylla group, and has the habit and appearance of the Japanese C. debile, but the flowers are a little larger than in that species, and the stems are very villose, instead of being glabrous. C. elegans is a native of Tibet, and was collected by one of Dr. King's collectors for the Calcutta Herbarium. C. debile is a remarkable species, its habit being so diverse from all others, except the new one; and this fact renders the close resemblance between the two additionally interesting, as indicating a common origin for the two, now so widely separated in geographical position. The flowers of both are of a dark purple judging by the dried specimens. *R. A. R.*

RUELLIA AFFINIS.

It may be just worth asking why this showy and useful winter blooming plant has gone out of cultivation? It must be but little known or grown; it is not to be found in any trade list or catalogue, neither was it at Kew until I sent cuttings recently, and, judging by the applications I have received making enquiries respecting it, many would like to grow it This no doubt arises from the figure you gave of it in your issue of January 1. I refrained from adding any notes on its cultivation, nor can I now add much thereto after your interesting notes on its cultivation and history; but we may hope that some able cultivator would give us his experience This being absent, has induced me to give my method of culture.

We have grown this species of Ruellia here for seven or eight years. At first we grew it in pots, but from want of a suitable place we could not induce it to bloom freely, and only obtained a few blooms. It grew very well and was healthy, but having to be associated with other plants that needed shade and moisture the wood never got ripened. After trying it in different ways in pots, having a small space at the end of our small stove, I determined to plant it out, and train it to wires on the roof on the south side. A good strong plant of it was planted out, which soon made satisfactory growth. It blooms every season satisfactorily, and over a long period of scarcity of bloom, from September to February. Standing under it on a stage are a few Orchids, such as Cattleyas, Lælias, &c., which get a little shade on very bright summer days; this is all the shading it has. It would not be shaded at all if it were not for the Orchids. On the same roof and growing by its side are Stephanotis, climbing Clerodendrons, and Allamandas; on the opposite side we have Euphorbia Jacquiniflora and double flowered Hibiscus. We have only a small space devoted to the Ruellia, as our stoves are small, and the varieties of plants numerous. All flowering plants are highly prized by the proprietor of this garden, who is a great enthusiast in all gardening matters.

Mr. Gumbleton, of Belgrove, Queenstown, Ireland, writing to me recently respecting it, spoke of growing this Ruellia many years ago, and finding it a shy bloomer; and so it is when grown in pots and when the growths not ripened. In conclusion, let me advise all who wish to succeed with it to give it plenty of air and time to ripen it; keep the foliage clean, and give it good supplies of water when growing, and a good stove temperature. *J. Crook, The Grange, Farnborough.*

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APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

MONDAY,	JAN. 31	Society of Arts (Cantor Lectures): "Diseases of Plants, II.," at 8 P.M.
TUESDAY,	FEB. 1	Horticultural Club: Sub-Committee, 2 P.M.; General Committee, 5 P.M. Annual Dinner, 6 P.M.
THURSDAY,	FEB. 3	Linnean Society, at 8 P.M.

SALES.

MONDAY,	JAN. 31	20,000 Liliums, &c., from Japan, at Stevens' Rooms.
TUESDAY,	FEB. 1	Imported Orchids, at Protheroe & Morris' Rooms. Clearance Sale of Nursery Stock, at the Springfield Nursery, Sunbury, by Protheroe & Morris.
WEDNESDAY,	FEB. 2	Plants from Ghent, and Roses, Fruit Trees, Shrubs, Border Plants, &c., at Stevens' Rooms. Lilium auratum, Roses, and Other Plants, at Protheroe & Morris' Rooms.
THURSDAY,	FEB. 3	Importations of Orchids, from Mr. F. Sander, at Stevens' Rooms. Sale of Plants, Tools, &c., at The Chestnuts, Lavender Hill, by Protheroe & Morris.
FRIDAY,	FEB. 4	Imported Orchids, at Protheroe & Morris' Rooms.
SATURDAY,	FEB. 5	Plants from Ghent, and Roses, Fruit Trees, Shrubs, Border Plants, &c., at Stevens' Rooms. Roses, Lilies, and other plants, at Protheroe & Morris' Rooms.

The Profits and Losses of Fruit Growing.

Now that the daily Press, and notably the *Daily News*, has taken the matter in hand, the subject of Fruit Growing may probably be threshed out thoroughly, and to useful purpose. The mere fact of so much space and prominence being given to it in such quarters is full of promise for the future of horticulture, and shows that the public is at last awakening to the full importance of plentiful supplies of good fruit at reasonable prices, spread over the greater part of the year. For the great outside general public, as distinct from the growers, sellers, and distributors, to ask for such things is to have them sooner or later—and mostly sooner than later. For demand in such matters creates and sustains the supply, not the supply the demand, as is too often taken for granted to the serious embarrassment and heavy loss of the grower. Now the space devoted to the fruit supply question is one of the surest proofs that the demand for more and better home grown fruit has already been heard. With equal certainty the supply will be promptly forthcoming.

The chief difficulties in the way are such as may readily be overcome by wider knowledge and greater enterprise. Our climate, with all its faults, that of occasional hard spring frosts included, is one of the finest in the world for Apples, the most important of all our national fruits, and the one that has the most money in it. It would be something approaching a national scandal that growers and traders from the States and Canada should beat English cultivators at their own doors in the culture and distribution of our national fruit. We are not disposed to admit that this is so with the same facility as the Editor or some of the writers in the *Daily News*. Our wider experience and more specific knowledge of the ins and outs of our foreign and home Apple trade would lead us to challenge the statement that the home growers are really beaten. No one, however, can deny that American and Canadian Apples are often preferred to those grown at home. Nor are the reasons far to seek. Many of the home-grown varieties are worthless, more are perishable, and the popular sorts often come in all together with a rush. The markets are glutted; even the costers' barrows are laden to overflowing with Apples—and then they are gone, hardly to return in quantity for the season, driven out of shops and barrows alike by low prices and the steady progress of decomposition. These gluts of perishable articles in the market not only drag down prices far below paying rates, but also far beneath anything like fair average values. The depressing effect on prices also extends far beyond the local causes or disturbances, such as congested markets or perishable varieties that produce the ruinously low prices. Apples reported unsaleable prevent rather than encourage purchasers. In this way the good varieties suffer with the evil. And much of the worthless rubbish, the grubbing up of which has originated the present discussion, has clung like a dead weight around our home fruit industry for years; for the tendency in all trades in perishable articles is for prices to sink to and remain at the lowest level rather than climb to the highest. Hence these clearances, rightly interpreted, are steps towards a double or threefold improvement—viz., in the growth of superior varieties, higher prices, and improved distribution. With these steps forward boldly taken and firmly maintained, the home grower of Apples has little to fear from foreign competition, the formidable ring of middlemen, or the much-talked-of preferential freights and rates in favour of foreign produce. In the matter of quality, without disparaging foreign Apples, we may say, without hesitation, that our best varieties, tested by price and experience, are equal to the best imported.

Heavily, too, as the middlemen's and market profits eat into the growers' returns, these would hit the latter lighter were qualities and gross values very much raised; for the commission is charged per bushel, and not per hundredweight or per pound; hence by raising the value by the growth of better sorts, the actual costs of the middlemen would be cut down one-half, two-thirds, three-quarters, or even more. By the growth of long-keeping sorts, the grower could hold on till he got prices, and could command markets that would yield him good paying prices. Fruit, like corn—and even more than corn—should be sold by sample rather than bulk. If this could be done it would save carriage, preserve the fruit from the deteriorating effects of three or more journeys, and render the producer wholly independent of any undue pressure from middlemen. Given long-keeping fruit in safe store at home, samples only presented, and the bulk known to be true to sample, the fruit grower would have ample time to choose his own market, and to send his goods direct to the buyer; and thus it might come to pass that the character of the grower, as well as the quality of his fruits would raise and keep his prices at the top of the market. Not only is perishable and inferior fruit almost worthless, but so is a mixed lot. As already stated, the level of the mixture sinks to that of its worthless part. Hence careful sorting and sampling and packing are equally, or even more profitable, than superior cultivation or the skilful selection of superior varieties.

In the case of Apples the question of preserving the fruit on the spot rather than conveying them to market in the raw state, has hardly as yet assumed practical importance among us. There is no telling, however, how soon it may do so. The area of Wheat and other cereals is shrinking by thousands of acres annually. Simultaneously with the importation of 70 per cent. of our bread and 30 per cent. of our meat, we are probably importing—we are not sure of the figures—say, 50 per cent. of our fruit. While our bread imports will be increased, it is probable that those of meat and of fruit might be greatly diminished; or, if not, that our home supplies of new and dried fruits might be doubled.

There used to be a considerable home trade in dried Beaufins, a fine, solid, long-keeping Apple—one largely grown in the Eastern Counties. The process of drying is simple, the fruit keeping long and sweet after they are dried, and proving very useful for many purposes afterwards. The Americans and Canadians have many methods of drying Apples in rings or otherwise by mere suspension, and Apple rings for culinary and confectionary purposes are now important articles of trade in most of our grocers' shops. Preserved Pippins, Apple jelly, and other delicious products of the Apple, are also mostly of foreign growth and preparation. We are going back rather than forward in these matters, and British Apple growers are in danger of being beaten and undersold at their own doors in the cultivation and conversion of their own national fruits. The difficulty as to whether the factories should be taken to the fruit or the fruit carried to the factories hardly arises in regard to Apples. Either or both may be adopted, as proved best and most profitable; in fact, this dual system is pretty generally adopted by the largest and best jam and pickle houses now. The first steps of pickling and preserving are not seldom taken on the ground, and purchase through character or by sample, precedes delivery, to some of our larger and best houses, of several hundreds of tons of the most perishable fruits per day. Year after year the same growers supply the same firms, and if, as must be admitted, the jam and pickle makers make large fortunes, most of the larger producers also make a competence. It is among the smaller growers outside the sweep of those great commercial enterprises that most of the suffering and loss arising from lack of markets, irregular supplies and sales occur. The great want of these, as of the larger growers, is a sure market at paying prices, and these can only be commanded through a series of years by growing the very best of everything, choosing a few earlier, fewer mid-season, and a larger quentity of late-keeping sorts, unless special orders are in hand for the two first in bulk, rigorously weeding out all small and inferior samples, packing and carrying the fruit in the most perfect manner, marketing in such form and bulk as the customers and wants of the trade require, and presenting each lot in the most

CATASETUM BUNGEROTHII: FLOWERS IVORY-WHITE WITH ORANGE CENTRE.

attractive condition. When all that is found associated with a rigid adherence to the same high quality through every bushel, sieve, or basket from top to bottom, and this repeated day after day throughout the season, such sellers will never lack either buyers or profits, nor need they grub up their Apple trees unless to renew their growth, or add yet better varieties to the good ones they have made fair profits off for years.

ROYAL GARDENS, KEW.—"It is proposed to issue from time to time, as an occasional publication, notes too detailed for the annual report, on economic products and plants to which the attention of the staff of the Royal Gardens has been drawn in the course of ordinary correspondence, or which have been made the subject of particular study at Kew. It is hoped that while these notes will serve the purpose of an expeditious mode of communication to the numerous correspondents of Kew in distant parts of the Empire, they may also be of service to members of the general public interested in planting or agricultural business in India and the colonies, W. T. THISELTON DYER, Director." Such is the announcement which precedes the first *Bulletin of Miscellaneous Information*. By way of illustration two subjects are mentioned in this *Bulletin*—Teff, and oil of Ben. Teff is a cereal largely grown in the mountains of Abyssinia, and is the produce of a grass, Eragrostis abysinnica. In answer to inquiries the Director publishes extracts from the works of RICHARD and BRUCE giving particulars of the nature and mode of cultivation of the plant, and also extracts from correspondence with the Foreign Office, various Consuls, &c. As a result of these inquiries seed has been sent to Kew and analysis made by Professor CHURCH, who notes that the grain contains 8·2 per cent. of albuminoids (flesh-forming food), and 68·1 per cent. of starch (or force-producing food). Oil of Ben appears from documents before us to be a sort o fBotanical "Mrs. 'ARRIS." "El Ben," we are told, is the Arabic or Persian name for Moringa pterygosperma, but the oil prepared from the seed of this plant in the West Indies is of no value, perhaps on account of some defect in its preparation. The *Bulletin* before us affords an indication of one phase of work done at Kew, of which the general public knows little or nothing, but which, nevertheless, is of first-rate importance. In a subsequent issue it may be found desirable to curtail the space given to mere formal official correspondence.

ROYAL HORTICULTURAL SOCIETY.—The names of the proposed new members of the Council have been circulated among the Fellows. The vacancies occur in the ordinary course. Mr. MITFORD, we believe, paid but scant attention to his duties. Mr. BOSCAWEN is an ardent horticulturist, and Mr. HAUGHTON an excellent man of business, and one who, though with no special horticultural tendencies, has stuck to the Society for many years, in stormy times as well as in peaceful ones, and given up much valuable time to its service. Though we are not always in agreement with his views we recognise the great claim he has established on the gratitude of the Fellows. The proposed new members include Mr. MAW, in every way a most desirable appointment; Mr. ARTHUR SUTTON, who represents the commercial interest; and the Rev. W. WILKS, who has his spurs to win, if clerks in holy orders win such things. We believe overtures were made to Mr. HARRY VEITCH to join the Council, and we heartily regret that that gentleman did not see his way to acceptance. No appointment would have given greater satisfaction. The annual general meeting will be held on Tuesday, February 8, in the East Crush-room of the Royal Albert Hall, at 3 o'clock P.M. The officers for the ensuing year are to be elected, and also the voting for the election of members of the Council will take place. The list of the persons recommended by the Council to be appointed to the offices of President, Treasurer, Secretary, and Auditors of the Society, are—President. Sir Trevor Lawrence, Bart., M.P.; Treasurer (*ad interim*), William Lee; Secretary (*ad interim*), Colonel Beddome; Auditors, John Lee, James F. West, Wm. Richards. The following circular has been issued by the Council:—

"The annual general meeting will be held at 3 P.M., on Tuesday, February 8, in the East Crush-room, Royal Albert Hall. Entrance—N.E. Orchard-house, Exhibition Road.

"The Council having entered into preliminary negotiations with the Royal Albert Hall Corporation for the future accommodation of the Society, questions of the utmost importance to the well-being of the Society will come before the meeting. The Council therefore hope there will be a large attendance of the Fellows on the occasion.

"Fellows who have not paid their annual subscriptions are reminded that these became due on Jan. 1, and should be remitted by cheque or post-office order, payable to London and County Bank, account Royal Horticultural Society. Also, that to enable Fellows to vote at the annual general meeting it is necessary that their yearly subscriptions and all arrears (if any) be paid on or before that day, as per Byelaw No. 19, as follows:—

"'19. No Fellow whose subscription is in arrear shall be entitled to vote at any meeting of the Society, or to exercise any of the rights or privileges of a Fellow. (Signed) WILLIAM LEE, Secretary.'"

JUBILEE PROPOSALS.—Double your subscriptions to the National Rose, Chrysanthemum, Auricula, Carnation, Tulip, Pansy, Dahlia Societies. Double your subscription to the Gardeners' Benevolent, and secure double the ordinary number of subscribers; and establish a steam life-boat. *Gardeners' Magazine.*

OUR OWN SPECIAL JUBILEE DREAM (see BACON'S *Atlantis*, MORE'S *Utopia*, &c.).—Multiply your subscriptions a hundredfold, establish a Horticultural Institute, to comprise an experimental garden, exhibition halls, libraries, reading-rooms, lecture-rooms, class-rooms for students, laboratories, microscope-rooms, endow lectureships, pay demonstrators, find room for offices for the Gardeners' Benevolent and kindred societies, furnish club-rooms; in a word, found a National Horticultural Society, a National School of Horticulture, and a National Horticultural Club, with members of Council in every county, local committees in every town, and correspondents in every village. How much of this can we realise?

HORTICULTURAL EXHIBITION, AMSTERDAM.—An exhibition of plants, &c., will take place, under the patronage of His Majesty the King of HOLLAND, from April 2 to 7, 1887. The competition is open to all, and those who wish to compete must communicate the name of the object and the corresponding number of the prize schedule, together with the amount of space they desire to fill, to Mr. H. C. SWART, Secretary of the Horticultural Society, Watergraafsmeer, before March 20. The exhibits must be on the show-ground on March 31 or April 1, and care must be taken to label each object in a proper manner. Competitors can compete with two collections or plants for the same prize, but are not allowed to compete with one collection or one plant for two prizes. Medals can be commuted into money value on the exhibitor communicating his wish to the Secretary within eight days of the award being made. Gold Medal, 50 fl. (= £4 3*s*.); Silver-gilt Medal, 15 fl. (= £1 5*s*.); Silver Medal, 10 fl. (= 16*s*. 8*d*.); Bronze Medal, 5 fl. (= 8*s*. 4*d*.). The best collection of Orchids will receive a medal, 200 fl. (= £20 16*s*.); 2d, 50 fl. (= £8 6*s*.). Collections of flowering plants (fifteen), 50 fl. New Holland stove and greenhouse plants, both flowering and foliage, Nepenthes, bulbs of many kinds, evergreen trees and shrubs, are included in the rather extensive schedule.

HOOKER'S "ICONES PLANTARUM." — The January number, which completes the seventh volume of the third series, is entirely taken up with illustrations of new or remarkable Ferns from various countries with descriptions by Mr. J. G. BAKER.

THE SOCIETY OF ARTS CANTOR LECTURES.—The second course will be on the "Diseases of Plants, with special reference to Agriculture and Forestry." By T. L. W. THUDICHUM, M.D. Three lectures. The first lecture was given on January 24 last, and was devoted to the consideration of parasitic fungi, including those of the Potato.

"*Lecture II.—January* 31.—Epiphytes or fungi living upon, as distinguished from Endophytes or fungi living within, the tissue of other plants.—Parallelism with Epizoa and Entozoa.—Description of the diseases caused by Fumago or foot-dew.—Mildews—their effects upon gardens, cultivated fields, and forests.—Fungi as medicines.

Lecture III.—February 7.—Animal parasites as causes of epidemic plant diseases, illustrated by the Phylloxera.—Comparison with Oïdium.—Aphides or greenfly.—Survey of parasites on forest trees.—Necessity of greater attention to forest culture as a science.—Physical and chemical causes and effects of diseases of plants. Comparison with vegetable ferments, beneficial and hurtful.—Diseases of wine and beer.—Conclusion."

The third course will be on "Building Materials.' By W. Y. DENT, F.C.S., F.I.C. Four lectures. February 14, 21, 28; March 7. The fourth course will be on "Testing Materials of Construction, especially Iron and Steel." By Prof. W. C. UNWIN, F.R.S. Three lectures. March 21, 28; April 4. The fifth and concluding course will be on "The Structure of Textile Fibres." By Dr. FREDERICK H. BOWMAN, F.L.S., F.G.S. Five lectures. April 25; May 2, 9, 16, 23.

MOORE MEMORIAL FUND.—In addition to the names published in our last issue, we may now mention T. W. Sanders, J. B. Mackay, Totterridge, W. Miller, J. O'Brien, B. Wynne, E. S. Dodwell, J. Cheal & Sons, H. Eckford. The amounts vary from 2*s*. 6*d*. to a guinea. Further subscriptions will be required, and should be sent to HARRY VEITCH, Esq., King's Road, Chelsea; or to Dr. MASTERS, at the office of this Journal.

ROYAL BOTANICAL AND HORTICULTURAL SOCIETY OF MANCHESTER.—Mr. BRUCE FINDLAY writes:—"The exhibitions of this Society for the present year will take place on the following dates:—March 15 and 16, and April 29, at the Town Hall; and the Whitsuntide exhibition, at Old Trafford, will open on May 27. The dates of the Carnation and Chrysanthemum shows are not yet fixed."

THE LATE EARL OF CHESTERFIELD.—The death of the Earl of CHESTERFIELD is announced. As Sir HENRY SCUDAMORE STANHOPE he was known as an ardent pomologist, and was at one time a member of the Council of the Royal Horticultural Society. His fruit wall at Holme Lacy, near Hereford, was illustrated in our columns in 1879, p. 365, vol. ii.

A HOUSE OF STRAW.—At the forthcoming American Exhibition, which is to open on May 2 at Earl's Court, Kensington, there will be a house of straw, now being made in Philadelphia. This house is an American suburban villa, very handsome, and thoroughly artistic in design, two and a half storeys high and covering a space of 42 by 50 feet. It is built entirely of materials manufactured from straw—foundations, timber, flooring, sheathing, roofing—everything, in fact, including the chimneys, the material being fireproof, as well as waterproof. The inside finish will be in imitation Rosewood, Mahogany, Walnut, Maple, Ash, Ebony, and other fine woods, the straw lumber taking perfectly the surface and colour of any desired wood.

STIMULI IN VEGETABLE TISSUES.—FRANCIS DARWIN and A. BATESON read a paper on this subject at the Linnean Society on January 20. Of their experiments and researches the following are the more important results enunciated:—1. Turgescent pith placed in water increases in length, at first slowly, then more quickly, and then again the rate of increase becomes slow. 2. The rate of increase in length increases as the temperature of the water

rises, reaches an optimum, and suddenly falls as a temperature sufficient to cause flaccidity is reached 3. The following reagents cause distinct acceleration, viz., alcohol, ether, ammonia, and hydrocyanic acid. The first three cause a very temporary effect, whereas prussic acid has a prolonged action. 4. The following re-agents produce retardation, viz., acetic acid, hydrochloric acid, and probably nitric acid. 5. Dilute solutions of quinine, of quinine-chlorite, and of carbolic acid produce a remarkably rapid shortening of the pith, The authors incline to believe that physical causes are not solely the agent in the results obtained in these experiments, but that the protoplasm is endued with a vitality of its own and one on which chemistry throws but a feeble light.

INSECTS AND FROST.—Mr. MCLACHLAN writes:—"The still prevalent idea that a hard winter is destructive to insect life is erroneous (see *ante*, p. 117). No rule is without its exceptions, and there are probably cases in which severe frost is really fatal to insects; but in the majority of instances, and especially in the case of larvæ that habitually 'live' through the winter, the cold, if continued without intervals of excessive moisture, is favourable. Larvæ may be frozen to such an extent as to render them brittle as rotten sticks, in which condition they can scarcely be said to 'live,' but on the return of warm weather they revive, not a bit the worse for their freezing. Amateur breeders of insects always experience difficulty with larvæ that hybernate, and almost their only chance of success is to leave them out-of-doors, exposed to all the vicissitudes of weather, and even that plan is not always successful, because there are usually certain artificial conditions called into service in order to prevent their escape when they rouse up. The great enemy to insects in winter is excessive moisture; it induces attacks from 'mildew,' which probably destroys more hybernating insects than all the rest of the contingencies put together, and it also directly causes death by drowning. The water enters into the breathing tubes through the spiracles, or external openings, and acts in precisely the same manner as too long-continued submersion in a lung-breathing animal. Continued hard frost is favourable (as a rule) to insect life in winter. A mild open winter is usually unfavourable, because it is generally connected with excessive moisture. Probably the most unfavourable of all, is a winter in which periods of great cold, and unusual warmth alternate. That cold is not detrimental is evident from the fact that butterflies, and humble-bees (not to mention others) occur nearly as near to the North Pole, as any Arctic expedition has yet approached; and it is probable that these may occasionally be forced to remain in a frozen state during two or three consecutive years, as eggs, larvæ, or pupæ. In latitudes a little lower swarms of gnats, &c., emerge actually from the ice when the spring thaw occurs, in which ice they have been embedded for months as pupæ. Horticulturists and agriculturists should endeavour to get rid of the old-fashioned idea that a hard winter is generally unfavourable to insect-life."

CATALOGUE OF CANADIAN PLANTS.—The third part of Mr. MACOUN's very useful enumeration includes the apetalous plants. It has been lately published under the auspices of the Geological and Natural History Survey of Canada. In all doubtful cases the opinion of Dr. ASA GRAY or of Mr. SERENO WATSON have been taken. No descriptions are given, but full details as to localities and stations. A list of additions to previous parts and a complete index to the three parts constituting the first volume render the book very convenient for reference.

LES PRODUITS VÉGÉTAUX EXOTIQUES.—M. BERNARDIN, the Curator of the Industrial Museum of Melle, near Ghent, has published a valuable list of words descriptive of various vegetable products in numerous languages—European as well as those of other con tinents. He shows how the perversions and mutations of sounds and letters may be brought about. Thus the Latin *natio* has given rise to the Portuguese *nacão*, the Spanish *nacion*, French *nation*, Italian *nazione*.

JOURNAL OF THE SCOTTISH METEOROLOGICAL SOCIETY.—The part comprising the meteorological records of Scotland for 1885, has lately been issued. In addition it contains numerous papers read before the Scottish Meteorological Society. Adverting to the rain-band spectroscope, Dr. HUGH MILLS considers that it has passed through its phase of scientific toyhood and that it is taking its position as an aid to meteorology, and as the best means by which a single observer can ascertain the probability of rain falling in a given short period.

LINNEAN SOCIETY OF LONDON.—A meeting will be held on Thursday, February 3, at 8 P.M., when a paper will be read on the "Fauna and Flora of the Afghan Boundary," by Dr. AITCHISON.

"SCHEDÆ AD FLORAM EXSICCATAM AUSTRO-HUNGARICAM" (A. Kerner, Vienna).—This is a publication somewhat analogous to the *Record* of our own Botanical Record Club. It is destined to accompany the dried specimens which are collected in various parts of the Austro-Hungarian empire, and are distributed among the botanists. As containing valuable information on synonymy, &c., these "Schedæ" will be useful for reference even to those who have not the accompanying dried specimens.

THE NATIONAL FOOTPATH PRESERVATION SOCIETY.—The second annual report of this Society (42, Essex Street, Strand) records an increase in the receipts of 60 per cent., the expenses being about the same. The report shows the need there is for constant watchfulness, and says, we believe truly, that the new landowners, the *nouveaux riches*, are more inclined to close paths than the old landed proprietors. "These latter have generally some sympathy with the people, but the new owners care little or nothing for the rights of the people." It is not generally known that no lapse of time can bar the right of the public to a footpath that has been once dedicated to the public. A copy of the case PAIN *v.* EVE, which settles this question, may be had from the Secretary, as above.

PASTURES.—A second edition of Mr. MARTIN HOPE SUTTON's *Permanent and Temporary Pastures* has been published. It is very satisfactory to find that this work is appreciated as it deserves to be. If less elaborate than some of the more recent German treatises on the same subject, it is more practical, as supplying what the cultivator really wants. Some additional analyses are supplied in the present edition, which is published by HAMILTON, ADAMS & Co.

THE FLORA OF LEICESTERSHIRE.—A new Flora of the county has just been published by Messrs. WILLIAMS & NORGATE. The work has been compiled by a sub-committee of the Leicester Literary and Philosophical Society, who have made use of a manuscript prepared many years ago by the late Rev. W. H. COLEMAN.

CRINUM VANILLODORUM.—This handsome Crinum is figured in the *Illustration Horticole*, t. 617, December, 1886. It is a native of West Tropical Africa, and is remarkable for the broad Eucharis-like segments of the flowers. The anthers are green. The bulb is prolonged into a long neck, and the flowers are said to have an odour of Vanilla.

EDUCATION OF GARDENERS.—We have often had occasion to comment upon the superior education which some Continental gardeners, especially German ones, manage to acquire, and we cannot doubt that, other things being equal, such men will be preferred to our own for many colonial appointments. Here is a case in point, one of several similar that have occurred to us within the last few months:—A young gardener of our acquaintance, after pursuing his studies in a gymnasium at Berlin, entered the Royal Gardens at Potsdam, then worked in a nursery, and afterwards in the Botanic Garden. During this time he attended the University lectures of Professors EICHLER, SCHWENDENER, ASCHERSON, and KOCH. He then went to the Pomological Institute of Proskau, passing through the scientific and technical curriculum in three instead of four half-years. Returning to Berlin he again studied botany under EICHLER, MAGNUS, and other Professors, physics under HELMHOLZ, chemistry with SELL, ethnology under BASTIAN, and then went as gardener to the Imperial Botanic Garden, St. Petersburg. It may be said that this is an exceptional case, and perhaps it is; but it is quite certain, as Professor HUXLEY put it the other day, that we are engaged in a struggle for supremacy with other nations, and that only those who are well equipped can expect to survive.

HORTICULTURAL CLUB.—The annual dinner will take place on Tuesday, February 1, at 6 o'clock, when Sir TREVOR LAWRENCE, Bart., M.P., President of the Royal Horticultural Society, will be the guest of the Club, and JOHN LEE, Esq., will occupy the chair. The price of a ticket (including wine) is 12*s.* 6*d.* The sub-committee meets at 2 o'clock, and the general committee at 5 o'clock the same day.

GINGER BEER PLANT.—Professor BAYLEY BALFOUR exhibited specimens and showed the microscopic structure of this organism at the Linnean Society meeting on January 20. He pointed out that, although well known to many people as a means of manufacturing an acid drink out of sugar solution and ginger, yet no scientific account of the organism had appeared except a short note by Mr. Worthington Smith in the *Gardeners' Chronicle*. It has the appearance of a white Nostoc, and is composed of a bacterium (passing through all forms of rods, coils, and filaments), which apparently constitutes its greater part, and associated with this is a sprouting fungus. Judging from descriptions and figures by KERN of the "Kephir," used in the Caucasus to induce fermentation in milk, the Ginger Beer Plant closely resembles this; but there are many points of difference. One tradition of the introduction of the Ginger Beer Plant to Britain is that it was brought by soldiers from the Crimea. Professor BALFOUR expressed a desire to have specimens of the Ginger Beer Plant from different localities, and hoped that any Fellow who could obtain it or throw light on its history would communicate with him.

PRESENTATION TO MR. LOCK AT CREDITON.—We learn with satifaction that, on January 25, at the "Seven Stars Hotel," Crediton, Mr. GEO. LOCK, Head Gardener to B. W. CLEAVE, Esq., Newcombes, was presented with a gold watch and albert, together with an illuminated address bearing the subscribers' names. Mrs. LOCK was at the same time presented with a marble timepiece. The movement was started by a number of Creditonians to mark their appreciation of Mr. LOCK's successes as a horticulturist and floriculturist. During the last eight years Mr. LOCK has taken 499 prizes, twelve of which were silver cups, and 350 1st prizes. The shows at which these were won were held at Taunton, Plymouth, Torquay, Salisbury, Southampton, Weston-super-Mare, Exmouth, Exeter, and Calne. The presentation was made at a dinner by Mr. J. SEARLE, who remarked that Mr. LOCK's sum total of successes had not yet been reached, as he (Mr. LOCK) was only thirty-seven years of age now.

THE LATE SIR JOSEPH WHITWORTH.—In the death, at an advanced age, of Sir JOSEPH WHITWORTH, the celebrated mechanist, we have also to chronicle the loss of an enthusiastic gardener. Of his rock gardens at Stancliffe we have given illustrations on various occasions. Convinced as Sir JOSEPH was of the importance of scientific training in combination with technical skill, he set a munificent example in the endowment of the WHITWORTH Scholarships.

NOTICES OF BOOKS.

ELEMENTARY TEXT-BOOK OF BRITISH FUNGI. By W. Delisle Hay, F.G.S.

This is a large and remarkable book of 238 pages of letterpress, and sixty-four pages of illustrations. The author's name is probably unknown to professional mycologists, and he himself says in his preface:—"It has never been my privilege, as yet, to meet with any person versed in mycology from whom I could derive instruction." The author, however, acknowledges "a wide acquaintance with mycological literature." The MS. of the book, it appears, was ready for printing four years ago, but during these four years it has been improved, revised, and shorn of "redundant rhetoric." It is difficult to express an opinion of a large work of this class without reading the book entirely through, and this we confess we have not done. The work before us is, to a great extent, a reference book, chiefly on the subject of edible and poisonous fungi, and as it contains the author's ideas and personal experience of a very large number of species it cannot fail to be valuable, for, as far as we can see, after testing it in several places, the author appears to have correctly determined the species he has described. The price of the book, too, being very moderate, we can see no reason why "fungus-eaters" should not buy and consult it.

The author rightly complains that descriptions of species, however accurate, but without first-class illustrations, fail to give a beginner a perfect idea of the plant in view. Here, no doubt, the author is right, but his own book notably fails in this very same direction, for he supplies nothing better in the way of illustrations than reproductions of the little cuts from Cooke's *Handbook*. These illustrations, which served a definite purpose some twenty years ago, are no good as aids for the discrimination of edible and poisonous species. As a proof of this fact it may be cited that on plate 1, where six reprints are given, only one example shows a section.

Notwithstandiug numerous defects the book has a distinct value; it gives twenty-six pages of recipes and notes as to the preparation of edible fungi for the table. Amongst chapters, such as are usually found in books upon fungi, we have here one on the "Chemistry and Toxicology of Fungi," and a "Calendar of Common Esculent Fungi." Students will probably find numerous curious slips. For instance, the word "parasite" is used in a remarkable manner, the members of one sub-genus being said to be "parasitic on dung;" in fact all the fungi which grow on rotten stumps and dead pieces of wood upon the ground are termed parasites. The sub-genera of Agaricus are not arranged after the Friesian order, and this departure from Fries' method we greatly dislike, as both unnecessary and tending to more confusion where too much confusion already exists. Poor Dr. Bull, had he been alive, would have been angry with our author in writing of parasites, for he refers to the Mistleto, and says, "Now, who ever saw Mistleto growing on the Oak? It never does grow on that tree." He then says, he conceives that the name of the parasite has been wrongly translated, and that the Druids (Alas, poor Druids!) really cropped Dr. Bull's "Vegetable Beefsteak" (Fistulina hepasica)—the Oak-tongue of our author.

In giving his personal experiences of a large number of fungi, the author supplies a popular name for every fungus mentioned; some of these are very curious, as, the Longshank, the Waterskin, the Ingénue, the Spotty-sprout, the Little Darkie, the Bisotte, the Wrinkle-twig, the Mulberry Jelly-sprout, the Stinker, the Yellow Reptile, the Sickener, the Sickener's Sister, Beelzebub's Cushion, &c. We should not have objected to these curious names—they are a pleasant diversion after the ill-natured mycology to be found in some books—but what we do object to is the fact that all the fungi are indexed under the new popular names. We confess that when we looked down this index we shivered and trembled like one of our author's own jelly-sprouts, and estimated the remainder of our advanced life as too short for mastering this new and appalling army of "spotty-sprouts" and "wrinkle-twigs."

Possibly some crabbed and disagreeable old mycologists will still find a little too much rhetoric in this new book; for instance, Agaricus vernus (really a mere gingerbread species) is said to be "angelically beautiful, and demoniacally poisonous." A curious chapter in the book is one on Mushrooms, dedicated to saints. Saints are certainly not a specialty of ours, but there are here thirteen enumerated; one is St. Judas Iscariot, a shady saint, actually elbowing our own St. George. Cecilia E. Berkeley is beatified and made a saint on p. 230, and there said to be "a close ally of the Grizette." Notwithstanding our good natured and playful references, we do not think any one need grudge the moderate outlay demanded for the purchase of the book, for the author at any rate has one great virtue, for he is all the time telling the reader what he thinks; he is not constantly boring him with what he thinks other people think.

As for the reprinted illustrations we do not like them at all; how it happens that Dr. Cooke's little cuts get dragged by wholesale into all sorts of books we cannot think. A small number of these illustrations are from our own originals, and even the key sheets (as engraved at our own expense for the *Journal of Botany*) are here once more before us. We have the original blocks now by us—Dr. Cooke returned them after he had used them. We have lent them to no one else. Fungus-eaters evidently have no rights. Some of Dr. Winter's illustrations in Rabenhorst's *Kryptogamen Flora* are copies from our originals in the British Museum, but Dr. Winter says "nach Cooke." We say, however, "not Cooke," if Winter has copied from Cooke, Cooke first, in every case but with due acknowledgment, copied from us. But French and German mycologists are often in a fog.

The book before us is confined to descriptions of the edible and poisonous species of the larger fungi, but Dr. Cooke's illustrations are used by wholesale. To such an extent is this absurd proceeding carried, that all Dr. Cooke's microscopic species are dragged in—hardly, we should say, at the desire of the author. None of the latter are described, so that forty or fifty of the plates may be considered without value, for we do not hesitate to say that forty or fifty plates of Dr. Cooke's little cuts of microscopic fungi, drawn to all sorts of scales, and sometimes only showing a single spore, are no good in a book like the one before us, and make very bad padding. The cuts have, however, been carefully set up, for Cenococcum, on pl. xv. (most provokingly printed upside-down by Dr. Cooke's printers) is here very carefully again set up upside-down. Cystopus cubicus, on pl. xxxi., is also upside-down, and fig. 4 on pl. xxviii. is really only a leaf hair, and not a fungus at all. Notwithstanding the defects mentioned above, there is much in the book of both interest and value, and we shall keep it as a reference book with others more pretentious. *W. G. S.*

TITHES; THEIR HISTORY, USE, AND FUTURE. By R. L. Everett. (James Clarke & Co., Fleet Street: 1887.)

The agricultural reformer who wrote this pamphlet, a yeoman of Suffolk, and late M.P. for one of its divisions, needs no apology for an interesting contribution on a well-worn subject. Only the other day, till 1836, tithes were a terrible grievance. No better plan could have been devised for straining the relations of clergymen and farmers than the method of collecting tithes. Then came the Commutation Act—an admirable reform we thought it then, but quite insufficient now, it seems. Mr. Everett writes from the point of view of a dissenter, and whatever his opinions may be—and we shall not discuss them—he writes with more knowledge than some persons in the rural districts possess. He does not propose confiscation, and he does not suggest that the abolition of tithes would put just so much money in the pockets of those who pay them. The best parts of the pamphlet seem to us to be the history, and the facts relating to the present amount of the rent-charges payable in lieu of tithes. He takes his readers back to the landing of St. Augustine, and the formation of parishes by the endowment of clergymen by the lords of manors with consent of the bishop, the person so named to be henceforth for life the priest of that manor or parish. The manor then became a parish, having the same boundaries as the manor, and this, in fact, was the way in which our present parishes originated. We are also introduced to Ethelwolf (year 885), when that king and his Parliament at Winchester first "endowed the whole English Church with the tithes of all lands and of other goods and chattels."

But let us come to the facts of the year 1882, when the amount of the rent-charges payable in lieu of tithes amounted to the following sums:—

To clerical appropriators and lessees ...	£378,987
Parochial incumbents	2,412,703
Lay improprietors	766,233
Schools, colleges, &c.	196,056
	£4,053,983

In some parishes lands are assigned in place of tithes, and in London and a few other places rates are levied on the same account; and then there are the extraordinary tithes on Hops and fruit, chiefly in Sussex and Kent, yielding £50,000 annually. Altogether the total amount is about £5,000,000 a-year.

Mr. Everett shows in an appendix the amount of tithe in each county of England and Wales. We commend his pamphlet for the information it contains, and for its dispassionate treatment of a subject which is sometimes discussed with more heat than judgment.

VEGETABLES.

RAMPION: ITS CULTURE AND USE.—Rampion is a vegetable which may be used cooked or as a salad, but which is not nearly so much grown as it should be, especially when it is considered what a good substitute it is for Radishes during the early autumn months, and when, owing to heat and drought, the latter are sometimes difficult to obtain in a tender condition. One fault that may be urged against its cultivation is, that numerous divisions spring from the rootstock, which make it difficult to prepare for the table, and spoil its appearance. Bad cultivation is the chief cause of this defect, from which Carrots, Parsnips, and Beet, which now make such fine long roots, were very liable, until careful culture, unsparing selection of seed, and preparation of ground, gave us roots of great excellence. Rampion requires to undergo a similar course of selection to insure useful produce.

By way of illustrating both the difficulty and the remedy connected with ill-shaped roots, I need but refer to Salsify as grown a few years ago, when it invariably formed branched roots, very different from the clean straight roots of to-day. To grow Rampion well, the seed-bed should be on somewhat light, porous soil; but even when such a soil has been secured, preparation for the crop should not end there. The site chosen should be a partially shaded one, such as a border on the west side of any wall affords. Bastard trench the soil, and at a depth of 6 inches place a layer of decayed manure, and proceed with the trenching. Sow the seeds in drills not less than 6 inches apart, and having covered them with about a quarter of an inch of soil, well tread the bed over, and rake down smoothly. When the seedlings are well through the ground, thin them out to not less than 4 inches apart.

About three weeks after give the bed a thorough soaking with water, and the crop will be assured, unless the weather prove very dry for a long period, when duplicate waterings will prove of great benefit, for when the tap-roots have reached the layer of manure the plants cannot well have too

much root moisture for the fine development of its roots, and may be watered as freely as Celery. To secure a continued supply it is well to make several sowings—one early in the month of April, one about the third week of May, and a third and last about the same period in June.

Attention must be given to the careful thinning out the young plants. When the plants are in vigorous growth, the bright green leaves being young and tender, are eligible for use as salad, giving a nice appearance when mixed with Lettuce, Endive, and slices of Beetroot. The roots when large enough can be prepared in the same manner as Salsify, and are then much appreciated. When employed as a salad, the roots, carefully taken up, require equally careful preparation. The thick tenacious rind of the roots must be carefully scraped off, else the finest roots produced are likely to be disfigured. Owing to this I always found it desirable to have this scraping performed in the garden. When this little operation is properly done the roots have a beautiful white appearance, and the nutty flavour of the root is preserved. *William Earley.*

Fig. 34.—Pear Beurré Superfin.

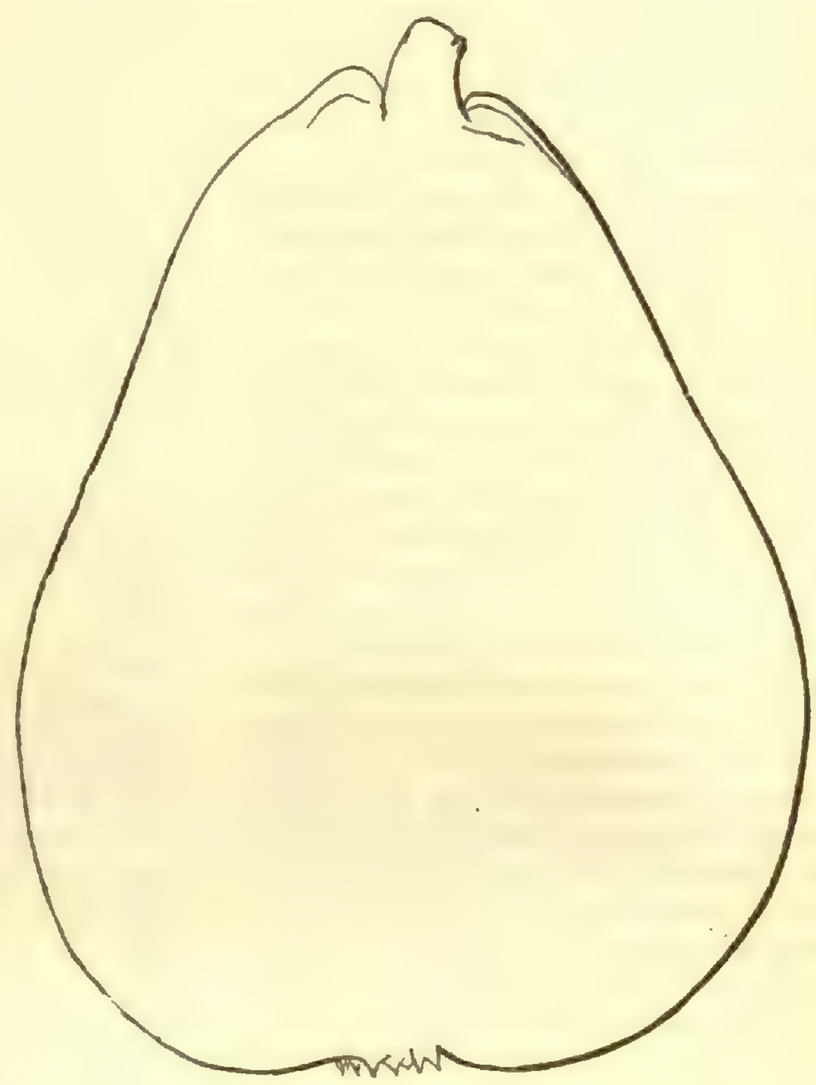

Fig. 35.—Pear Beurré d'Anjou.

PEARS.

A SELECTED LIST OF ONE HUNDRED VARIETIES OF PEARS.

(Continued from p. 84.)

November.

1. Belle Julie.—Medium, melting, juicy, and richly flavoured; constantly good; great cropper.
2. Beurré Baltet Père.—Large, fine quality; crops well.
3. Beurré Clairgeau. — Large, extremely handsome; half-melting, poor quality. (Fig. 36.)
4. Beurré d'Anjou.—Large, fairly good in quality; pretty constant. (Fig. 35.)
5. Beurré Superfin.—Large, melting, fine rich sub-acid flavour; one of the best of Pears. (Fig, 34.)
6. Doyenné du Comice.—Large, handsome, melting, buttery, very richly flavoured, constant; the best of all Pears.
7. Duchesse d'Angoulême.—Large, melting, sub-acid, not rich; requires a wall.
8. Durondeau.—Large, handsome, of very good quality, although not rich; hardy.
9. Emille d'Heyst. — Large, of very good quality; great cropper.
10. Forelle. — Medium size, extremely pretty; quality second-rate.
11. Jules d'Airolles.—Medium, fairly good in quality; good cropper.
12. Lucie Audusson.—Large and handsome, fine buttery flesh; good quality.
13. Marie Louise.—A well known good Pear; continues long in use.
14. Marie Louise d'Uccle.—Medium, second-rate in quality; great cropper. (Fig. 37.)
15. Hacon's Incomparable.—Large, second-rate in quality; great cropper.
16. Napoléon.—Medium size, rather watery.
17. Pitmaston Duchess.—Very large and handsome, second quality; great cropper.
18. Old Crassane.—Large, fine sub-acid flavour; hardy.
19. Van Mons Léon Leclerc.—Large and rather handsome; moderately good quality.
20. General Todtleben.—Large, very long stalk, good quality; crops well.

November is also a Pear month in which the most of the larger and finer-looking varieties come into use. A few other names might be added to the list possessing some merit, but not many. The Pears of this month have a somewhat more protracted period of ripening, varying also according to season. The larger varieties require more attention as to culture, and in many cases would be all the better for a wall.

Pear Souvenir du Docteur Gautier.

A pyramidal-habited tree, very hardy and fruitful. The fruit is over medium size, conic, rounded at each end, with a short stalk, and a small eye at the base of a rather large cavity; skin smooth, lemon-yellow, and mottled with red; flesh white, delicate, melting, juicy, perfumed, sweet. The Pear lasts till March or April. This should be a valuable addition to our selection of Pears. It is figured in the December number of the *Bulletin d'Arboriculture.*

KAURI RESIN.

The following paper was read by Mr. Gellatly, Curator of the Edinburgh Museum of Science, on January 13, at the last meeting of the Edinburgh Botanical Society:—

The Dammara australis which yields the Kauri resin is the largest of the New Zealand trees. It is confined to the northern portion of the North Island, and grows on all soils up to the height of 1500 feet, but is said to prefer the dry and sterile clays of the hilly districts. It reaches a height varying from 100 to 140 feet—some few growing as high as 170 feet or rather more. The tree is usually bare of branches for about 50 feet from the ground. A trunk has been occasionally but rarely seen as much as 35 feet in circumference. Laslett saw two exceptionally large trees—one at Wangaroa (a little to the northward of the Bay of Islands), that measured 48 feet in circumference at 3 feet from the ground, and another near Mercury Bay, which was 72 feet in circumference and 80 feet to the branches. As the tree, which is of slow growth, does not add more than an inch to its diameter in six or seven years, Mr. Laslett computed the ages of these two giants to be respectively about 1300 and 2000 years.

The timber is so useful that it is employed in the construction of most of the houses and for nearly all the boats in the North Island. There is a little difference of opinion about its quality. Mr. Laslett says that the timber is generally sound and free from defects common to many other descriptions of wood; that it shrinks very little and stands well after seasoning. Further, that it is remarkably solid, and may be considered one of the best woods for working that the carpenter can take in hand. Some of the colonists, however, state that it has a strong tendency to shrink and contract in length as well as in breadth, and that it often does this when freshly planed, no matter how well it is seasoned. It seems, however, to be unrivalled for the masts and spars of ships, possessing the requisite dimensions, lightness, elasticity, and strength; and being more durable than any other Pine. Its specific gravity averages about ·530, somewwhat less than

the density of the timber of Pinus sylvestris brought from the Baltic ports.

The co-called Kauri gum—really a resin—exudes spontaneously from every part of the tree, and hardens upon the surface by exposure to the air, immense masses of the resin being often seen on old trees, suspended from the stem at the forked part of the branches. It is believed that the bark, branches, stumps, roots, and even the leaves of the Kauri Pine would yield a large amount of resin under proper management. When an incision is made in the bark of the Kauri tree the resin exudes freely, so that here, in the course of a few weeks, a large mass, of half dried resin will have accumulated. This new gum takes about three months to harden properly.

All except a very small portion of the Kauri resin so largely exported from New Zealand is, however, dug out of the ground in a fossil or semi-fossil state, but there is not much of it found more than 10 inches below the surface; that is, it occurs in the present soil. Occasionally it is found at a depth of 3 feet, and it is fished up in bogs or swamps, as well as dug out of dry ground. The resin is found either in small detached lumps, or in considerable quantities deposited in one hole. When dug up its surface is found to be partially decayed, and this portion requires to be scraped off. It is curious that where the buried gum is obtained there are now no remains of Kauri trees exrept the resin itself. Nevertheless, it is believed that forests of this Pine must have formerly grown over the areas where it is found.

The only tools used in procuring the resin are a spear and a spade. The spear is a pointed steel rod, with which the digger pierces the ground, and by this means, after he becomes sufficiently expert, he can tell whether he is touching a stone or a piece of resin. If the latter, it is dug up with his spade. Between 1000 and 2000 Maories are usually engaged in digging for the resin, but although from habit and local experience they are more adroit at obtaining it than the settlers, they are said not to care for the work, and only continue at it when pressed by want. Many Europeans are also engaged; these, however, are chiefly men impatient of regular occupation—vagabonds, dare-devils, or persons fond of a gipsy life. I see that an American Consul, in a report to his State Department, points out with manifest glee, that amongst this nomadic class are a number of the degenerated sons of the aristocracy of Great Britain.

A few years ago an industrious man could dig out about 2 cwt. per day; now he will hardly obtain one-third of that quantity in the same time. The total annual yield is, however, not yet falling off, owing to the additional number of diggers employed. This quantity is very large for a substance of this kind, amounting to fully 5000 tons, of which 3000 are sent to America, and 2000 to England. The average value of the fossil resin is now about £60 per ton. There are several qualities of it, however, varying in price from £45 to £170 according to its purity. The resin obtained from growing trees of which, as already remarked, very little has yet been exported —is not worth more than £25 per ton.

Although many specimens of Kauri resin are as beautiful as amber the Maories, notwithstanding that they have the artistic faculty in a high degree, do not appear to have ever applied the resin in any way as an ornament. As we see by objects handed down to us, amber for this purpose must have been highly prized by the ancient Greeks, the Romans, the Vikings or Norsemen, and the early Celts. The only uses the Maories have made of Kauri resin have been to kindle fires and as a masticatory. In recent years lockets, brooches, and other small ornaments have been made of it by settlers at Auckland and other places in the North Island. They have the serious drawback of being not nearly so hard as amber ornaments.

The important uses of Kauri resin are—first, in the making of varnishes; second, in the manufacture of linoleum—a floorcloth now largely made—in which this resin is advantageously mixed with common resin and oxidised linseed-oil; and, third, in the dressing of silk fabrics. [It is also used by dentists for taking moulds or casts. ED.]

Unfortunately it is yearly becoming more difficult to keep up the supply of this highly useful vegetable product. The resin first appeared in any quantity as an article of export from New Zealand about the year 1850. Mr. Reynolds, of Aukland, who has been engaged in collecting it for export for twenty years, estimates that the fossil Kauri resin will be completely exhausted in twenty years hence. Probably in the meantime the discovery in quantity of some equally valuable resin in another part of the world may render this calculation to some extent inaccurate, but according to several authorities the supply cannot last much longer.

The recent gum is not so serviceable as the fossil kind, owing to its softness, though it has a more pleasant odour when heated. But neither can a long-continued supply of the new resin be hoped for. I hear from persons acquainted with the country, and I also see by remarks in papers published in the *Transactions of the New Zealand Institute*, that the existing forests of the Kauri Pine itself will more than likely be wholly cut down in another fifty years.

FIG. 36.—PEAR BEURRÉ CLAIRGEAU.

FIG. 37.—PEAR MARIE LOUISE D'UCCLE. (SEE P. 150.)

AMATEURS' NOTES.

LÆLIA ANCEPS.

IN answer to "Amateur's" query at the end of his letter on p. 114 (January 22 issue) as to a five-flowered spike, I may say that I had one in January, 1885, which I sold at Protheroe & Morris' rooms on the 27th of that month, and it was much noticed; the plant had three others bearing three each. Also that year I had a four-flowered spike on L. anceps blanda, a handsome variety, which is described in the *Gardeners' Chronicle* (by Professor Reichenbach) of February 14, 1885, p. 206; also a plant in 1884 with four spikes of four flowers each upon it. *De B. Crawshay.*

LÆLIA ANCEPS VARS. WILLIAMSI AND STELLA.

By the kindness of "Amateur" I have seen the plant he calls L. a. Williamsi, or rather does so on Mr. H. Williams' authority; also I have seen in an adjoining collection two forms of L. a. Williamsi (true) from the older importations before the white anceps import of 1885 came. The difference in every way is immense between "Amateur's" new arrival and these two plants of Williamsi; in every way that difference is in favour of L. a. Stella, as I must call it, for the two varieties are eminently distinct. I have seen a good many L. a. Williamsi, and all are remarkably alike as to the tube of the lip, its markings, and the keel, which has not three deep carmine lines running its whole length, as L. a. Stella has. Again, the colour of these lines is entirely different; Stella has carmine, the other has almost brown lines. In bulb and leaf, too, I consider them wide apart, and especially the long distance between the bulbs of Stella marks it as of a different habit. Williamsi has as starry a flower in comparison to Stella as Stella has to Dawsoni, but there is pre-eminently a less amount of starryness in the second comparison. Though "Amateur" and I are on the same road, I cannot but hope he will change his idea to let his new-comer stand as Stella, and not merge it into Williamsi, for she is a star of the second magnitude (allowing Dawsoni to be first), whereas Williamsi is decidedly a third magnitude, especially when by her side. There are, may be, some orchidists who, value put aside, will admire Stella more than Dawsoni. *De B. Crawshay.*

FRUITS UNDER GLASS.

RAISING YOUNG VINES FROM EYES.

IF not already done this operation should be seen to at once, Having selected the necessary number of good plump buds of the desired varieties, cut the wood right across, about half an inch on either side of the bud, and then take a small slice off the side of the wood opposite the bud. This done, place the pieces flatwise, singly, in the centre of properly crocked 3-inch pots, filled to within an inch of the rim with compost consisting of three parts light loam and one of sweet leaf-mould, bedding the eyes in sand prior to covering them with a little of the mixture indicated. They should then be watered, and the pots be plunged to the rims in some material giving a bottom-heat of from 85° to 90°. For this purpose a hotbed would answer admirably; the brisk bottom and genial top-heat thereby supplied will cause the emission of roots and the development of leaves within a few weeks from the time of putting in the eyes, and, being near the glass, the Vines will make sturdy growth. A night temperature of from 55° to 60° and 10° or 15° higher by day should be aimed at. After the plants have made three or four leaves raise them out of the plunging material, resting the pots instead on the surface of the bed, which will be sufficiently warm to maintain the needful though less rapid root-action. The plants should be kept moist at the roots, and be syringed overhead morning and afternoon on bright days, and be shifted into larger pots before the roots become matted in the soil. Water must be applied sparingly at the roots after the plants are shifted and until they begin to push freely into the soil. The size of pot or number of shifts which the plants should receive must be determined by what they are intended for, the time of planting them out this year, or for fruiting in pots next season. Where large quantities of pot Vines are grown the pots are stood closely together on the side stages over the pipes in low span-roofed houses, having a sharp angle, and the Vines trained within a few inches of the glass in the direction of the apex, whence, as well as through the side lights, fresh air is admitted when necessary. Young Vines will grow equally welf trained up under the roof of a lean-to house. Young Vines of last year's striking should be cut back to within 9 or 12 inches of their bases, the wounds dressed with Thomson's styptic, and then be put into a vinery just started, and when they have made 1 inch of growth the plants should be re-potted, the old soil shook off the roots, the latter shortened back a little, and then potted, using a compost consisting of rather more than three parts of good turfy loam and one of old mortar rubble and horse-droppings, making the compost moderately firm about the roots in potting. *H. W, Ward, Longford Castle.*

NEW APPLIANCES.

ONE of the most useful amongst these is Mr. B. S. Williams' (Victoria Nurseries, Holloway) apparatus

FIG. 38.—THANATOPHORE APPARATUS WITH MODERATOR SPIRIT LAMP.

for boiling tobacco-water, and named the "Thanatophore" (fig. 38). It is now pretty well known to cultivators both on the Continent and here that the juice of Tobacco, when evaporated in plant-houses, is most inimical to insect life, but its application has hitherto been attended with some difficulty. The Thanatophore, of which there are three sizes manufactured—two with coal-heated furnaces and one with methylated spirits (an illustration of which is here given)—is intended to be used from the outside of a house or pit; and thus the injury to plants from heat and the fumes of the fire is avoided, and the operator can regulate the apparatus in comfort. The principle is that of a copper reservoir to hold the juice, with a steam reservoir and a dome-shaped top fitted with a tube for conducting the steam into the plant structure. We are indebted to Mr. B. S. Williams for the opportunity of illustrating the invention.

HAWE'S WATERING CAN.

A new kind of watering can, which we think is an improvement, and which will find favour with gardeners, the small sizes being especially useful for watering plants on shelves, and for use in winter, when the slopping about of water in glass-houses is oftentimes most undesirable. The can was shown by Mr. J. Hawe, 4, Mayola Road, Clapton, at the meeting of the Royal Horticultural Society on December 7, 1886. (See fig. 39.)

HOME CORRESPONDENCE.

LUCULIA GRATISSIMUM FROM SEED.—Notwithstanding statements to the contrary by some cultivators, this handsome and popular evergreen greenhouse shrub is not easily propagated from cuttings; hence the reason why young flowering plants are not more commonly seen in gardens. Few flowers are more appreciated for their sweetness and beauty than this Himalayan shrub, and it is especially valuable as a winter flower. There is no reason why young plants should be scarce, as the plant is easily raised from seed. Sow the seed in March—nurse the seedlings in moderate heat until they are fairly established in 3-inch pots—they may afterwards be grown in cooler pits or houses, and potted on as growth progresses; ours are grown in the Camellia-house near the glass. Most of the seedlings will flower the second year if carefully grown; after flowering they may be pruned to form either standards, pyramids, or bushes, as may be desired. They succeed well in equal parts of peat and loam with sufficient sand to keep the soil porous. Insects seldom infest this plant, thrips only being an occasional enemy, which can be got rid of by fumigation. *J. C.*

WHY DO FOOTPRINTS REMAIN ON A LAWN AFTER SNOW?—Can any one tell me why footprints made on a lawn during snow continue after the thaw to be marked with dead grass, when all around them is green? I have examined the dead grass blades, and do not find that they are broken at the base, which might be supposed to be the cause; nor does the same phenomenon happen after a dry frost when the frozen blades would be more liable to be broken. *C. W. Dod, Edge Hall, Malpas, Cheshire.*

ORIGIN OF THE WORD PICOTEE.—I think your correspondents on this subject miss one important point, viz., that being freckled or spotted is not, and never was a distinctive character of the Picotee, but was common in some form or other to all the forms of the Carnation; indeed, the modern well-bred Picotee is rather an exception than otherwise, the colours being confined to the outer edge of the petals. "Picotee" is a distinctive term not applied to a freckled Carnation, but to lace-edged Carnation fringed with picots or points. *George Maw, F.L.S.*

—— Allow me to suggest whether the name of Picotee, perhaps as a first contradistinction to selfs, is not derived in some way from the Latin "pingo, pinxi, pictum." The explanation would be easy: is there a likelihood of it being correct? *O. P.*

—— Reading Mr. Dod's note, p. 43, January 8, about the name Picotee, I at once opened a French-English and *vice versâ* Dictionary (an old one of Boyer and Deletanville, by Boileau and Picquot, London, 1835—I bought it for 6*d.* at Edinburgh when preparing for France), and found "*un picot*, a purl of lace." Is not that satisfactory and appropriate? Would anything answer better than "a laced Carnation"? I should think the flower would be content with that name if it had to choose for itself. Seeing that the French for smallpox is *vérolé*, I find it more probable that people "marked with the smallpox" have chosen to call themselves *picoté* (laced), instead of *vérolé*, which would probably have been more proper. Still they are innocent in so far as they did not know at that time that they thereby would be insulting so pretty a flower. Is not that curious, that a Dane living in Sweden should tell an Englishman the meaning of a French word? *M—n.* [We append Webster's meaning of the word as applied to the flower in question:—"*Purl.*—1. An embroidered and puckered border; a hem or fringe, often of gold or silver twist. 'A triumphant chariot made of carnation velvet, enriched with purl and pearl.' *Sidney.* 2. An inversion of stitches in knitting, which gives to the work when it is used a ribbed or waved appearance." ED.]

PRIMULA STUARTII.—I send for your inspection a healthy winter bud of P. Stuartii, together with one of our native P. farinosa for comparison. A plant of the former, after flowering, sent out fifteen shoots which I took off in August and made into separate plants; several of these flowered at the end of October, but all have now subsided into buds like that which I enclose. It resembles an Amaryllis bulb more than a Primrose root, and is coated with a fibrous tunic from the fibres of the dead leaf-stalks. I find P. Stuartii rather difficult to keep through the

winter, because at the end of summer the old root-stock rots away, and the rot often involves the new growth, which it is therefore better to detach as soon as formed; but the wet summers and autumns of our climate encourage late growth and flowering, followed by the natural tendency to rot at the root before a second new growth can be developed. This is obviated by covering the plant with a handlight or inverted pot during winter, so as to keep it dry. Still it is not easy to keep a stock of P. Stuartii without the help of seed, which has never been ripened here. In some cases just enough root remains alive to anchor the bud in the ground; in others every bit of root dies away, and leaves the bud loose on the surface. The same happens with our P. farinosa, of which I have seen these buds in their habitat lying flat on the surface of the soil until the roots grow at the end of winter, and draw them upright again. In my own garden I have sometimes buried them in winter to save them from vermin, but I think that when so treated the bulb always rots. *C. Wolley Dod, Edge Hall, Malpas, January 23.*

EARLY PEAS. — What variety may be denominated the First Early? According to the records made at Chiswick last year, Sutton's Emerald Gem led the way, but only very slightly so, as this variety, Selected Extra Early, Earliest of All, and Sharpe's First Early, were all ready on June 28, sown and grown in the open air. The last three appeared to be selections from the old Sangster's No. 1. Next came Surpass William I., an excellent garden variety, not so curved in the pod as William I., and a great cropper; this was ready on July 2, and with it First Favourite, also a good and useful early variety. Following these were Special Early, Day's Sunrise, and Eckford's Extra Early, a somewhat tall-growing variety for so early in turning-in; it may be described as a singularly precocious Ne Plus Ultra, large pods, a great cropper, and invaluable for early exhibition. This is a Pea that exhibitors at early shows should look after. Day's Sunrise appeared to be earlier at Chiswick—that is generally the case; and though originally sent out as a First Early, it was found to be a Second Early, but it has since been selected, and the sample sent to Chiswick was doubtless of this character. Chelsea Gem, a very promising dwarf early Pea, 18 inches to 2 feet in height, bearing slightly curved white pods of good size, is also likely to prove very useful for early exhibitions, was one day late. I think this is likely to prove one of the best Peas for small gardens seen in recent years. William I. was ready by July 5, and this may be said to complete a list of varieties turning-in within a week of each other. *R. D.*

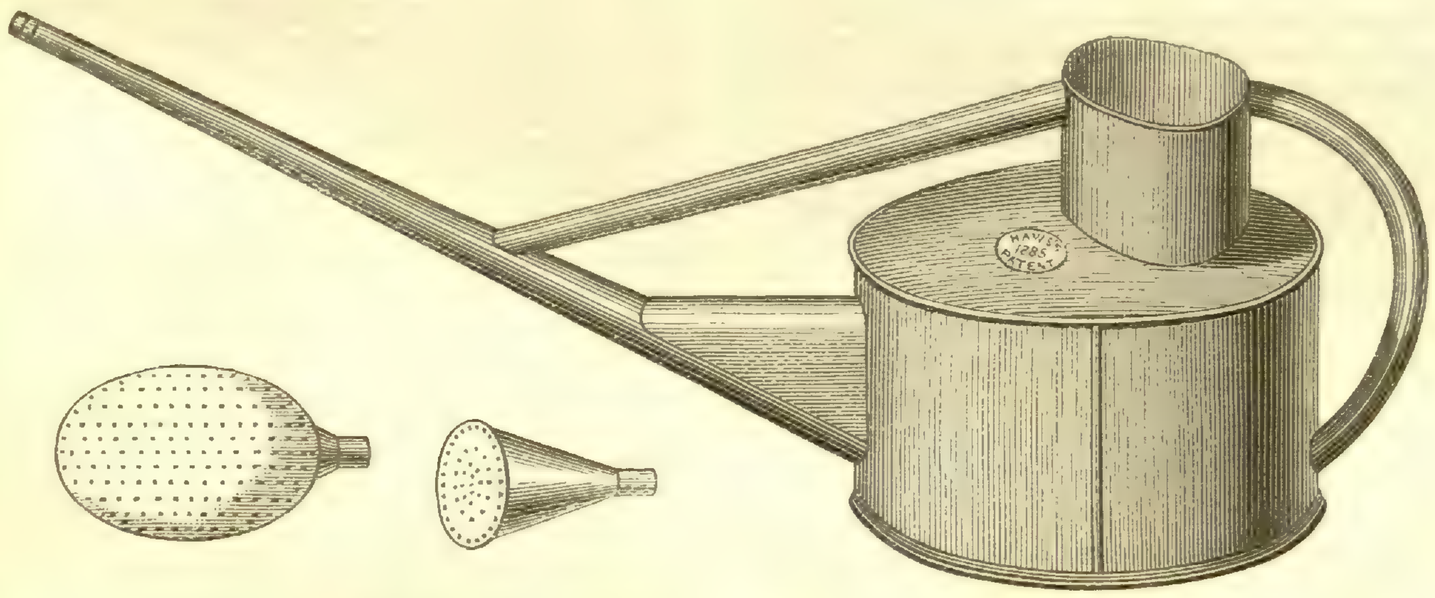

FIG. 39.—MR. J. HAWES' WATERING CAN. (SEE P. 152.)

THE RIVAL ETHELS — CHRYSANTHEMUMS. — Having read the remarks of your able correspondent, "R. D.," respecting the two Ethels—that these sports from the well known white Chrysanthemum Ethel are probably one thing—I beg to inform him that they are quite distinct, as was observed when Mr. Ware came to Norwich on December 9, bringing his Mrs. H. J. Jones with him. On placing the cut blooms side by side it was immediately seen that Mrs. W. Allen was of the deepest and brightest golden-yellow, whilst Mrs. H. J. Jones was several shades lighter, consequently they are distinct varieties, and so they will eventually prove to be when exhibited together at the next autumn shows. *W. Allen, Norwich.*

BEE FLOWERS.—I cannot claim to be an authority on bees, or their favourite flowers, as all that I know respecting them has been gathered in one season; and may I be allowed to mention as encouragement to your correspondents who write the Apiary notes, that it was through reading their articles that my desire to become a bee-keeper was created? I trust others have been influenced in a like manner, and that they have derived as much encouragement, recreation, and pleasure by attending to bees, and studying their habits as I have done. During last summer I took considerable interest in finding their feeding grounds, and I think I have read most of the paragraphs that have appeared recently in your columns on bee-flowers, but have not noticed the common garden Parsley in any list, yet a border of this herb was, when in blossom, by far the most crowded feeding place that has come under my observation. One sunny morning I called an enthusiastic bee-keeper's attention to this border, who said that he had not previously witnessed such a sight, and declared he would plant his garden entirely with Parsley, and allow it to blossom. I should not be surprised to see it upon his house-top, if there was any likelihood of its succeeding there. Pyrethrum uliginosum is much frequented by bees late in the autumn, and Tilia argentea, which blossoms freely after the common Lime is past, is visited by vast numbers. Where ornamental trees are appreciated this variety should not be overlooked in planting. There is a fine specimen on a lawn here which is much admired, and deservedly so. For pollen, the Asparagus Kale is invaluable; we have prepared several rows of this vegetable, which after yielding sprouts for the kitchen, will be allowed to blossom in succession, and according to last year's experience they will be profitably made use of. Some writer directed attention to the way in which the young shoots of the common Laurel are visited; I have frequently noticed this, and also that similar visits are paid to the Jerusalem Artichoke. *Thos. Coomber.*

MINA LOBATA.—It is pleasing to be able to note the reintroduction of the peculiar form of Mexican Bindweed, named after the late Mexican Minister, F. X. Mina. When originally introduced it was considered suitable for greenhouse culture only, and being of a somewhat weedy habit of growth, proved under greenhouse treatment too shy a bloomer, and therefore failed to get generally cultivated. Now that it is considered a fitting subject for outdoor summer culture, treated as a half-hardy annual climber it is likely to obtain more favour from gardeners. There is but little doubt that the introduction of the many varieties of hybrid Clematis with beautiful flowers made quite a revolution in the matter of hardy climbing plants; there is room, nevertheless, for greater variety. Tropæolums of the Lobbianum type, Maurandyas and Lophospermums, all deserve more frequent culture, though, for gorgeous display of foliage and numerous twin-like upright racemes of bright red, wearing away to yellow and white colours, the Mina has characteristics which, if taken in detail, rival them all. It has the merit besides of continuing to bloom until late in the autumn, until destroyed by frost. *William Earley.*

SINGLE CHRYSANTHEMUMS.—"There is room for all varieties. Let us grow representatives of as many distinct sections as we can get:" *vide* p. 10, Jan. 1. This is true toleration. Why should one proscribe what another may like? Ladies are very pleased with them, for many purposes; they come in usefully for cutting while a scissors cannot be allowed near a show bloom. This section improves every year, as nothing is easier than to grow them from seed, and there is the infinite zest in watching to see if you may not get a very good double among the seedlings. Seed sown within the next month or six weeks will bloom profusely if treated in the customary way, or even planted in a warm corner in the coming autumn. At the same time, to prevent disappointment, a dozen varieties at least, of proved merit, should be procured from some one who makes them a specialty, such as Mr. Cannell, of Swanley; for instance, America, large, bluish-white; Ellen Terry, long petals, magenta; Crushed Strawberry; Mary Anderson, pure white; Mrs. Kellock, quilled, rosy-lilac; Gus Harris, Queen of the Yellows, Helianthus, Miss Cannell, The Virgin, Marigold, and Jane—all different, and all certificated, I believe. *W. J. M., Clonmel.*

THE LATE STORM AND TREES AND SHRUBS.—On looking round Oakwood garden to see what damage had been done by the late snowstorm, I found we had escaped more easily than could have been expected. Some time back I recommended a fence made of rabbit-wire 6 feet high in one piece. We have a large quantity of this, which is sufficiently supported for any ordinary strain, but above 70 yards was blown over, the snow having filled the meshes, and so given the wind purchase; therefore it seems desirable when this fence is used to add to the supports by wires fastened to any trees in the line. Our large Camellia has only one or two small branches broken, but my man beat much of the snow off. A fine head of Andromeda japonica, covered with buds, was broken off, and a large Choisya ternata had some branches broken, but a large Photinia serrulata close by was uninjured. Our big Rhododendrons in the wood have hardly any branches broken. Meconopsis Wallichii, unprotected, looks perfectly fresh and green; seedlings of Sikkim Rhododendrons, not above an inch high, do not seem to have felt the cold; Ilex latifolia is very little touched. The effect of the snow was shown along the road to the garden, by great numbers of branches on the ground at the edge of the Fir woods. A friend with a beautiful garden at Chislehurst gave me a most saddening account of breakages of a great number of his trees and shrubs. So far our props with Bracken interlaced seem efficacious as protection for tender plants. *George F. Wilson.*

THE DECISIONS OF THE R.H.S. COMMITTEES.—Your correspondent, "F.R.H.S.," p. 118, appears to think that all members of the Floral Committee should vote; the fact is, that in many cases only experts can form a correct judgment. Take, for instance, a new Dracæna or one of Mr. Veitch's hybrid Java Rhododendrons: many members of the committee have only a general knowledge of these, and cannot tell whether the plant exhibited, however beautiful, is sufficiently distinct from those already grown to be worthy of a certificate. I think that in these cases it is a question for the private judgment of each committee man either to follow the opinion of experts and vote, or to leave the decision to them. When in the chair I do not vote, though reserving the right to do so; but when not in the chair, and the plant is one of a class in which I am not well up, I usually prefer not voting; I could hardly therefore advise others to take the opposite course. It is one of the advantages of a large committee that it includes enough of all the different specialists to insure a decision which will carry weight. The same reasons which prevent people signing their names to notes in the journals might make them object to the names of the voters being published. *George F. Wilson.*

STANDARD ROSES. — Is the standard Rose doomed? Some of the leading Rose nurserymen tell us that the demand for standard Roses is falling off, and that it is difficult to sell them. But they are useful in small forecourt gardens in the suburbs of towns and cities, where, by reason of confined space, something tall is required, and standard

Roses answer this purpose better than anything. After all standard Roses with grass below them appear to be well suited to many villa gardens, where it would be difficult to cultivate dwarf bushes. *R. D.*

SOCIETIES.

HULL AND EAST RIDING CHRYSANTHEMUM.

The annual meeting of this Society was held on the evening of the 24th inst., at the Station Hotel, Mr. G. Bohn, C.E. (Chairman), presiding.

The committee submitted the annual report and balance-sheet, the former of which spoke hopefully of the present condition and future prospects of the Society. The annual show, held on November 18 and 19 last, was attended by nearly 10,000 visitors, being an increase of 3000 on the previous year. The report also drew attention to the crowded state of the rooms on the second evening of the show, which necessitated the closing of the doors shortly after 8 o'clock, and expressed the hope that the next show might be held in the proposed public hall of the town. The balance-sheet also showed a satisfactory state of affairs, and, after a short discussion, both were unanimously adopted.

The meeting then proceeded to the election of officers. Mr. Bohn, having stated his intention of retiring from the chairmanship, Mr. R. F. Jameson, who had resigned his position of Secretary, was unanimously selected to succeed him. The Vice-chairmen, Major Brodrick and Mr. A. W. Stanley, were re-elected, with the addition of Mr. Bohn. Mr. Hawksworth having expressed a strong desire to resign his secretaryship, Messrs. R. Collison and E. Harland were elected joint Honorary Secretaries. Mr. C. Judge and Mr. R. Judge (*vice* Mr. Cogan resigned) were appointed Treasurers.

THE ORCHID HOUSES.

POTTING, ETC.

During mild weather the potting of Orchids should be pushed forward. If not provided with a warm potting-shed, a portable bench erected within the Orchid-houses is best. Bring all potting material into a warm place some time before using it. The Cypripediums in the East Indian-house can be taken first. For a compost use two parts good fibrous peat and one part fresh sphagnum, with plenty of drainage; we add a few lumps of yellow loam, and do not mix the compost before using. I find Zygopetalum rostratum grows best in the warmest house. It should be kept moist at the roots, and when its roots are growing over the side of the pot, if the potting material be still in good condition, plunge the pot into a larger one, and top-dress lightly with fibrous peat and green sphagnum. Large specimens of Zygopetalum Mackayi if getting ragged may be broken up, and the pieces potted to form new plants.

Cœlogyne barbata can be potted, also many of the Maxillarias which are starting to grow. And Vandas that have become unsightly through losing their leaves, may be cut down if there are plenty of roots above the pot. When potting fill in about the roots with clean crocks nearly to the rim of the pot, and cover with fresh sphagnum moss. Keep the plants for a time at the warmest part of the house, and damp around the pots often until the plants are well established. Pachystoma Thomsonianum will be starting to grow now, and should receive attention if potting or top-dressing be necessary. It should be watered more frequently as the growths advance.

MISCELLANEOUS SUBJECTS.

Imported plants of Angræcum Scottianum that are suspended head downwards in the Phalænopsis-house and syringed twice a day, should now be sending out roots from the stems that were bare; this will allow of their being brought into better shape when placed in baskets. Arpophyllum giganteum is a good old Orchid when flowered well. I have often seen this plant growing freely without making flower-sheaths. The Cattleya-house is the best place for the plant, keeping it under-potted, with little else but crocks to root in.

Sarcochilus Hartmanii and S. Fitzgeraldi grow best under Cattleya-house conditions; they enjoy plenty of water when suspended. With these grow the small Lælia monophylla. As plants of Cœlogyne cristata come into flower an opportunity will be afforded of proving which are the best varieties; the two best in flower here at present are what are known as the Chatsworth and the St. Albans varieties; and two other good varieties that flower later are C. cristata hololeuca (alba), and the Trentham variety of C. cristata, which last is very fine.

CATTLEYA TRIANÆ.

These are beginning to open their blooms, and will receive no special treatment whilst in flower; the requirements of the plants will be studied first, as we generally find the blooms last too long for the good of the plants. As a matter of course, they are never syringed overhead, but the house is damped in the usual way; the bottom ventilators are not closed early in the afternoons, to charge the air with extra moisture, nor the temperature run up to a high degree with sunheat. Where plants are taken into a cooler house whilst in flower it will be best to keep them rather drier at the root, but I think a very dry atmosphere hastens the fading of the flowers. Cockroaches will be very troublesome now in many Orchid-houses; these like a change even in poison. We sometimes lay down Chase's beetle poison, and at other times the blue phosphoric paste that is sold in small jars. *C. Woolford, Downside, Leatherhead.*

CULTURAL MEMORANDA.

SCHIZOPETALON WALKERI FOR POT CULTURE.

Though by no means a showy flowering plant, the characteristic neatness of the small white flowers of this species of Schizopetalon give to it an interest that many more pretentious in the matter of display do not possess. This is greatly owing to the manner in which its petals are cut, and from which the generic name is derived. Though placed nominally (in seed lists), amongst hardy annuals, it should always be treated as a tender plant. Being a native of Chili, it requires some amount of artificial heat in its early stage, and should therefore be sown and grown in heat, so as to afford time for coming duly furnished with the greatest possible number of flowers. Besides being sweet-scented, it is a desirable plant for pot culture, by affording variety to collections of greenhouse plants. It does best on a shelf near the glass, where it succeeds better than in any other position. Sow the seeds in pans or boxes in the month of March, and, when large enough, transplant the young plants several together into 60-sized pots, giving a shift into 48's so soon as large enough to require extended root-room. *William Earley.*

SALVIA PATENS.

Those who possess no roots of this beautiful species can soon raise a number of plants from seed. This should be sown in pots or pans of sifted potting-bench material, or, failing that, in loam and leaf-soil in equal proportions, with the addition of a little peat and sand; a fair amount of drainage must be put in, covering the crocks with the siftings to half the height of the pot, then watering the pots and standing them aside. After sowing thinly, water sufficiently to damp and settle the soil, and place in a moderate hotbed. When the young plants appear place the seed pots in a somewhat cooler, airier frame, until the plantlets are large enough to be handled, when they may be transplanted singly into small 60's, and be grown on in a vinery or Peach-house till April, when they may be gradually inured to the air and planted out in the end of May. Salvia patens makes a fine bed by itself; the flowers are produced in long succession, and are effective till October. Planted among grey or white-leaved plants of a dwarfer habit, or in company with Ribbon-grass, or planted with Gladioli and Lobelia cardinalis amongst dwarf evergreen shrubs, the effects are very charming. Roots may soon be potted, and cuttings taken as soon as the young growth has attained the length of 3 inches.

CAMPANULA CARPATICA.

This fine light blue-flowered Bell-flower is particularly fine for small clumps, and edgings to beds of tall flowers and shrubs. Where old plants exist these may be taken up in March and divided, potting up the pieces into 60's, and keeping in a cold pit till established, or division may take place early in April, the roots being at once planted in their new site. Seed can be sown in February in a little warmth, taking care to place the seed-pans in a cooler place on the true leaf appearing. The seed is minute, and requires thin sowing. Transplant the seedlings, as soon as large enough to handle, into other pans of ordinary soil, and treat as recommended for divided plants, finally planting out in May, or when sufficiently large. *W. M.*

THE KITCHEN GARDEN.

GENERAL WORK.

Seeds to Sow.—Where any deficiency is likely to occur in autumn-sown subjects, provision should be made to meet them, by sowing in gentle heat Lettuce, early Cauliflower, Cabbage, &c., afterwards to be hardened off and pricked out. Some early varieties of Peas may also be sown in 4-inch pots, with from six to eight seeds in each; these should be prepared for planting out on sheltered situations in February or March. Broad Beans also succeed well and come into use early, if sown in shallow boxes in leaf-soil, and planted out before the roots become too much matted together; in this case, as in many similar ones, very much depends on their being properly prepared beforehand and in the protection afforded after planting. Whenever the state of the weather will permit ground work must be proceeded with, and opportunities taken during light frosts to fork over the surface of any plots already dug, thus rendering the soil in a fine and workable condition, and also in destroying slugs and other insects.

TRADE NOTICES.

MESSRS. WEBB AND SONS, STAFFS.

On Saturday last Messrs. Webb's clerks, numbering about fifty, had their annual dinner at the "Mitre Hotel," Stourbridge, and after full justice had been done to the excellent spread provided, Mr. J. P. Hutchings took the chair, and a very pleasant evening was passed, a varied programme of vocal and instrumental music being gone through in a very creditable style.

Mr. E. Wilson Serpell, Seedsman, of Plymouth, having resolved to confine his attention solely to his seed business, has determined to take advantage of the expiration of his lease, and offers for sale the Vinestone Nursery, and the whole of the stock it contains.

PLANT PORTRAITS.

Cattleya Mossiæ alba var. M. Pirot, *Orchidophile*, January.

Chrysanthemum Traviata, C. rubro-striata, *Revue de l'Horticulture Belge*, January.

Cypripedium Schroderiana, *Lindenia*, t. 69 (see *Gard. Chron.*, xix., p. 432).

Oncidium prætextum, *Gartenflora*, t. 1238.

Picea Omorica, *Gartenflora*, January, p. 16. See also *Gardeners' Chronicle*, p. .

Sophronitis grandiflora (militaris), *Revue de l'Horticulture Belge*, January.

Obituary.

W. WOOTTEN-WOOTTEN. — By the death of W. Wootten-Wootten, Esq., of Headington House, Oxford, the Royal Oxfordshire Horticultural Society loses one of its Honorary Secretaries, and a generous supporter. He was a brewer and banker, and died suddenly in his office on Monday, the 17th inst. He was an exhibitor of Cape Heaths, exotic and hardy Ferns and Lycopods, Orchids, cut Roses, and herbaceous perennials. He attended a committee meeting of the Oxford Horticultural Society on January 12, and was for nearly three hours engaged in re-arranging the schedule of prizes, &c., and then seemed in the best of health. He had been connected with the Society for nearly forty years, and died in his sixty-seventh year.

ENQUIRIES.

"He that questioneth much shall learn much."—BACON.

DAUBENTONIA TRIPETIANA.—I should very much like to gain information concerning the cultivation and flowering of this plant, if any one can give it. *H. J. van Heyst.*

NOTICES TO CORRESPONDENTS.

TO THE TRADE.—Members of the Trade will oblige by sending notes of matters of Trade interest, Cultural or Commercial.

INTELLIGENT READERS, DO PLEASE NOTE.—*Letters relating to* ADVERTISEMENTS, *or to the supply of the Paper, should be addressed to the* PUBLISHER, *and not to the Editor.*

*** All communications intended for publication should be addressed to the "*Editor.*" Such communications should be *written on one side only of the paper*, and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

PHOTOGRAPHS, &c.—The Editor will feel greatly obliged to any reader who will forward photographs or drawings of gardens, plants, or other subjects of interest.

"BOTANICAL MAGAZINE" AND WILD FLOWERS: *G. B.* The *Botanical Magazine* is issued monthly. For information in regard to classes for the study and classification of plants, apply to the Schoolmaster, Harpenden, Hertfordshire.

COST OF FABRICATING SILVER MEDALS: *J. D.* A manufacturing silversmith in your town would supply more trustworthy information on the subject than we can do.

DAMAGE BY CAT: *J. M.* If after notice to the owner of damage done by the cat the animal is not secured, you can recover damages against him for injury subsequently inflicted by the cat. You ought not to destroy the cat unless it be in a rabid state. The animal still remains the property of the owner, although it may be found on another person's ground.

FUCHSIAS, SORTS, AND BOOK ON THEIR CULTIVATION: *H. K*, Duchess of Albany, light; Duke of Albany, dark; Glory of the Day, pure white tube and rays, corolla carmine; Lord Wolseley, deep red rays, corolla rosy crimson, margined with blush-purple; Dr. Sankey, long pendulous blooms, bright red, robust grower; Beauty of Clyffe Hall, blush, white tube and rays, corolla carmine—very free and robust one of the best; Beauty of Wilts, light, excellent; Marksman, tube and rays carmine; Minerva, corolla double, white, carmine tube and ray. *A Practical Treatise on the Fuchsia*, by Frederick Buss (published by E. W. Allen, 4, Ave Maria Lane, E.C.), price 1*s*.

HYACINTHS FAILING TO THROW UP FLOWER STALKS: *R. W.* The bulbs may have suffered from spring frosts, a prolific cause of failure to flower. This injury to the bulbs is usually known to the grower, but cannot be detected from an inspection of the exterior.

MUSHROOM CULTURE: *R. M. H.* Wright's *Mushrooms for the Million*, published at the office of the *Journal of Horticulture*, 171, Fleet Street, London, E.C., price 1*s*.

MUSHROOM GROWING: *A Subscriber.* Evidently you do not possess the least acquaintance with the matter. Get the book recommended to *R. M. H.* in this column, and follow the instructions therein given.

NAMES OF FRUIT: *J. S.* Annie Elizabeth.—*L'Allegro. Pear:* Beurré Diel.

NAMES OF PLANTS: *A. C.* 1, Odontoglossum Humeanum, supposed natural hybrid between O. Rossi and O. caudatum; 2, Lælia anceps, approaching Percivallianum; 3, Odontoglossum Rossi majus. All good blooms.—*W. A. W.* Odontoglossum nebulosum.—*H. St. C.* 1, Odontoglossum Sanderianum; 2. Celsia cretica.

NOXIOUS PAINT ON HOT-WATER PIPES: *X.* Paint the pipes with a very strong wash of pearlash to remove the paint and possibly gas-tar or Berlin black that is underneath it, for we think that ordinary lampblack and linseed oil, which you state the paint is composed of, would not cause the plants to cast their foliage. Is it possible for fumes from the boiler fireplace to get into the house?

PRIMULAS ROTTING AT THE COLLAR: *Westfield.* Your plants have probably been eaten by weevils or their maggots at the point of contact with the soil, and decay afterwards set in. See *Gardeners' Chronicle* of this month for notices on the same subject.

RHODODENDRON AND HOLLY GRAFTING: *W. M.* When inarching Rhododendrons in the open air in summer, clay covered with a little moss is most commonly employed to cover the place of contact. Grafting-wax (L'Homme le Fort) is likewise very effectual and economical in use, as it need not be spread all round the shoots, as is done with clay, but only over such places as afford ingress for the rain. For grafting and inarching under glass the wax is to be preferred to anything else.

SADDLE BOILER WITH FOUR FLOW-PIPES NOT ACTING PROPERLY: *F. Bull.* It is not a common practice to lead four flow-pipes directly from the boiler, but to branch these off from the main flow at some distance from it. This method is in practice found to be preferable as inducing a more rapid circulation of the water in the pipes; but that your pipes should scarcely get warm points to there being an impediment to the flow of water, either because of the introduction of air at some point, or of something more substantial. You had, therefore, better consult a practical hot-water artificer.

VIBURNUM: *E. C. C. D.* V. Opulus and V. Lantana are British plants and easily procurable; the first has globular heads of white flowers, succeeded by red berries, and the other has a Cauliflower-like head and purple berries. V. Opulus has the finest autumn tints in the foliage. These species can be struck from cuttings of ripe wood, put in the open border in early autumn. If made with a heel of old wood, so much the easier do they strike.

CATALOGUES RECEIVED.

J. AND R. THYNE, 83, St. Vincent Street, Glasgow, N.B.—Garden Seeds.

ARTHUR BOOTY & Co., 7, Parliament Street, Harrogate—Garden and Flower Seeds.

HOOPER & Co. (Limited), Covent Garden, London—Seed Catalogue.

WILLIAM REID, 8, Hadden Street, Aberdeen, N.B.—Garden and Flower Seeds.

JAMES L. BOYSON, Caen, France—New Roses of 1886-87.

HOGG & ROBERTSON, 22, Mary Street, Dublin—Vegetable and Flower Seeds.

ALFRED WATKINS, Hockerill, and North Street, Bishop's Stortford—Seeds and Sundries.

W. M. BEALE, Post-office Buildings, Neath, Wales—Seeds and Sundries.

KELWAY & SON, Langport, Somerset—Manual for 1887.

THYNE & PATON (late of John Stewart & Sons), Aberdeen—Seeds.

COMMUNICATIONS RECEIVED.—W. C.—C. B. S.—H. J. van Heyst.—C. J. Coninck.—C. F.—J. Veitch & Sons.—F. H.—Sufferer.—B. S. Williams.—R. D.—T. W.—J. A. W.—D. M.—Wild Rose.—D. T. F.—H. S. J. C.—R. W.—N. B.—W. B. H.—J. B.—W. and J. B. (application next week).—J. G. B.—W. T. T. D.—D. M.—J. M.—R. C.—Dr. Selwyn, Ottawa.—T. C. (Carnations next week).—C. W. D.—A. J.—M. D.—Udo Dammer, Berlin.—A. Gray.—J. P. & Son. H. E.—R. McL.—G. H.—B. F.—J. S. G.—Dr. Beijerenck.—Delft.—H. C.—G. S.—L. Linden, Ghent.—W. M.—Ruscus.—F. D. G.—W. C.—G. M.—C. M. O.—W. H.—T. W. S.—P. G.—G. J.—W. B.

THE WEATHER.

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING FEBRUARY 5. (AVERAGE OF THIRTY-THREE YEARS.)

January 30	... ...	38°.9	February 3 ... ... 39°.2
,, 31	... ...	38°.9	,, 4 ... ... 39°.3
February 1	... ...	39°.1	,, 5 ... ... 39°.3
,, 2	... ...	39°.2	Mean for the week ... 39°.1

THE PAST WEEK.

THE following summary record of the weather for the week ending January 24, is furnished from the Meteorological Office:—

"The *weather* has been in a finer and drier condition generally than that reported for some weeks past. Cloudy or overcast skies have, however, been very prevalent, but excepting in the extreme north and north-west the amount of rainfall has been slight.

"The *temperature*, which was rising briskly as the period commenced, has been above the mean in Ireland and Scotland, as well as over northern and central England, while in the east, south, and south-west of England the mean has been just equalled, In the 'Channel Islands,' however, it has continued a little below the mean. The highest of the maxima, which were registered in most places on the 19th, varied from 50° in 'Scotland, N.,' and 'England, N.E.,' 50° in the 'Midland Counties,' 'Scotland, W.,' and 'Ireland, S.' The lowest of the minima were generally recorded at the opening of the period, when the thermometer stood as low as 14° to 22° in the 'Wheat-producing' districts, and between 25° and 31° in the 'grazing' districts.

"*Rainfall* has been more than the mean in the north and west of Scotland, but less in all other parts of the kingdom.

"*Bright sunshine* has continued very deficient, the percentage of the possible amount of duration ranging from 4 in 'Scotland, N.,' and 9 in 'Ireland, N.,' to 23 in 'England, E.,' and 25 in the 'Channel Islands.'"

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 42° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	Temperature. Above or below the Mean for the week ending Jan. 24.	Accumulated. Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 4, 1887.	Below 42° difference from Mean since Jan. 4, 1887.
Principal Wheat-producing Districts.		Day-deg.	Day-deg.	Day-deg.	Day-deg.
0. SCOTLAND, N. ...	3 above	11	24	− 9	+ 9
1. SCOTLAND, E. ...	5 above	13	29	− 8	+ 35
2. ENGLAND, N.E. ...	2 above	7	19	− 12	+ 48
3. ENGLAND, E. ...	0 (aver.)	2	35	− 18	+ 52
4. MIDLAND COS. ...	1 above	5	32	− 23	+ 63
5. ENGLAND, S. ...	0 (aver.)	6	29	− 23	+ 40
Principal Grazing, &c., Districts.					
6. SCOTLAND, W. ...	4 above	19	19	− 9	+ 39
7. ENGLAND, N.W. ...	1 above	7	20	− 19	+ 49
8. ENGLAND, S.W. ...	0 (aver.)	21	13	− 25	+ 25
9. IRELAND, N. ...	3 above	26	10	− 13	+ 29
10. IRELAND, S. ...	3 above	30	8	− 19	+ 18
— CHANNEL ISLANDS	1 below	20	6	− 24	+ 12

DISTRICTS.	RAINFALL. More or less than the Mean for the Week.	RAINFALL. No. of Rainy Days since Jan. 4, 1887.	RAINFALL. Total Fall since Jan. 4, 1887.	BRIGHT SUNSHINE. Percentage of possible duration for the Week.	BRIGHT SUNSHINE. Percentage of possible Duration since Jan. 4, 1887.
Principal Wheat-producing Districts.	Tenths of Inch.		Ins.		
0. SCOTLAND, N. ...	11 more	15	3.8	4	10
1. SCOTLAND, E. ...	3 less	12	1.9	?	?
2. ENGLAND, N.E. ...	4 less	13	1.5	18	16
3. ENGLAND, E. ...	2 less	11	1.3	23	13
4. MIDLAND COS. ...	3 less	12	1.8	20	14
5. ENGLAND, S. ...	3 less	10	1.7	11	12
Principal Grazing, &c., Districts.					
6. SCOTLAND, W. ...	1 more	13	3.2	12	16
7. ENGLAND, N.W....	3 less	12	1.9	16	12
8. ENGLAND, S.W....	5 less	14	2.5	14	18
9. IRELAND, N. ...	2 less	12	2.1	9	18
10. IRELAND, S. ...	4 less	12	2.7	11	22
— CHANNEL ISLANDS	4 less	15	2.3	25	32

MARKETS.

COVENT GARDEN, January 27.

MARKET quiet, with supplies quite equal to the demand. A slight advance in best samples of Grapes, as also in Apples, the foreign supply being short. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apple, ½-sieve	1 6– ...	Lemons, per case ...	12 0–21 0
— Nova Scotia, brl.	8 0–12 0	Pears, per dozen ...	2 0– 4 0
Grapes, per lb. ...	1 0– 3 6	Pine-apples, Eng., lb.	1 0– 1 6
Kent Cobs, 100 lb. ...	65 0 70 0	— St. Michael, each	1 6– 6 0

VEGETABLES—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, per doz...	6 0– ...	Lettuce, per dozen ...	1 0– 1 6
Asparagus, French, per bundle... ...	21 0– ...	Mushrooms, punnet	1 6– 2 6
— English, per 100	12 0– ...	Mustard and Cress, punnet	0 4– ...
Beans, Kidney, lb. ...	1 6– ...	Onions, per bushel ...	4 0– ...
Beet, red, per dozen	1 0– 2 0	Parsley, dozen bunch	4 0– ...
Brussels Sprouts, lb.	0 4– ...	Potatos, per cwt. ...	4 0– 5 0
Carrots, per bunch...	0 6– ...	,, kidney, per cwt.	4 0– 5 0
Cauliflowers, per doz.	3 0– ...	Rhubarb, per bundle	0 6– ...
Celery, per bundle ...	1 6– 2 0	Seakale, per punnet	2 0– ...
Cucumbers, each ...	0 6– 1 0	Shallots, per lb. ...	0 3– ...
Endive, per dozen ...	1 0– 2 0	Spinach, per bushel...	4 0– ...
Green Mint, bunch...	1 0– ...	Sprue, bundle ...	1 0– ...
Herbs, per bunch ...	0 4– ...	Tomatos, pet lb. ...	1 0– 1 6
Leeks, per bunch ...	0 3– ...	Turnips, bunch ...	0 4– ...

POTATOS.—Regents, 80s. to 100s.; Magnums, 70s. to 110s. per ton.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz.	6 0–18 0	Ficus elastica, each .	1 6– 7 0
Arum Lilies, dozen...	18 0–24 0	Ferns, in variety, per dozen	4 0–18 0
Azaleas, per dozen ...	24 0–42 0	Foliage plants, various, each	2 0–10 0
Begonias, per dozen	6 0–12 0	Hyacinths, 12 pots...	6 0–10 0
Bouvardias, doz. ...	9 0–12 0	Marguerite Daisy, per dozen	6 0–12 0
Cyclamens, dozen ...	12 0–24 0	Myrtles, per dozen...	6 0–12 0
Cyperus, per dozen .	4 0–12 0	Palms, in var., each	2 6–21 0
Dracæna terminalis, per dozen ...	30 0–60 0	Pelargoniums, scarlet, per doz. ...	6 0– 9 0
— viridis, per doz.	12 0–24 0	Poinsettias, dozen ...	12 0–18 0
Epiphyllum, dozen...	18 0–30 0	Primula sinensis, per dozen	4 0– 6 0
Erica hyemalis, per dozen	12 0–24 0	Solanums, per dozen	9 0–12 0
— various, dozen ...	9 0–24 0	Spiræa, per dozen ...	12 0–24 0
Euonymus, in var., per dozen	6 0–18 0	Tulips, 12 pots ...	6 0– 8 0
Evergreens, in var., per dozen	6 0–24 0		

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Arum Lilies, 12 blms.	4 0– 6 0	Poinsettias, per 12 sprays	4 0– 8 0
Azaleas, 12 sprays ...	0 9– 1 6	Primulas, single, 12 bunches	4 0– 6 0
Bouvardias, per bun.	0 6– 1 0	— double, 12 sprays	1 0– 1 6
Camellias, 12 blooms	2 0– 4 0	Roses, Tea, per doz.	2 0– 4 0
Carnations, 12 blms.	1 0– 3 0	— coloured, dozen.	3 0– 6 0
Eucharis, per dozen	4 0– 8 0	— red, French, doz.	2 0– 3 0
Gardenias, 12 blooms	12 0–24 0	— Saffrano, Fr. doz.	1 0– 1 6
Heliotrope, 12 spr.	0 6– 1 0	Tropæolums, 12 bun.	1 0– 2 0
Jasmine, white, bun.	0 6– 0 9	Tuberoses, 12 blms....	2 6– 4 0
Lilies of the Valley, 12 sprays	0 9– 1 6	Violets, 12 bunches...	1 6– 2 0
Marguerites, per 12 bunches	3 0– 6 0	— Parme, French, per bunch	7 6– 8 6
Mignonette, 12 bun.	3 0– 6 0	— Czar, Fr., bunch	2 0– 3 0
Pelargoniums, 12 spr.	1 0– 1 6		
— scarlet, 12 sprays	0 9– 1 0		

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LEAF-MOULD (without which plants cannot be properly cultivated), three years old, for Ferns, &c., 1 bushel sack, 1s. 9d.; 2 bushels, 3s.: forwarded carriage-paid within seven miles on receipt of Postal Order. E. CHAMBERLAIN, Nurseryman, 192, Haverstock Hill, N.W.

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Write for Testimonials and Directions for Use.

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BEESON'S MANURE is the best for all Horticultural Purposes. Sold in tins, 1s., 2s. 6d., 5s. 6d., and 10s. 6d., or 1 cwt. bags, sealed, 13s. each. By all Nurserymen or Seedsmen, or direct from Carbrook Bone Mills, Sheffield. Also pure CRUSHED UNBOILED BONES, any size, and guaranteed of the best quality.

COCOA-NUT FIBRE REFUSE.—Great Reduction. Truck-load, (2 tons), 17s. 6d.; in Bags (40 bags included(, 25s. Free on to Rail. Cash with orders. J. STEVENS AND CO., Fibre Merchants, Greyhound Yard, and 153, High Street, Battersea, S.W.

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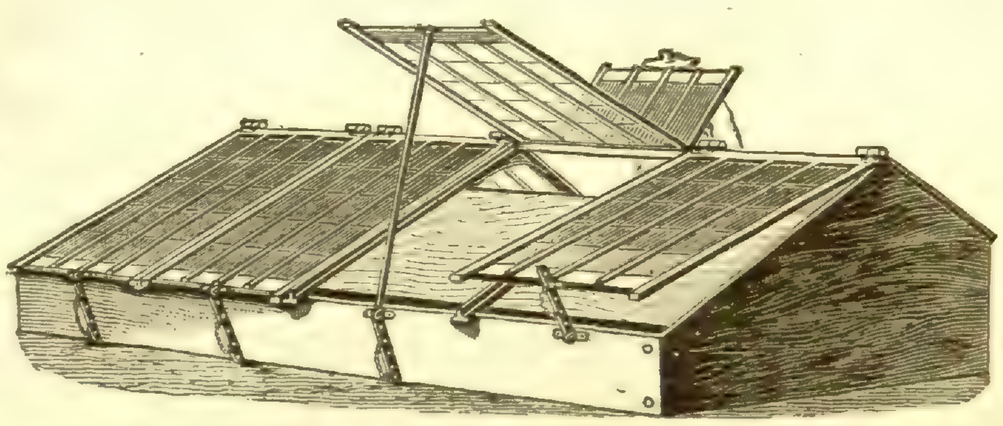

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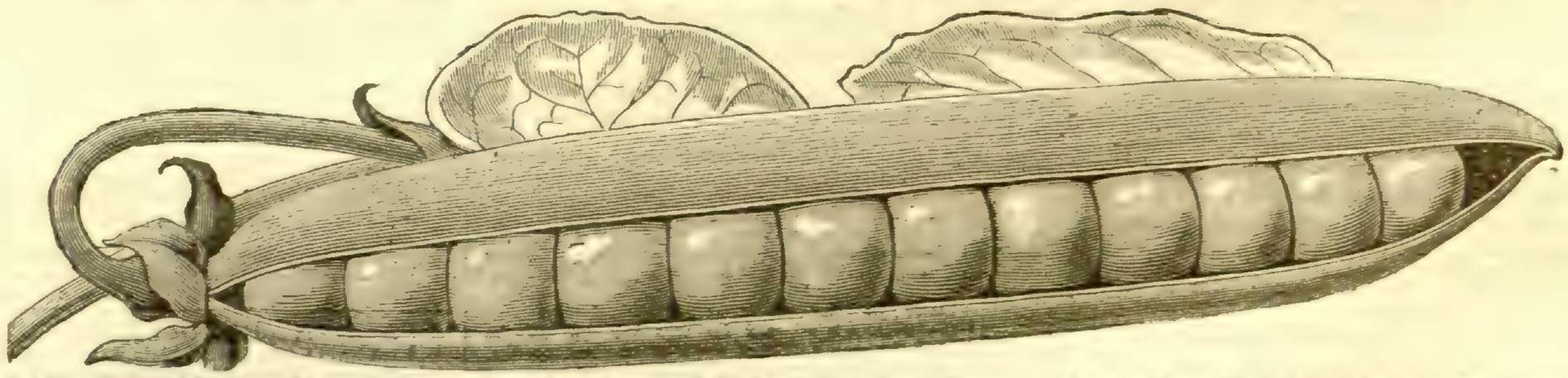

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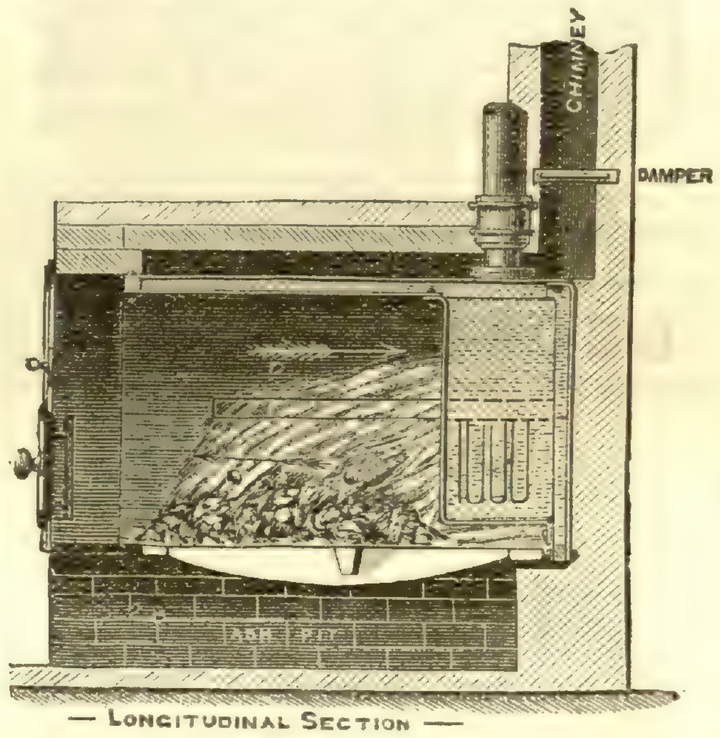
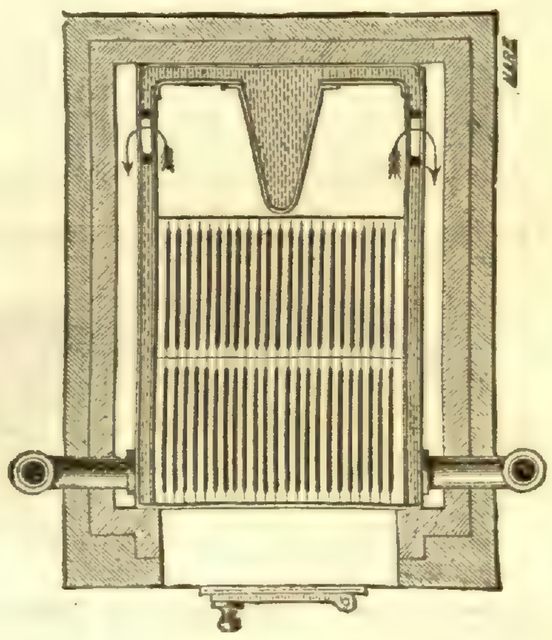


— LONGITUDINAL SECTION —



SECTIONAL PLAN.

The longitudinal section gives a view of the fire-box, water space, flues, &c. The cross section gives a view of the fire-box water space and V-shaped back.
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MB2	4	0	,, by	2	0	,, by	2	0	,,		800	,,	21	0	0
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Borough Engineer's Office, Municipal Buildings, Leeds.
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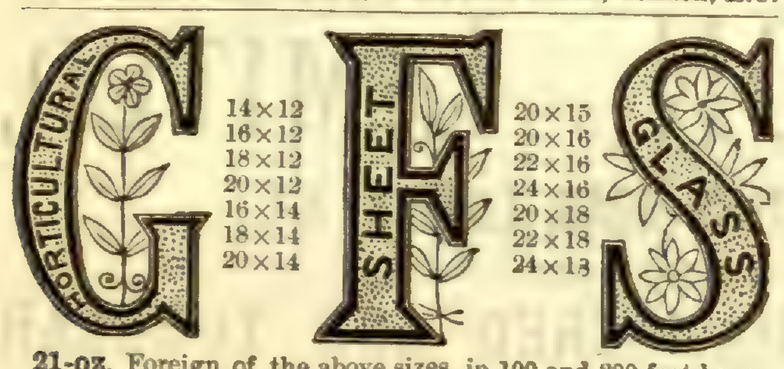

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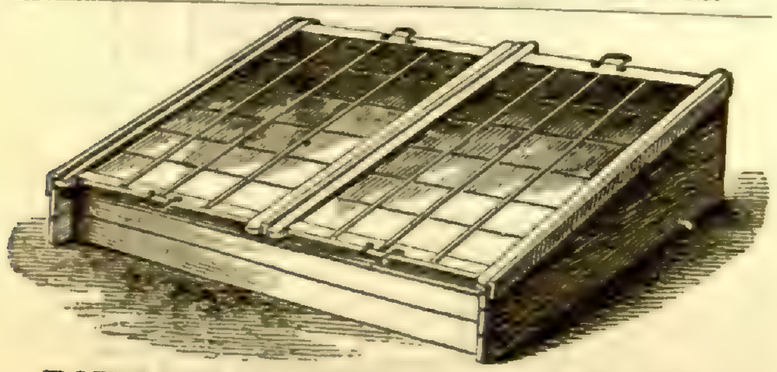

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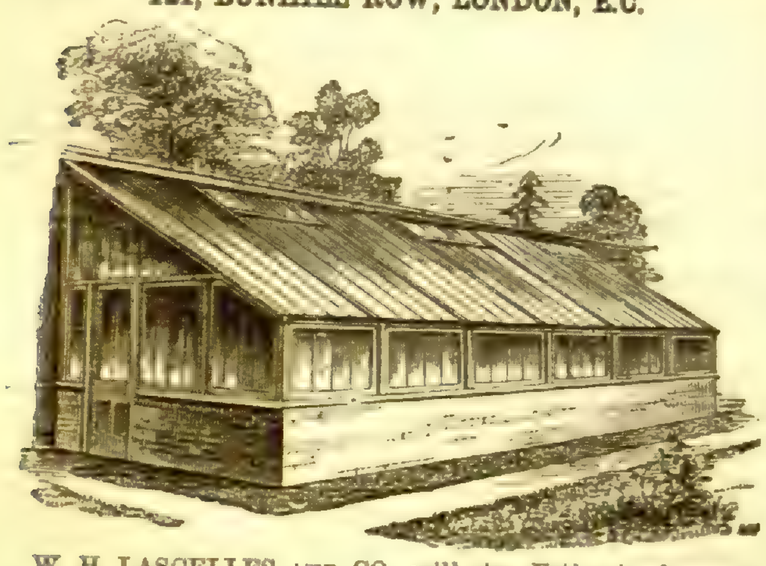

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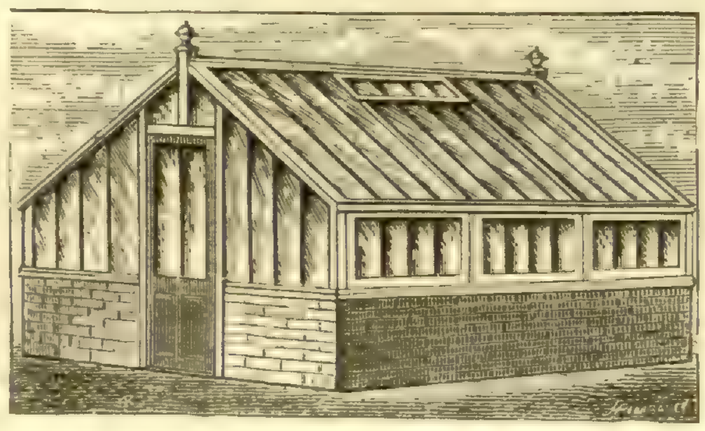

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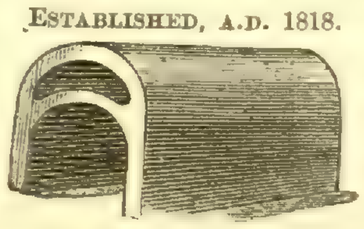

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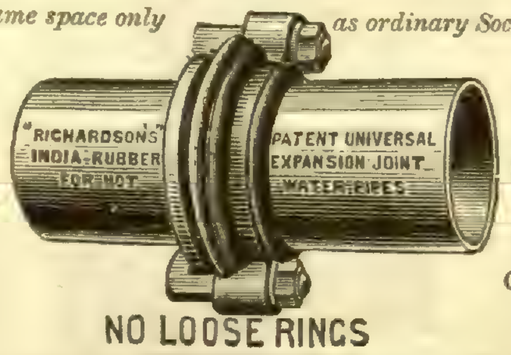

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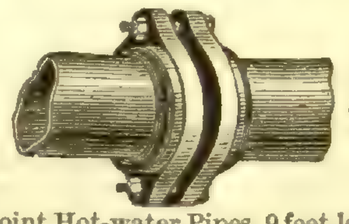

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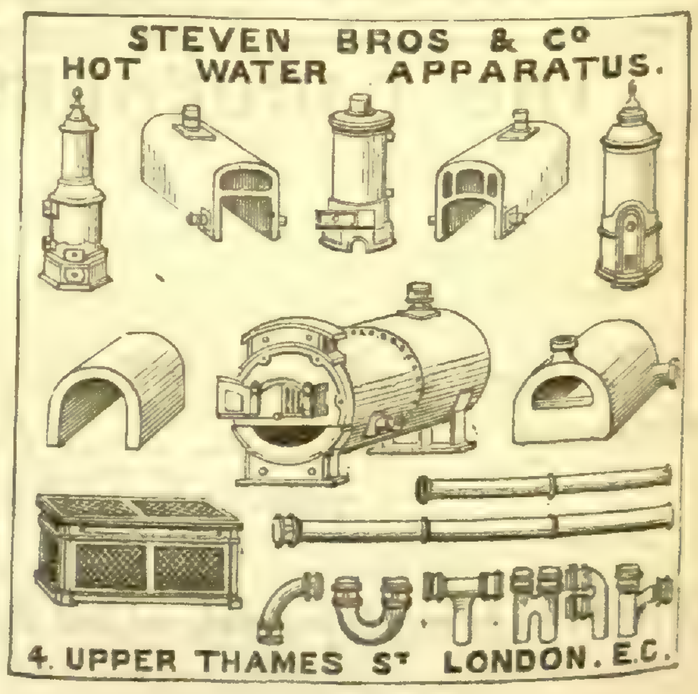

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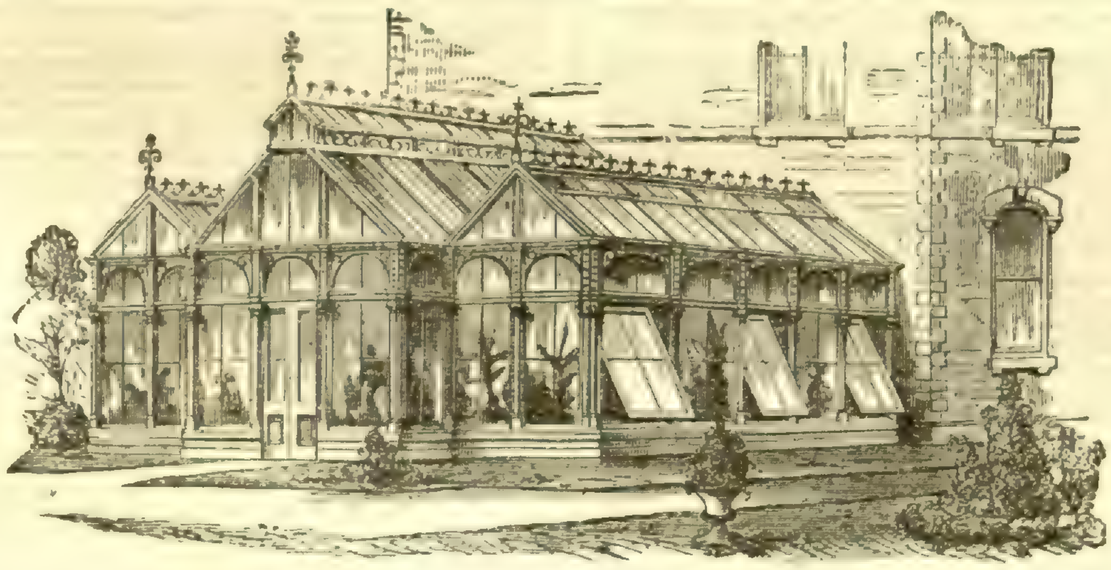

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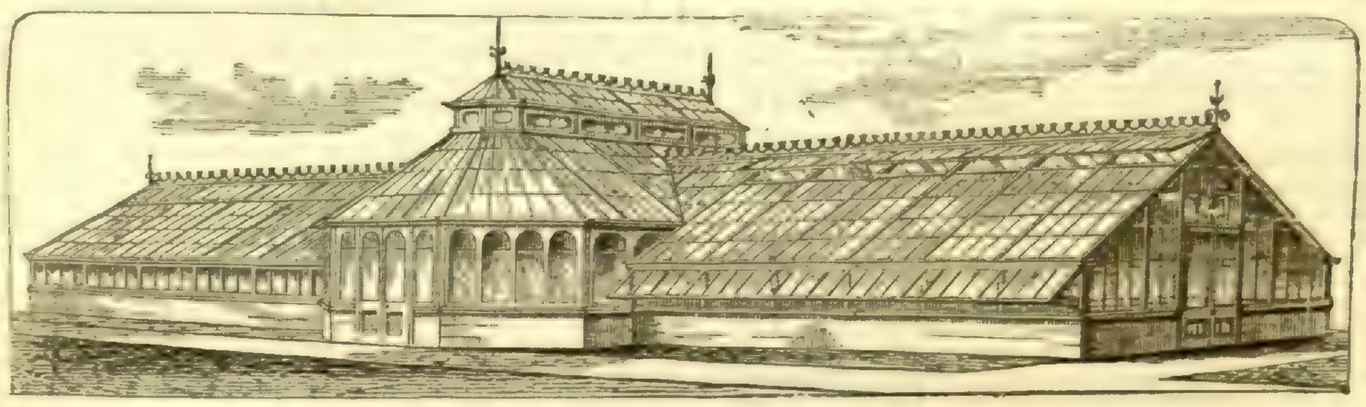

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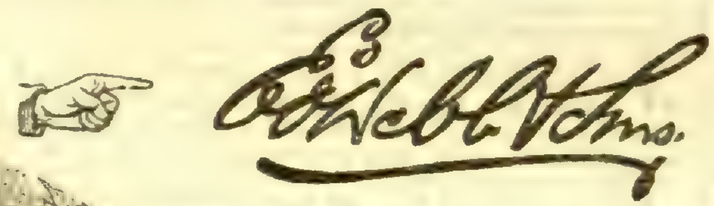

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CONTENTS.

Asters 185
Athyrium, a new ... 185
Bulb disease and artificial manures... 185
Bulb garden, the... ... 184
Camellias 176
Clover and grass crops ... 179
Crocus, species of ... 183
Cupressus Lawsoniana, Young's variety ... 176
Cypripedium amandum . 174
" auroreum × ... 179
Daphne indica rubra ... 185
Footprints, why do they remain on lawns after snow? 185
Gardening appointments 194
Gesnera cinnabarina ... 178
Hardy fruit garden, the . 184
Horticultural Club ... 182
House decoration ... 173
Indian Orchids 178
Jubilee, the 185
Luculia gratissima ... 186
Masdevallia Wendlandiana 174
Moore Memorial, the ... 182
Narcissus cyclamineus ... 184
Natural history drawings 186
Obituary—
West, J. F. M., the late 187
Pear and Apple growing 185
Phaius Sedenianus × ... 174
Plants and their culture . 184
Primroses, purple, white, and yellow 176
Romulea Macowani ... 184
Royal Horticultural Society's Report 180
Scottish Horticultural Association 183
Seed trade, the 179
Societies—
National Chrysanthemum 186
Royal Botanical of Manchester 186
Spathoglottis Regnieri ... 174
Tithes 185
University extension in Scotland 182
Vines and Peaches, manures for ... 186
" product of thirty-one varieties of . 174
Weather, the 187
Willow growing 175
York Gala 182

ILLUSTRATIONS.

Crocus, tunics of various species of 182, 183
Cupressus Lawsoniana, Young's variety 176, 177
Decorations at Birmingham (see Supplement)
Narcissus cyclamineus 185
Romulea Macowani 180
Young's Cypress 176, 177

ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W.

NOTICE!—COMMITTEE MEETINGS: Scientific, at 1 P.M., in the Lindley Library; Fruit and Floral, at 11 A.M., in the East Crush-room, Royal Albert Hall, on TUESDAY NEXT, February 8.

ANNUAL GENERAL MEETING at 3 P.M., which Fellows are earnestly requested to attend, in the East Crush-room, Royal Albert Hall.

N.B.—Entrances, N.E. Orchard House, Exhibition Road; and Exhibitors' Entrance, east side of Royal Albert Hall.

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Every Wednesday and Saturday.

SALES of CAMELLIAS, AZALEAS, PALMS, and other Plants in variety from Belgium, and elsewhere, 500 choice named Standard and Dwarf ROSES, FRUIT TREES, CARNATIONS, PICOTEES, LILIUM AURATUM, a fine collection of English grown and other LILIES, and a great variety of HARDY BULBS and PLANTS.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., EVERY WEDNESDAY and SATURDAY, at half-past 12 o'Clock precisely each day.

On view morning of Sale, and Catalogues had.

Friday Next.

ESTABLISHED ORCHIDS.

MESSRS. PROTHEROE AND MORRIS will include in their SALE on FRIDAY NEXT, February 11, a small collection of ESTABLISHED ORCHIDS, in the best possible condition, many of which are showing flower.

On view morning of Sale, and Catalogues had.

Friday Next.

RARE ANGRÆCUMS.

ANGRÆCUM SCOTTIANUM, SANDERIANUM, and different species.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, February 11, at half-past 12 o'Clock precisely, a specially grand importation of the very rare ANGRÆCUM SCOTTIANUM, in unusually fine masses, and extraordinary health and condition; ANGRÆCUM SANDERIANUM, grand pieces, freely rooting; several new ANGRÆCUMS in fine health; a very beautiful new ONCIDIUM from the Roraima Mountains, which will shortly be named by Professor Reichenbach; two plants of MASDEVALLIA WENDLANDIANA (see last week's *Gardeners' Chronicle*), ODONTOGLOSSUM CIRROSUM, CATTLEYA MOSSIÆ MATUTINA, ANGRÆCUM LEONII, several distinct and fine LYCASTE SKINNERII, DENDROBIUM NOBILE, MASDEVALLIA ROEZLII RUBRA, M. WALLISII, ANGULOA RUCKERI, and many other fine Orchids.

On view morning of Sale, and Catalogues had,

Crawley, Surrey.

Three miles from Three Bridges (Main Line). and two miles from Crawley stations.

THREE DAYS' SALE of WELL GROWN NURSERY STOCK, by order of Messrs. J. Cheal & Sons. Important to those engaged in planting.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, the Lowfield Nurseries, Crawley, on TUESDAY and WEDNESDAY, February 15 and 16, at 12 o'Clock precisely each day, several Acres of valuable well grown NURSERY STOCK in excellent condition for removal, including 1100 choice specimen Conifers, 3 to 12 feet, carefully grown for effective planting; 6000 Laurels of sorts, 1½ to 6 feet; 500 Rhododendrons, 2 to 4 feet; 750 Arbor Vitæ, 3 to 5 feet; 6000 Spruce Firs, 2 to 9 feet; 1250 Scotch Firs, 3 to 4 feet; 2000 fine Standard Trees, 5 to 12 feet; 1500 half Standard and Dwarf Roses; 8500 Fruit Trees, including Standard, Pyramid, and Dwarf-trained Apples, Pears, Plums, Cherries, &c.; 5000 Bush Fruit Trees, and other Stock,

May now be viewed. Catalogues may be had on the Premises, or of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C., and Leytonstone.

N.B. The Auctioneers beg to draw the attention of intending purchasers to the above Stock, which is worthy of inspection.

Hertford.

GREAT UNRESERVED CLEARANCE SALE of the whole of the well grown NURSERY STOCK, standing on the several grounds known as Campbells, Camp Hill, Lloyd's, Fisher's, Sandy Lane, Brandon's, Orchard, Brickfields, New Field, Lower Ground, Camp Hill Cottage, and Dimsey's Garden.

FIVE DAYS' SALE.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Francis Bros., to SELL by AUCTION, without reserve, at the several Nurseries as mentioned above, and all within a few minutes' walk of the Hertford Railway Stations, on MONDAY, February 21 and four following days, at 12 o'Clock punctually each day, the whole of the valuable NURSERY STOCK, comprising:—

50,000 Evergreen, Coniferæ, and Deciduous Shrubs, amongst which are splendid specimen Cupressus and Pinus, of sorts; 5000 Portugal and other Laurels, 1 to 4 feet; 7000 Pinus, Scotch, and Spruce Firs, 2 to 5 feet. 3000 green and variegated Hollies, 1 to 3 feet; 1000 Aucubas; 1000 English Yews.

75,000 Larch, 25,000 dwarf and standard Roses; 100,000 Manetti stocks and cuttings; 30,000 Rose stocks, all in dormant bud, worked with the newest and most approved varieties, and forming altogether one of the finest collections in the trade; 50,000 Ornamental and Forest Trees, including 25,000 Limes, Poplars, Beech, Birch, and Chestnuts; 12,000 Fruit Trees, 10,000 Gooseberries and Currants; some hundreds of Orchard Fruit Trees; 25,000 capital bricks, stack of Hay, &c.

May be viewed any day (Sundays excepted) prior to the sale. Catalogues may be had of Mr. THOMAS, the Foreman at the Nurseries; at the Salisbury Arms and Dimsdale Arms, Hertford; of E. K. FRANCIS, Esq., Solicitor, 4, Great Winchester Street, London, E. C.; and of the Auctioneers, Estate Agents, and Valuers, 67 and 68, Cheapside, London, E.C., and Leytonstone.

Orchids in Flower.—Feb. 22.

MESSRS. PROTHEROE AND MORRIS beg to announce that their next SPECIAL SALE will take place as above, for which they will be glad to receive notice of entries in good time.

Wednesday and Saturday Next.

Consignments of AZALEA INDICA, A. MOLLIS, CAMELLIAS, PALMS, DRACÆNAS, LAURUSTINUS, and other Plants from Ghent; Standard and Dwarf ROSES, FRUIT TREES, SHRUBS, BORDER PLANTS of sorts, LILY OF THE VALLEY, SPIRÆAS, GLADIOLI, &c.

MR. J. C. STEVENS will SELL the above by AUCTION, at his Great Rooms, 38 King Street, Covent Garden, W.C., on WEDNESDAY and SATURDAY NEXT, February 9 and 12, at half-past 12 o'Clock precisely each day.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7344.)

IMMENSE IMPORTATIONS from JAPAN, &c.

15,000 Grand BULBS of LILIUM AURATUM, and a quantity of Lilium species in variety, just received in the finest possible condition.

5000 South African TUBEROSES, &c.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, Feb. 10,

On view morning of Sale, and Catalogues had,

Thursday Next.—(Sale. No 7344.)

VALUABLE ESTABLISHED ORCHIDS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, February 10, at half-past 12 o'Clock precisely, a fine lot of ESTABLISHED ORCHIDS (many in flower and bud), including a spleudid white variety of Lælia anceps, Cypripedium grande (fine plant), C. Godefroyæ (specimen with several growths), C. callosum (several plants, including a grand variety with sixty-four spots on petals), Cœlogyne cristata alba, fine varieties of Cattleya Percivaliana, C. Trianæ alba, distinct forms of Odontoglossum Rossi majus, &c.

On view morning of Sale, and Catalogues had.

Special Sale of Orchids in Flower and Bud.

MR. J. C. STEVENS begs to announce that his next special SALE of ORCHIDS in FLOWER and BUD will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, February 16, and he will be glad if Gentlemen desirous of entering Plants for this Sale will send particulars not later than Thursday next.

Horsham, Sussex.

WITHOUT THE SLIGHTEST RESERVE.

To Nurserymen, Horticulturists, and Others.

MESSRS. KING AND CHASEMORE have received instructions from Messrs. Allman to SELL by AUCTION, without the slightest reserve, upon the Premises, on MONDAY, TUESDAY, WEDNESDAY, THURSDAY, and FRIDAY, February 14, 15, 16, 17, and 18, the whole of the exceedingly valuable and well-grown NURSERY STOCK, standing upon the East Street Nurseries, Compton's Brow Nursery, and Broadbridge Heath Nursery, including a great quantity of Coniferæ, amongst which will be found Araucaria imbricata, Cedrus Deodara, Cryptomeria, Cupressus Lawsoniana, Juniperus, Picea, Pinus austriaca, Retinospora, Thuia aurea, T. gigantea, Thuiopsis, Common Spruce and Larch, &c.; well-grown Hardy Evergreens, including Aucuba, Berberis, Box, Holly, Laurus rotundifolia, Common Laurel, Portugal ditto, Yew, &c.; also a great quantity of Forest Trees and Ornamental Shrubs, including well-grown Limes, Beech, Poplar, Birch, Plane, Sycamore, &c.; a fine collection of Irish and other Ivies, 115,000 Quicks, &c.; about 3000 Rose Trees in choice varieties; well-trained Fruit Trees, amongst which will be found the best descriptions of Peach, Nectarine, Plum, Cherry, Pear, Apple, Gooseberry, Currant, and Raspberries; strong plants of Rhubarb and Asparagus; Herbaceous Plants, &c., comprising Tritoma, Dielytra, Hyacinths, Anemone, Violets, Pæony, common White Lily, &c. The valuable Stove and Greenhouse Plants include well-grown Palms, Dracænas, Lapageria, Bouvardia, Alocasia, Aralia, Beaucarnea, Stephanotis, Hoya, Solanums, Ericas, Coleus, Camellias, Azaleas, Epacris, Cyclamen; Maidenhair, Adiantum, and other choice Ferns; fine Pelargoniums, great variety of Geraniums, Fuchsias, Liliums, Dahlias, and Bedding-out Plants. Also the whole of the various Erections of GLASSHOUSES, including the Greenhouses, Stove-houses, Show-house, and Forcing-pits, together with the whole of the Hot-water Pipes and Furnaces, quantity of corrugated galvanised iron Roofing. A useful Chestnut Cob, Grey Cart Mare, strong four-wheel Van, Scotch Manure Cart, light Spring Cart, Six Sets of Harness, Hand Trucks, Wheelbarrows, Ladders, Flower-pots, Garden Tools and requisites, Carpenter's Bench, Paint Cans, Miscellaneous Items, quantity of Manure and Garden Mould, and Two Ricks of Meadow Hay.

Sale to commence, on Monday, Tuesday, Thursday, and Friday, at half-past 10 A.M., and on Wednesday at 1 o'Clock.

Catalogues may be obtained at the Hotels and Inns in the neighbourhood, and of Messrs. KING AND CHASEMORE, Auctioneers and Valuers, Horsham, Sussex.

ORCHIDS—ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

THE VINEYARD and NURSERIES, GARSTON, NEAR LIVERPOOL,

have to state that they have just received a fine importation of

EAST INDIAN ORCHIDS.

LIST, with full particulars, will be sent post-free on application.

WANTED, TO RENT a few GLASS HOUSES, suitable for Growing Cucumbers, Tomatos, &c. Near a town preferred.—Address WILLIAN, Mr. Dight, Stationer, Hotwells, Bristol.

FOR SALE, a NURSERY.—Five large Glasshouses, each over 100 feet long, Potting-shed, and double-fronted Cottage, only built three years; well stocked, and in full working. 18 years' Lease. Rent, £20 the lot; price, £700: Glasshouses property of purchaser; all well heated. Price includes stock.

Apply to C. COWLES, Woodford Green, Essex. Accommodation if required.

London 30 miles from).

OLD-ESTABLISHED NURSERY BUSINESS, with an extensive connection.

Satisfactory reasons for disposal.

MESSRS. PROTHEROE AND MORRIS are instructed to FIND a PURCHASER for one of the oldest established NURSERY BUSINESSES within a similar distance of London. The incoming would be subject to a valuation, but probable amount about £7000, or a PARTNERSHIP would be entertained.

Full particulars of Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, London, E.C.

FOR SALE, a FLORIST'S BUSINESS, in a good neighbourhood, consisting of 11 Houses, about 650 run, in good condition, all heated by Hot Water; also 2 long Pits. Stock to be taken at valuation. Rent low.

G. A. SAYERS, 11, Rennell Street, Lewisham, S.E.

To Florists and Market Gardeners.

Close to a Station and fifteen minutes from Town.

TO BE SOLD as a going concern, 4 Acres of LAND, well-planted, capital Residence, and 500 feet of glass in six houses, well stocked with Gardenias, Camellias, Stephanotis, &c. Held for a term of 71 years. For 17 years proprietor has carried on a lucrative business, and is relinquishing solely on account of ill-health.

WM. HODSOLL. Estate Agent, &c., Farningham, and 143, Milton Road, Gravesend.

FOR EARLY DISPOSAL, MR. LAING'S NURSERY, Twickenham, owing to the death of Mr. Laing. This long established Nursery, occupied by Mr. Laing for the last fifty years, with Lease, Goodwill, and Stock of Greenhouses, Pits, Shrubs, Plants, and Implements, for Early Sale.

5 Minutes' walk from St. Margaret's;
15 Minutes' walk from Twickenham;
20 Minutes' walk from Richmond;

all stations of the South-Western Railway, close to the new residential neighbourhood of St. Margaret's, and 10 minutes' walk from centres of Richmond and Twickenham towns respectively. As a Home Nursery held with land at Teddington, on Twickenham Common, as done by Mr. Laing, or as a Nursery for a London shop, a Market Grower, or for an energetic man wishing to commence business with a long-established connection, the opportunity is unexceptional.

Apply to GEORGE PAUL, The Old Nurseries, Cheshunt.

Rhyl.

TO BE LET, a GENERAL BUSINESS PREMISES, with two commodious Warehouses attached. Agricultural Seed Business may be added with advantage to any business. Carried on for upwards of thirty years (owner retiring). Good House, with two Sitting Rooms, seven Bed Rooms, and close to the railway station at Rhyl.

Apply to Mr. J. JONES, 50, Kinmel Street, Rhyl.

Fifty Nurseries, Market Gardens, Florist and Seed

BUSINESSES to be DISPOSED OF.

MESSRS. PROTHEROE AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obained, gratis, at 67 and 68, Cheapside, London, E.C.

Important Notice.

To Florists, Seedsmen, Horticultural Builders, &c.

PLANTS, FLOWERS, FRUITS and VEGETABLES a Specialty.

WM. J. WELCH begs to call particular attention to his productions for ILLUSTRATING BOOKS, MAGAZINES, CATALOGUES, and for ADVERTISING PURPOSES.

For Specimens see *Gardeners' Chronicle*, 1883 to 1886.

ADDRESS:—25, Wellington Street, Strand, London, W.C.

Landscape Gardening.

H. F. MALLER (of the firm of B. Maller & Sons), late Pupil of the Crystal Palace School of Landscape Gardening, is prepared to FURNISH PLANS, or undertake any kind of the above work.—61, High Street, Lewisham.

SQUELCH AND BARNHAM, North Row, Covent Garden, London, W.C., REQUIRE any quantity of fine Muscats, for which they can offer good prices, also fine Black Grapes, Tomatos, Cucumbers, choice Flowers, &c.

SQUELCH AND BARNHAM, giving personal attention to all consignments, they are thus enabled to obtain the HIGHEST MARKET PRICE.

SQUELCH AND BARNHAM,

ACCOUNT SALES sent daily, and CHEQUES forwarded weekly.

BANKERS and TRADE REFERENCES.

BASKETS and LABELS supplied.

ELIZABETH COLE, Didsbury, begs to return her sincere thanks to all who kindly VOTED on her behalf at the ELECTION of the ROYAL GARDENERS' BENEVOLENT INSTITUTION.

SMALL SHRUBS and CONIFERÆ:—Cupressus Lawsonii, 12 to 15 inches, transplanted, 80s. per 1000; C. erecta virsdis, 1 to 1½ foot, extra, 12s. per 100; C. stricta, 10 to 12 inches, 12s. per 100; C. gracilis, 10 inches, 12s. per 100; Cedrus Deodara, 2-yr., 50s. per 1000; Thuia Lobbii, 9 to 12 inches, 50s. per 1000; T. Ellwangeriana, 9 to 10 inches, 12s. per 100; Thuiopsis dolobrata, 9 to 10 inches, transplanted, 10s. per 100; Retinospora plumosa, 12 to 15 inches, bushy, 12s. per 100; R. squamosa, 9 inches, transplanted, 10s. per 100; Araucaria imbricata, 8 inches, fine, 40s. per 100; Pinus Cembra, 1-yr., 5s. per 1000; P. excelsa, 2-yr., 1-yr. transplanted, 10s. per 100; P. insignis, 1-yr. transplanted, 6s. per 100; P. Nordmanniana, 1-yr., 25s. per 1000; Abies Douglasii, 6 inches, 6s. per 100; ditto, 9 to 12 inches, 12s. per 100; English Yew, 6 to 9 inches, 8s. per 100; American Arbor-vitæ, 9 to 10 inches, 50s. per 1000; Box, Tree, 9 to 10 inches, 40s. per 1000; Sweet Bay. 9 to 12 inches, 7s. 6d. per 100; Evergreen Oaks, 2-yr., fine, 6s. per 100; Laurustinus, 8 inches, 8s. per 100; Portugal Laurels, transplanted, 6 to 8 inches, 60s. per 1000; Common Laurels, 2-yr., 20s. per 1000.

GARLIES MITCHELL, Nurseryman, Stranraer.

NOVELTIES

WORTH HAVING.

ASTER "QUEEN OF THE MARKET."

ASTER "QUEEN OF THE MARKET."—This variety is a distinct and new race of Asters, blooming fully *a month earlier* than any other; similar in height and shape of flower to the Pæony-flowered section, and suitable either for outdoors or for pots, and comes into bloom *so very early* it will be found indispensable for Market Growers, either for cut bloom or pots.

Red, White, or Blue, separate, each 1*s*. per packet: mixed colours, 1*s*. per packet.

ASTER "WASHINGTON NEEDLE."—A new, very fine variety, of pyramidal growth, with needle-shaped very double flowers of 4 or 5 inches in diameter. This is the largest flowered Needle Aster in existence. A fine exhibition flower.

Light Purple, Peach-blossom, or Rose, each per packet, 1*s*.

DIANTHUS HEDDEWIGI, fl.-pl. "MOURNING CLOAK."—The colour of this magnificent variety is purple to black-purple, with beautiful large double flowers, having a white edge. The grave, striking colour of this new Pink is specially suited for mourning bouquets, wreaths, &c. Per packet, 1*s*.

MINA LOBATA, a magnificent and most attractive climber, 18 feet in height, flowers bright red, changing to orange. Per packet, 1*s*. 6*d*.

RHEUM NOBILE (NEW ORNAMENTAL RHUBARB).—It is thus described by Dr. Hooker:—"The individual plants of Rheum nobile are upwards of a yard high, and form conical towers of the most delicate straw-coloured, shining, semi-transparent, concave, imbricating bracts, the upper of which have pink edges; the large, bright, glossy, shining green radical leaves, with red petioles and nerves, forming a base to the whole." The plant occurs in Sikkim, at an elevation of from 13,000 to 15,000 feet. "I first saw it," remarks Dr. Hooker, "from a distance of fully a mile, dotting the black cliffs of the Lacheen Valley at 14,000 feet elevation, in inaccessible situations." Per packet, 2*s*. 6*d*.

ZINNIA ELEGANS ROBUSTA GRANDIFLORA PLENISSIMA.—A particularly fine new class of Zinnias, differing from the older ones from its unusually robust habit of growth and the immense size (5 to 6 inches across) of its perfectly-formed very double flowers of various striking colours. It forms a handsome Dahlia-like bush of 3 to 3½ feet in height. Eight colours, mixed, per packet, 1*s*.

Prices to the Trade on application.

CATALOGUES of all Varieties of Vegetable and Flower Seeds,
including many good Novelties, Free by Post.

WATKINS & SIMPSON,

Seed and Bulb Merchants,

EXETER STREET, STRAND,

LONDON, W.C.

A NEW CELERY.

WHEELER'S

PINK PERFECTION.

Price 1*s*. 6*d*. *per packet, post-free.*

THE FOLLOWING OPINIONS from some of the most experienced Gardeners in the West of England, are well worthy of attention:—

"The Celery you sent me for trial has turned out excellent. I grew it against two others, and I find it far superior to either—in fact it is the best Celery I have ever grown, being solid, crisp, and of a beautiful flavour."—J. TUTCHER, *The Gardens, King's Weston.*

"After a careful trial of your new Celery I have no hesitation in pronouncing it to be by far the most valuable and distinct variety yet offered—it is solid, heavy, and of delicious nutty flavour."—C. W. COOK, *Rendcombe Park Gardens.*

"I find your new Celery taller than 'Major Clarke's.' It is robust, compact, and very crisp. The flavour is most excellent; I consider it a most desirable variety."—THOS. SHINGLES, Tortworth Court Gardens.

WHEELER'S LIST OF SPECIALTIES AND NOVELTIES,

WHICH MAY BE HAD

Gratis and Post-free on application.

J. C. WHEELER & SON,

SEED GROWERS, GLOUCESTER.

STOP GAPS IN OLD FENCES.

An Opportunity! Surplus Stock of

AYRSHIRE AND SEMPERVIRENS ROSES.

IMMENSELY STRONG PLANTS. MIXED SORTS.

3s per dozen; 10s. 6d. per fifty; 18s. per hundred.

THESE ROSES, as is well known, grow with great vigour, even in poor soils; and as they are armed with formidable thorns they are extremely well adapted for filling up gaps in fences, while for a month or six weeks in the summer time nothing can surpass them in beauty.

EWING & CO., Havant, Hampshire.

B. S. WILLIAMS'

Improved Mushroom Spawn,

Per bushel of 14 cakes, 5*s*.
Per cake, 6*d*.; per cake, free by Parcel Post, 1*s*.
For Outdoor and Indoor Culture.

Victoria and Paradise Nurseries,

Upper Holloway, London, N.

PRIZE COB and other NUT TREES.

Gentlemen desirous of obtaining the true

WEBB'S PRIZE COB FILBERT TREES,

AS ALSO THE

Kentish Cob and other Nut Trees,

should send their Orders as early as convenient to

Mr. COOPER, F.R.H.S., Calcot Gardens, Reading

of whom alone the various sorts can be obtained.

PRICE LISTS and PAMPHLETS on application.

THE BEST EXHIBITION CUCUMBER.

CARTERS' MODEL

The Long and Handsome variety that takes the

LEADING PRIZES.

Per Packet,
2s. 6d. & 3s. 6d., post-free.

Seedsmen by Royal Warrants to H.M. the Queen, and H.R.H. the Prince of Wales,

237 and 238, HIGH HOLBORN,
LONDON.

VEITCH'S

CHOICE FLOWER SEEDS.

JAS. VEITCH & SONS,

ROYAL EXOTIC NURSERY, CHELSEA,

LONDON, S.W.

PAPAVER NUDICAULE

(ICELAND POPPY).

Extremely floriferous, elegant and graceful, of most brilliant and beautiful colours, lasts a long time in bloom, and in a cut state is simply unsurpassed.

P. NUDICAULE, beautiful clear yellow, per packet, 6*d*.
" " ALBUM, pure white, very chaste, per packet, 1*s*.
" " MINIATUM, brilliant orange-scarlet, per packet, 1*s*

SUNFLOWER, NEW MINIATURE.

Exceedingly free flowering, producing an abundance of small, elegant, bright golden-yellow single flowers, with a dark centre; very decorative, and highly useful for cutting.

Per Packet, 1*s*.

BEGONIA, CHOICEST HYBRID.

Carefully hybridised, and saved from our celebrated collection.

Per Packet, 1*s*. 6*d*.

CAMPANULA CALYCANTHEMA ROSEA.

A new bright rose-pink variety; a most attractive and desirable addition to our hardy border plants.

Per Packet, 1*s*. 6*d*.

GLOXINIA, VEITCH'S SUPERB STRAIN.

Saved from the magnificent collection grown at our Chelsea Nursery.

Per Packet, 2*s*. 6*d*.

IMPATIENS SULTANI.

First-class Certificates, Royal Horticultural and Botanic Societies,

Remarkable for its profuse and continuous flowering, and the gorgeousness of its flowers, which are of a brilliant rosy-scarlet colour.

Per Packet, 1*s*. 6*d*.

MIGNONETTE, CRIMSON KING.

A new, distinct, and most desirable variety for pot culture throwing up numerous stout flower-stalks, terminated by extremely broad spikes of delightfully scented bright red flowers.

Per Packet, 1*s*.

PETUNIA, VEITCH'S SUPERB STRIPED.

Selected for many years with great care; very constant, and produces beautifully striped flowers.

Per Packet, 1*s*.

☞ *For full descriptions of the above and other Choice Flower Seeds, see CATALOGUE for* 1887, *forwarded Gratis and Post-free on application.*

ROYAL EXOTIC NURSERY,

CHELSEA, LONDON, S.W.

STRAWBERRIES—STRAWBERRIES.—Sir Joseph Paxton, 100,000 well rooted Runners to dispose of. Marshal MacMahon, several thousands. For price, &c., stating quantity required, to
JAMES GUYTON, Station Road Nursery, Belton, Great Yarmouth.

ASPARAGUS, grand Roots for Forcing, 2*s.* per dozen, 12*s.* 6*d.* per 100; strong, for planting, 2*s.* 6*d.* per 100. SEAKALE, forcing, 2*s.* 6*d.* per dozen, 16*s.* per 100; planting, 2*s.* per dozen, 12*s.* 6*d.* per 100.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

ROBERT NEAL begs to call the attention of Gentlemen, Builders, and others who intend planting this season, to his stock of FRUIT, FOREST, and ORNAMENTAL TREES, SHRUBS, ROSES, &c., which are in fine condition for removal, and comprise especially those kinds which are most suitable for Town Planting. Free delivery in own vans within a distance of six miles.
CATALOGUES on application.
The Nurseries, Trinity Road, Wandsworth Common, S.W.

CHRYSANTHEMUMS, 550 varieties, true to name, strong Cuttings; buyers' selection, 1*s.* 6*d.* per dozen, 10*s.* per 100; Plants, 2*s.* 6*d.* per dozen, 16*s.* per 100. For price of new sorts see CATALOGUE. Many of the largest growers are supplied, and many of the best prizes in the county have been taken from plants and cuttings supplied by me. Catalogue, two stamps, of
WM. ETHERINGTON, Chrysanthemum Grower, Swanscombe, Kent.

FRUIT TREES.—Standard two-year and Maiden PLUMS, Standard two-year and Farleigh DAMSONS, Dwarf-trained PEACHES, APRICOTS, and Morello CHERRIES, &c. One-year Seedling CRAB, 3*s.* 1000. Price on application to
FLETCHER BROS., The Nurseries, Ottershaw, Chertsey, Surrey.

Vertegans' Startling and Delicious Fruits.
BLACKBERRIES (Black, Golden, Pink, and White); Grape Fruit, Siberian Apricot, Blue Currant, &c. Illustrated CATALOGUE free on application.
Chad Valley Nurseries, Birmingham.

Vertegans' Startling and Useful Novelties in
SEEDS, FRUITS, and FLOWERS; Golden RADISH, CUCUMBER-MELON, MELON-PEAR, Tree TOMATO, and Bush TOMATO. Illustrated CATALOGUE of about 60 pages, free to all.
Chad Valley Nurseries, Birmingham.

Gardening Made Easy and Economical by Perusing
VERTEGANS' ILLUSTRATED CATALOGUE of Selected Seeds—specially arranged to meet these times. Gratis and post-free to all.
Chad Valley Nurseries, Birmingham.

HOW TO SUCCEED WITH SEEDS.—"Nothing succeeds like success" is an old saying which applies, perhaps, more to the seed trade than any other. The reason is not far to seek. If you find the seeds of a firm succeed, you naturally advise your friends and neighbours, who rejoice with you over so desirable a discovery, and send in their orders accordingly. The greatest care is taken by the firm of Viccars Collyer & Co., Leicester, that all Seeds, Vegetables, Flowers, &c., &c., should be NEW, which is one of the reasons that they have so rapidly achieved a position in the country; and if you wish to succeed with seeds you should order from them. Send for their Spring Catalogue for the Jubilee Year, 64 pages of closely-printed matter, gratis and post-free. In reply to numerous enquiries as to planting Wilson Junior Blackberry this spring, any time between now and April will be suitable. They have a good stock of strong plants at their Nurseries, and are now executing orders at 7*s.* per dozen, carriage paid. For Specialties in Raspberries, and the New Melon Pear, see their Catalogue. Address,
VICCARS COLLYER AND CO., Central Hall, Leicester.

ECONOMY and EXHIBITION.
ABUNDANCE PEA: height 2 feet (9*d.* per pint, carriage paid). When harvesting I have counted over eighty pods on a single plant of Abundance.
DUKE of ALBANY PEA, for Exhibition (1*s.* per pint, carriage paid).
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One plant of each of the above, post-free for 6*s.*
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LIMES, best red-twigged variety, 12 to 14 feet, and 14 to 16 feet.
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Very cheap by the dozen or hundred.
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SCOTCH FIR, very fine stuff, from 1 to 2½ feet, 12*s*. to 25*s*. per 1000.

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BLENHEIM ORANGE.
AGAIN AWARDED
FIRST PRIZE,
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PRICE, IN SEALED PACKETS,
1*s.* 6*d.*, 2*s.* 6*d.*, *and* 3*s.* 6*d.*
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ISAAC MATTHEWS AND SON have for Sale 500,000 RHODODENDRONS, varying in size from 4 to 6 inches up to 2 to 3 feet—Cunningham's White, Jacksoni, caucasicum, pictum, Seedling Hybrids, Hybrid ponticum, and named varieties; good bushy plants. HOLLIES, CONIFERS, FOREST TREES in large quantities; AUCUBAS, YEWS, and other Nursery Stock. CATALOGUES now ready, and may be had, gratis and post-free, on application to the Nurseries, Milton, Stoke-on-Trent.
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CHRYSANTHEMUMS.—New Descriptive CATALOGUE of all the New and Choice Varieties considered worth cultivation, with Cultural Directions. 750 varieties in stock. Post-free 3*d.*
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Finest Quality, Extra Cheap.
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The set of Eleven Varieties, carriage free, 16*s.* 6*d.*
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SHRUBS and CONIFERÆ.—Laurustinus, 2 feet, bushy, 32*s.* per 100. Arbutus Unedo, 2 feet, 40*s.* per 100. Aucuba japonica, 2 to 2½ feet, 40*s.* per 100. Box, Tree, sorts, 1½ to 2 feet, 30*s.* per 100. Common Laurels, 2 feet, 12*s.* per 100. Colchic Laurels, 2 to 2½ feet, 16*s.* per 100. Grislienia littoralis, 2 feet, 35*s.* per 100. Sweet Bay, 1½ to 2 feet, 30*s.* per 100. Rhododendron ponticum, 1½ to 2 feet, 30*s.* per 100; ditto, 2 to 2½ feet, 40*s.* per 100, extra fine. Abies Douglasii, 2 to 3 feet, 30*s.* per 100; ditto, 3 to 4 feet, 40*s.* per 100; ditto, 4 to 5 feet, 70*s.* per 100, fine roots and well furnished. Araucaria imbricata, 2 to 2½ feet, 42*s.* per dozen; ditto, 3 to 3½ feet, 60*s.* per dozen. Cupressus Lawsonii, 1½ to 2 feet, 16*s.* per 100; ditto, 2 to 2½ feet, 20*s.* per 100; ditto, 3 to 4 feet, 50*s.* per 100. Cupressus erecta viridis, 1½ to 2 feet, 30*s.* per 100; ditto, 2 to 2½ feet, 40*s.* per 100. Retinospora plumosa, 1½ to 2 feet, 30*s.* per 100; ditto, 2 to 2½ feet, 40*s.* per 100, extra. Picea Nordmanniana, 2 feet, 40*s.* per 100. Thuia Lobbii, 2 to 2½ feet, 25*s.* per 100. Special offer by the 1000 for smaller sizes. GARLIES MITCHELL, Nurseryman, Stranraer.

GREAT SACRIFICE to Clear Land.—Strong Standard and Pyramid-bearing Fruit Trees of best sorts, and fine Evergreen Ornamental Trees and Shrubs, Extra Transplanted, &c. Large Discount off usual prices for Cash. See LIST. Also FOREST TREES in quantity.—Apply,
T. L. MAYOS, Highfield Nurseries, Hereford.

CLEARANCE SALE of Healthy PALMS for Table and Conservatory Decoration.—LATANIA BORBONICA, SEAFORTHIA ELEGANS, PHŒNIX RECLINATA, and PHŒNIX TENUIS, 12 inches high, 6*d.* each, 4*s.* per dozen, 25*s.* per 100; same kinds, 20 inches high, 1*s.* 6*d.* each, 6 for 8*s.*, 12 for 14*s.* Package and delivery free.
COCOS WEDDELLIANA, KENTIAS, ARECA LUTESCENS, and EUTERPE EDULIS, 2*s.* to 5*s.* each. Large PALMS, 3 feet to 6 feet high, 5*s.* to 50*s.* each, all of splendid value.
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SEED CATALOGUE for 1887.—Just published, with everything priced, containing many NOVELTIES of sterling merit, both in Vegetable and Flower Seeds. Post free on application to
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CARNATIONS, perpetual blooming.
PRIDE of PENSHURST.—By far the best pure yellow. Fine plants, 8*s.* and 12*s.* per dozen.
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Our other best kinds, our selection, 9*s.* per dozen.
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HOLLYHOCKS, best named sorts, 12*s.* to 42*s.* per dozen. Seed from show varieties, 3*s.* 6*d.* and 5*s.* per packet.
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SEED POTATOS.—One of the largest stocks and variety in the Trade. Before buying elsewhere send for my Descriptive CATALOGUE, sixteen pages, containing description of about 160 varieties; also Lists of the most suitable varieties for Exhibition, Garden or Field Culture, and several New Seedlings of great merit. Free for three stamps, Gratis to customers.
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2,000,000 CABBAGE PLANTS, best Market and Cattle varieties. Also CAULIFLOWERS, LETTUCE, Tripoli ONIONS, BRUSSELS SPROUTS, Savoy and Red Pickling CABBAGE. Write for LIST, and state what quantity required; will give low quotations.
EDWARD LEIGH, Ivy House Farm, Cranleigh, Surrey.

THORN QUICK.
2-yr. transplanted, very strong, from 2 to 5 feet, not sorted, 10*s.* per 1000.
Sorted, very strong, 15*s.* per 1000.
Apply,
N. LAWRENCE AND SON, Nurserymen, Chatteris, Cambs.

YES; YOU MAY SAFELY PLANT WILSON JUNIOR BLACKBERRY, or any sort of Raspberries, between now and April. A correspondent writing to Messrs. Viccars Collyer & Co., Leicester, asks for advice, as his Blackberries had grown 20 feet long. This should not have been permitted, as, if they had been cut down to three feet, all that strength would have gone into lateral. Viccars Collyer & Co. have a good stock of 2-yr. old plants at their Nurseries, which they are now sending out at 7*s.* per doz., carriage paid.
Address, VICCARS COLLYER AND CO., Central Hall, Leicester.

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(formerly J. Linden), Director LUCIEN LINDEN,

G H E N T, B E L G I U M.

The C. C. D'H. begs to offer the following Grand New Orchids :—

CATASETUM BUNGEROTHII, A. E. Brown.

See full illustrations in *Gardeners' Chronicle*, Saturday, January 29, 1887; and in *Journal of Horticulture*, Thursday, December 23, 1886.

OPINIONS OF THE PRESS.

"Quite a sensation was caused at Mr. Stevens' Sale Rooms last Thursday, when the Compagnie Continentale d'Horticulture of Ghent sent three plants of a new Catasetum of a very remarkable character. . . . . All the Catasetums are interesting structurally, but C. Bungerothii is far the best we have yet seen from a cultivator's point of view."—*Journal of Horticulture*, December 23, 1886, pp. 562, 563, and 564.

"A GRAND NEW ORCHID.—One of the finest new Orchids that have appeared in London for a long time was sold at Stevens' Rooms on Thursday last. . . . . It is named Catasetum Bungerothii, and is, without doubt, the finest of the genus. Three plants were sold; the largest fetched 50 guineas. . . ."—*The Garden*, December 18, 1886, p. 575.

"This is one of the most remarkable Orchids of recent introduction. . . . We may confidently expect it to become one of the finest specimen Orchids at future exhibitions."—*The Gardeners' Chronicle*, December 18, 1886.

"The appearance of this Orchid in a flowering state at Stevens' Rooms on December 16 last caused a flutter among the Orchidists. . . . . The plant forms one of the gems of Mr. Tautz's very choice collection. . . . ." *Gardeners' Chronicle*, January 29, 1887, pp. 139 and 140.

Price on application.

CYPRIPEDIUM PRÆSTANS, Rchb. f.

See *Gardeners' Chronicle*, December 18, 1886, p. 776. Professor Reichenbach says:—"A most unexpected surprise! I have before me a living plant, a fine peduncle bearing five flowers and buds. The flowers surpass all those of the above-named species (Parishi, lævigatum, Robbelenii, glanduligerum), and are nearly as large as those of Cypripedium grande. This one is quite distinct."

Price 63s., 105s., and 168s.

ODONTOGLOSSUM LUCIANIANUM, Rchb. f.

See *Lindenia*, No. 5, vol. ii.; and *Gardeners' Chronicle*, December 4, 1886, p. 712. Professor Reichenbach says:—"This is a very fine new Odontoglossum . . . . It may be a hybrid between Odontoglossum nævium and O. odoratum . . . . Column more slender than in O. nævium and plumper than in O. odoratum, white, with some brown markings under the stigmatic hollow, and a few red lines outside, near the interior angles. Wings very narrow, linear aristate . . ."

Price on application.

The following New and Fine ORCHIDS, also introduced in 1886, by the C. C. d'H., are disposable :—

AGANISIA TRICOLOR, ANGULOA MEDIA, ANSELLIA CONGOENSIS, DENDROBIUM PERCNANTHUM, D. INAUDITUM, D. PURPUREUM, D. STRATIOTES, D. STREBLOCERAS, D. BRACTEOSUM, EPIDENDRUM RANDIANUM, CYPRIPEDIUM KIMBALLIANUM, GRAMMATOPHYLLUM FENZLIANUM, MICROSTYLLIS BELLA, SPATHOGLOTTIS ANGUSTORUM, THRIXSPERMUM INDUSIATUM, and VANDA LINDENI. Full particulars and prices on application.

N.B.—The Nurseries of the COMPAGNIE CONTINENTALE D'HORTICULTURE will be shortly removed to Brussels, and still more especially devoted to the introduction of ORCHIDS and NEW PLANTS.

☞ **All Orders and Letters to be addressed to Ghent till future information.**

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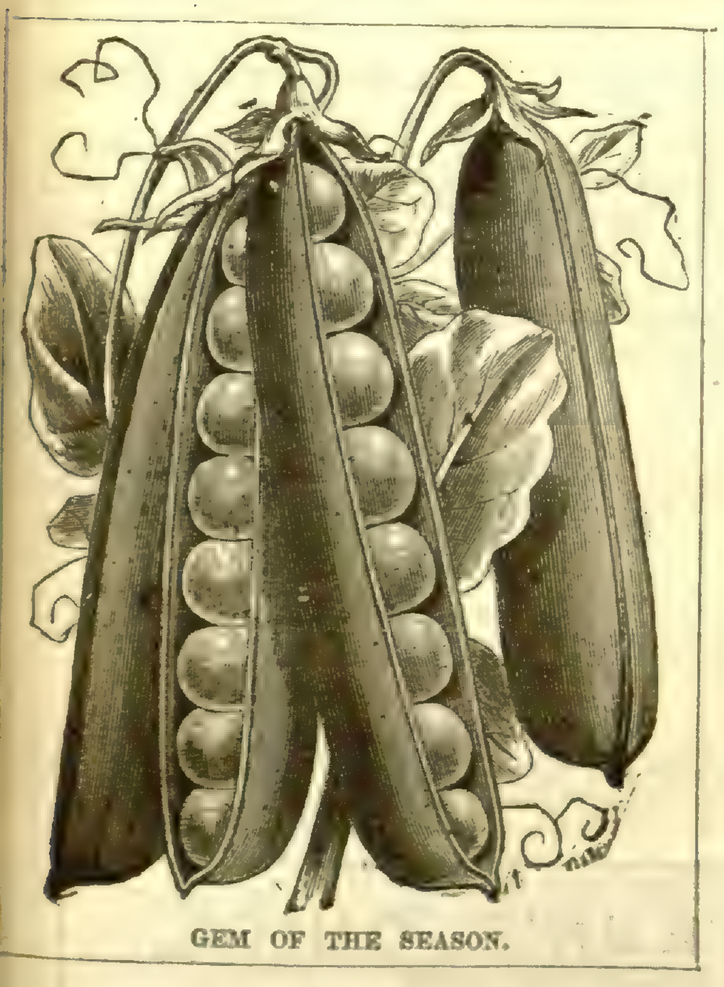
THE FOUR BEST PEAS TO CULTIVATE.

Each sort 2s. 6d. per Quart, Carriage Free.



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DANIELS' GEM OF THE SEASON.

Is always the earliest, whether sown in Autumn, Winter, or Spring.

From **Mr. J. Catton**, Saxlingham Hall, Sept. 21.

"Your **Gem of the Season Pea** is the best I ever grew, being sixteen days earlier than any other sort."

DANIELS' MIDSUMMER MARROW.

The earliest Blue Wrinkled Pea in cultivation. It should be found in every garden.

From **Mr. S. H. Green**, Lutterworth.

"I am well pleased with your **Midsummer Marrow Pea.** It is a Pea that ought to be grown in all gardens."

DANIELS' MAIN CROP MARROW

Is a most abundant bearer, of the same rich marrow flavour as the old Ne Plus Ultra, but the pods are longer. It should be largely grown as a main crop Pea.

From **Mrs. Stacey**, Holly House, Beccles.

"I wish to acknowledge my appreciation of the valuable results from your Seeds in general, both Flower and Vegetable, especially your **Main Crop Marrow Pea**, which has been all that could be desired."

DANIELS' MATCHLESS MARROW.

For use late in the season this Pea is unequalled, and cannot fail to become a leading kind for market purposes, possessing as it does all the good qualities of Veitch's Perfection and Ne Plus Ultra combined.

From **Mr. T. H. Dalton**, Swavesey Manor.

"Your **Matchless Marrow** is certainly the perfection of all Peas."

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KENT & BRYDON'S NEW PEA,

"XL ALL,"

The Best Main Cropping Variety in Cultivation.

THIS valuable new variety is a large Wrinkled Marrow, vigorous in growth and habit, attains a height of 4 feet, and, what is of the greatest importance, is not subject to mildew. It is a main crop Pea, but is also adapted for late sowing, and its cropping powers are enormous. The pods are produced in pairs, which entirely cover the haulm from top to bottom, each pod containing eight to nine large Peas, which, when cooked, retain their beautiful dark-green colour; the flavour is most delicious, and in this respect it has not a rival. Such superior quality combined with productiveness, render "XL ALL" an acquisition of the greatest merit.

Price, 2s. 6d. per Sealed Half-pint Packet.

POST-FREE.

For Testimonials and other CHOICE NOVELTIES see Descriptive SEED GUIDE, free on application.

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LONDON AGENTS:—

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OR

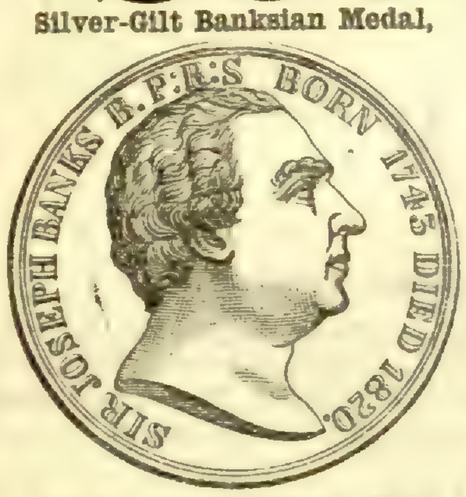
KENT & BRYDON,

SEED MERCHANTS AND NURSERYMEN,

DARLINGTON.

SUTTON'S PRIZE TOMATOS.

Silver-Gilt Banksian Medal,



R.H.S., Oct. 12 and 13, 1886.

SPECIAL AWARD to SUTTON & SONS for a COLLECTION of TOMATOS
(grown and ripened in the open air in the summer of 1886 *at their Experimental Grounds, and exhibited at South Kensington on October* 12-13*), viz.:—*
THE ROYAL HORTICULTURAL SOCIETY'S SILVER-GILT BANKSIAN MEDAL, being the Highest Commendation yet awarded for this popular fruit.

SUTTON'S EARLIEST OF ALL TOMATO.
"Your Earliest of All Tomato was sown the beginning of March, planted in the open the end of May, and was ready for use the second week in August. I consider it a great acquisition, both as regards productiveness and for being very early." Mr. JOHN ARGENT, Gardener to Major Fanning, Swanley.
Per Packet, **1s. 6d.** Post Free.

SUTTON'S MAIN CROP TOMATO.
"TOMATO, SUTTON'S MAIN CROP.—This variety, with very strong greyish-green foliage, is an immense cropper out-of-doors. The fruits are almost smooth and globular in shape, of great solidity, and a rich scarlet colour. It ripens readily in the open quarter." M., *Gardeners' Chronicle*, August 14, 1886.
Per Packet, **1s. 6d.** Post Free.

SUTTON'S READING PERFECTION TOMATO.
"Sutton's Reading Perfection Tomato is the best that has come under my notice. It was awarded First Prize at the Royal Horticultural Society, Aberdeen, in July, and First and Second Prizes in September. The First Prize lot (six fruits) were very handsome, and weighed 13 oz. each." Mr. GEO. DONALDSON, Gardener to the Right Hon. the Earl of Kintore.
Per Packet, **1s. 6d.** Post Free.

SUTTON'S ABUNDANCE TOMATO.
"Sutton's Abundance has surprised me by its vigour and productiveness. The plant would top a wall of 8 or 9 feet, and give fruit at every joint. I quite expect that with good management under glass it would bear almost indefinitely. As regards quality it is excellent." W. H. SMITH, Somersham, *Gardeners' Mayazine*, November 6, 1886.
Per Packet. **1s. 6d.** Post Free.

SUTTON'S CHISWICK RED TOMATO.
"Chiswick Red is one of the best in the world for winter culture, for it needs less heat than the larger sorts, and with a little care will supply fresh ripe fruit all the winter long. They are not only the best for salads, but also for sauce." *Gardeners' Magazine*, October 11.
Per Packet, **1s. 6d.** Post Free.

SUTTON'S READING PERFECTION TOMATO.
Per packet, **1s. 6d.**, post-free.

SUTTON'S PRIZE STRAINS OF FLORISTS' FLOWERS.

Silver-Gilt Banksian Medal,

R.H.S., Jan. 11, 1887.

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The R.H.S. Silver-gilt Banksian Medal, Jan. 11, 1887.
Six First-class Certificates, R.H.S., Jan. 11, 1887.
Silver Banksian Medal, Jan. 14, 1879.
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"Your strain of Gloxinias has taken First Prize at Hailsham again and Second Prize at Hastings. I have some of the largest flowers that ever I have seen." Mr. E. GREGORY, Gardener to Admiral Maxse, Eastbourne.
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SUTTON'S SUPERB CINERARIA.
"The Cineraria seed you supplied me with last season is the finest I ever had, and I have been a grower for thirty-five years. Some of the plants measure 34 inches over the foliage, and 27 inches over the head of flowers. They have been much admired." Mr. H. ELLIS, Gardener to A. Crewdson, Esq., Springfield.
Per Packet, **5s. & 2s. 6d.** Post Free.

SUTTON'S PRIZE BEGONIA.
"The Begonias were very much admired. I had nearly two dozen plants from a packet, and all good colours, from deep scarlet to pure white." Mr, W. TICKNER, Gardener to D. M. Taylor, Esq., Banstead.
Per Packet, **5s. & 2s. 6d.** Post Free.

SUTTON'S PERFECTION CALCEOLARIA.
"From a packet of your Calceolaria seed I got 120 plants. They averaged 1 foot in height, and from 15 to 18 inches through, with a splendid lot of fine healthy leaves and not two alike in colour." Mr. J. B. PAYNE, Gardener to the Right Rev. the Lord Bishop of Bath and Wells.
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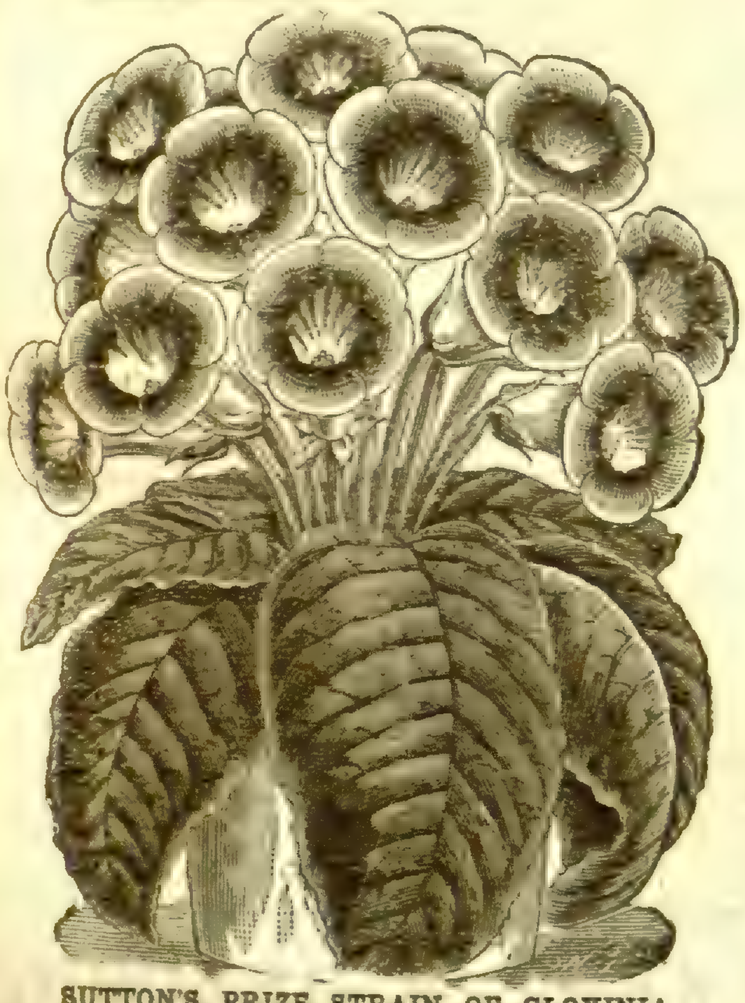
SUTTON'S PRIZE CYCLAMEN.
"The Cyclamen grown from seed supplied by you were very good this year; in several instances I had over forty blooms at the same time on one corm. In two or three instances over sixty perfect blooms besides buds." J. E. BULL, Esq., Cittadella, Cork.
Per Packet, **3s. 6d. & 1s. 6d.** Post Free.



SUTTON'S PRIZE STRAIN OF GLOXINIA.
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The Largest and most complete Seed Catalogue issued.
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To Her Majesty the Queen, and H.R.H the Prince of Wales.

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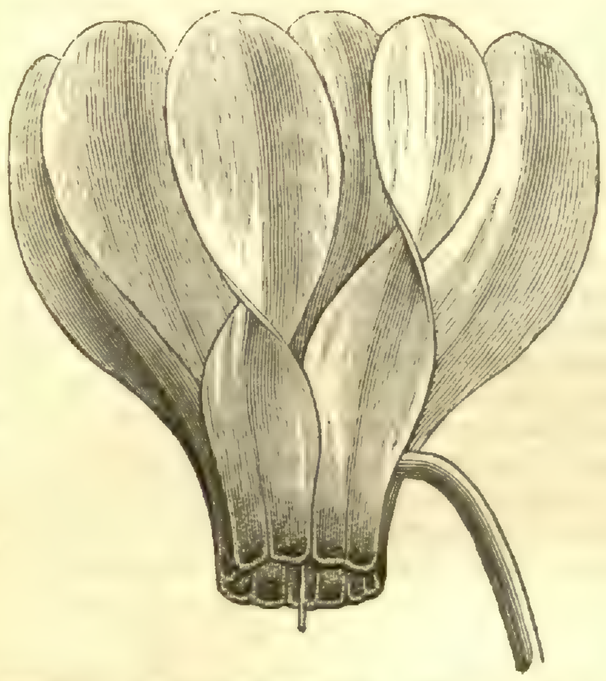

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The finest strain in cultivation.

Red, 2s. 6d. per packet; White, 2s. 6d. per packet; Mixed, 1s. 6d. per packet.

From Mr. WM. RICHARDS, Holly Cottage.
"Out of the packet of Cyclamen Seeds (30 in number) I have raised 25 healthy young plants."

WEBBS' NEW PRIMULAS.

These are the most beautiful colours ever offered.

Webbs' Modesty	2s. 6d. and 5s.	per packet
Webbs' Purity	2s. 6d. and 5s.	,,
Webbs' Rosy Morn... ...	2s. 6d. and 5s.	,,
Webbs' Scarlet Emperor...	2s. 6d. and 5s.	,,
Webbs' Exquisite (Mixed)	1s. 6d. and 2s. 6d.	,,

From Mr. W. W. CRUMP, Gardener to the Right. Hon. the Earl Beauchamp.
"Webbs' New Primula 'Modesty' is a real gem, most floriferous, of good habit, and chaste in colour, as its appropriate name suggests."

	s.	d.	
Webbs' Superb Calceolaria ...	2	6	per packet
Webbs' Superb Cineraria	2	6	,,
Webbs' Double Cineraria	5	0	,,
Webbs' Excelsior Gloxinia... ...	2	6	,,
Webbs' Single Dahlia	2	6	,,
Webbs' Show Pansy	2	6	,,
Webbs' Fancy Pansy	2	6	,,
Webbs' New Hybrid Primrose ...	2	6	,,
Webbs' Bluebeard Lobelia... ...	1	0	,,
Webbs' Defiance Auricula	2	6	,,

☞ *All Seeds Free by Post or Rail.*

See **WEBBS' SPRING CATALOGUE.**

Post-free, 1s. Abridged Edition Gratis and Post-free.

E. W. Webb & Sons.

WORDSLEY, STOURBRIDGE.

B.S.WILLIAMS'

PRIZE STRAINS OF

FLORISTS' FLOWERS

POST FREE.

Sold only in Sealed Packets bearing my Trade Mark. The quality of all is alike, the difference in price applies to the quantity of seed put in the packets.

	Per packet—s.	d.
Cockscomb, Williams' Prize	2	6

Calceolaria, Williams' Superb Strain, 1s. 6d., 2s. 6d., 3s. 6d., &	5	0
Calceolaria, Shrubby	2	6

TESTIMONIAL.

From Miss CURREY, *Lismore Castle, Ireland.*
"The Calceolarias from your seed have given the greatest possible satisfaction at Lismore Castle for some years past. This year they are quite magnificent. The size of the blooms and trusses are quite wonderful. I sent some specimens this afternoon to Vicountesse Doneraile, who had heard of them and begged to see them."

Cineraria, Williams' Extra Choice Strain, 1s. 6d., 2s. 6d., 3s. 6d., &	5	0
Cineraria, French, Large-flowering	2	6
Cineraria alba	2	6

TESTIMONIAL.

From Mr. BIRCH, *The Gardens, Castle Ashby.*
"My Cinerarias, grown from your strain of Seed, are the admiration of every visitor and resident. They are really marvellous. I have about 320 plants in bloom, some of the individual flowers measure 3 inches in diameter. The foliage I cannot compare but to Rhubarb leaves."

Pentstemon, Choice Mixed	1	0
Petunia, Striped	1	6

ILLUSTRATED SEED CATALOGUE for 1887 will be forwarded, Gratis and Post-free, on application.

VICTORIA & PARADISE NURSERIES, UPPER HOLLOWAY, LONDON, N.

As a Supplement to the "GARDENERS' CHRONICLE" for next week, Feb. 12, will be published an Ink-Photograph of PALMS in BRITISH GUIANA (Maximiliana Regia).

THE

Gardeners' Chronicle.

SATURDAY, FEBRUARY 5, 1887.

HOUSE DECORATION.

THE decoration of houses and public buildings on special occasions with flowers and ornamental plants has attained large dimensions in recent times. But it does not everywhere run in the same groove, for while in so large a place as Manchester the work is mainly in the hands of the fruiterers, it is elsewhere the business of the nurserymen. Those who were present at the meeting of the British Association in Birmingham last year cannot fail to remember Mr. Hans Niemand's successful grouping of foliage and flowering plants in the reception room, prepared for them at the Industrial Exhibition, Bingley Hall (see supplementary sheet), as well as at the Council House for the Mayor's *soirée*, where alone over 2000 plants were used.

So far as space will permit we will name some of the specimens that meet the eye in passing through Mr. Niemand's houses wherein the plants used on these occasions are grown. Ferns and Palms are of course prominent, both as large specimens which have graced many a festive occasion in Birmingham, going into hospital sometimes at the nurseries, as the result of dissipation; and in small sizes for dropping into Japanese vases and ornamental pots, and so putting on full dress when invited out to a party. A popular Fern in society here is Pteris serrulata cristata major, which is regarded with such favour in connection with the decorative department that a permanent stock of many hundred specimens is maintained, all of them derived from a plant grown by Mr. Barron, of the Chiswick Gardens, where this Pteris was raised. Pteris tremula is a favourite, on account of the value of its large fronds; and as hard cutting is lowering to the constitution, and young plants produce more fronds than older ones, the stocks are renewed every spring. Cyperaceæ (Papyrus family) are largely grown for decoration, with the moisture that suits them.

An ingenious use is made of the American Smilax, Myrsiphyllum asparagoides, a slender

twiner, throwing long shoots, which are supported by strings. When required for use the shoots are cut away and the strings removed, so that the graceful green sprays with Myrtle-shaped leaves may be twined around epergnes or vases. The effect of this at night is lovely. Isolepis gracilis is here in any quantity, and if our notes had been arranged with botanical propriety, it should have been named before with Cyperaceæ. Its weeping habit and consequent use as drapery for the front of groups and stages are well known.

Next comes a house of Fan and other Palms—Latania borbonica, Cocos plumosa, C. Weddelliana, Kentia Belmoreana, Areca lutescens, and others, some of them fine large specimen plants, but they are here of every size. The two kinds of the Date Palm which are here esteemed the best are Phœnix reclinata and P. rupicola. There are hundreds of Palms which have all been out to festivals together during the past and previous years, and some of them many times. The white Roses in one of the Palm-houses have not been out of heat for six years. R. Niphetos, planted out, had blossomed nine months in the year, pruned as occasion required. A fine specimen of Elæodendron (Aralia) Chabrieri, 5 feet high, feathered nearly to the pot, stands at the entrance.

After walking through a couple of houses of Chrysanthemums we came upon an example of plant-improvement effected here in a variety of Poinsettia pulcherrima, beautifully variegated with creamy-white, and with the broad, short bracts of superba. It has become a fixed variety, and we may fairly say it deserves its name of Poinsettia pulcherrima superba variegata, both this variety and its parent, P. superba, being the earliest blooming of their race. We pass next through a house devoted to Tree Carnations, double Primulas grown chiefly for bouquet work, and some flowering hybrid Rhododendrons, which began to blossom before December. Amateurs who are not experts may like to know that the orange-scarlet Duchess of Edinburgh, the crimson Duchess of Connaught, and the Princess Royal, are amongst the most highly esteemed here; and we mention such matters, trite as some may find them, on the principle that free note-taking is best in such an establishment as this where experience is so ripe, and the sorts and culture of the various plants are so well understood.

In a house for forcing flowers there were, on November 17, in and coming into bloom, Lilies of the Valley, Roman Hyacinths, Spiræas, white Lilac, Azaleas, and many other early flowering plants, such as the trade in cut flowers requires. Twenty dozen blossoms of White Azaleas had been cut on the day before our visit. A plant of that good old Camellia, Alba plena, standing on a raised border at the entrance to a Camellia-house deserved a salute as a noble veteran and a great producer of flowers. It experienced a removal of several feet last spring, and did not suffer from it a bit, having produced, from September 28 to November 17, 350 flowers, and there were many thousand buds on the shrub, some of which were opening every day. The height of this profitable Camellia is 10 feet, the diameter 14 feet, and the surface for flower-bearing is as great as it could possibly be, the shape being globose. Lady Hume's blush, with its white blossom, tinted with soft rose, is also very much valued here.

Of Pelargoniums we will say that the double zonal kinds are used for cutting till the middle of December, and the single flowering sorts follow for the remainder of the winter. Eureka is esteemed as the best white so far as free flowering is concerned. The keen eyes employed here in the decorative line have selected the Indian Strawberry (Fragaria indica) with yellow blossoms as a good plant for trailing and twining. Most Strawberries are well provided for trailing, and the Indian Strawberry owns special gifts in that respect, bestowed perhaps in compensation for worthless fruit. We now overtake, in a stove, one of the handsomest and least known of decorative plants—Alpinia albo lineata. The roof of one department of a stove is covered with Dipladenia boliviensis, which blossoms eight months in the year, while Stephanotis is in blossom during six months. A valuable Fern, Onychium auratum, must be named, being scarce, and is here in fine form. Selaginella africana should be named for its great absorbent power, which those may test who have not done so by some specimens when dried up apparently come to life again by throwing them into water of the same temperature as the house.

In a propagating house, full of old favourites, we noticed Dracæna Willsi, D. terminalis alba, a quantity of climbing Asparagus, Croton Mortfontainensis, one of the handsomest of a handsome race, richly coloured; C. Morti, with large massive leaves—highly coloured; C. Hawkeri, and C. Weismanni. Here we must stop, but not for want of more material.

We may add that Mr. William Spinks, formerly the horticultural manager of the Aston Lower Grounds, is the general manager of this establishment, and will be remembered by many, as one of the old Chiswick students. *E.*

PLANTS NEW OR NOTEWORTHY.

PHAIUS × SEDENIANUS, *Rchb. f., Hort. Veitch.*

A lovely hybrid, the fourth member of the × irroratus group. It has to bear Mr. Seden's name, who crossed Phaius Tankervilliæ and Calanthe Veitchii. I have to thank for it Mr. Harry Veitch. The peduncle is very strong, phajoid, having been laden with thirteen flowers, one-third smaller than those of Phaius Tankervilliæ. Sepals and petals lanceolate, sepals rather broad, milk-white, washed with sulphur inside. Lip large and fine, broad, three-lobed, lateral lobes broad, rhomboid, mid lobe short, square, emarginate, blunt angled. All borders broadly light purple, disc sulphur-coloured, with three parallel keels. Spur curved, surpassing half length of stalked ovary. *H. G. Rchb. f.*

Masdevallia Wendlandiana, *n. sp.**

A lovely gem, imported from New Granada, or if you prefer it the United States, Columbia, by Mr. F. Sander, where it is just in rich flower during the shortest days. You may safely compare it to Masdevallia tubulosa, Lindl., and minuta, Lindl. It forms dense masses of spatulate minutely bilobed leaves, which are surpassed by the slender peduncles, even longer than 3 inches, and bearing a single lovely tubular flower two-thirds of an inch in length. The tails are equal to the free triangular bodies. The chin is a very short one. Colour snow-white, with two or three mauve lines outside, under the place of the lip. Petals white. Lip white, with an orange area before the apex, and very numerous very small point-like dark purple spots. Column white, with three longitudinal mauve stripes, one on back, one on each angle. It is dedicated to Herr Oberhofgärtner Herrmann Wendland at the especial request of Mr. Sander. It is well known that Herr Wendland, the enthusiastic grower and grand *connoisseur* of Palms, has taken the Orchids into his greatest favour, and has understood how to form an exceedingly fine collection partly by his unrivalled sagacity in finding out where something extra good lurks unexpected. This grand collection is grown under rational principles, so that nearly all plants do admirably well. It was quite refreshing to me to see the other day the greatest majority, kept in the greatest rest. What breaks may then be expected to come! *H. G. Rchb. f.*

* *Masdevallia Wendlandiana*, n. sp.—Aff. M. tubulosæ, Lindl., ac minutæ, Lindl.; dense cæspitosa; foliis petiolatis oblongo spatulatis angustis, pollicem excedentibus, vix ultra duas lineas latis; pedunculo subduplo longiori monanth tubo arcto; sepalis triangulis liberis abbreviatis in caudas æquilonga s extensis; mento parvo; sepalis semihastatis ligulatis; apiculatis; carinula laterali una; labello ligulato; laciniis lateralibus in discum laciniæ anticæ oblongæ minutissime crenulatæ egredientibus; columna trigona appendicula dorsali tridentata. Ex Nov. Gran., imp. ex c. Sander.

Cypripedium amandum ×, *nov. hyb. Angl., exc. ab exc. Bowring.*

Mr. W. Bull has sent me kindly full materials of this. It was raised from Cypripedium insigne and venustum, by Mr. T. C. Bowring, Forest Farm, Windsor Forest. Thus it should be our Crossianum, a fine thing I know particularly well, we having a fine mass of it at the Hamburgh Botanic Garden; it is most remarkably distinct.

To begin with, the strap-shaped leaves are far longer and narrower, 1¼ foot by 1½ inch, and with a most sharp keel in the midline of the back, bidentate and a little serrate (!) at the top, dark green with very numerous blackish-mauve freckles at the base of the posterior side, those freckles standing on the sides of the keel up to the point of leaf, now ascending up much higher on the blade, as I see in one of the leaves. The flower is more slender than that of Cypripedium Crossianum; upper sepal oblong acute, rather narrow, chiefly green, with rows of small dark sepia-black spots, white at the top and at the outside margins; inferior sepal oblong acute, green; petals descendent, ligulate, blunt acute, ochre coloured in the middle, with brick-red paint on both sides, yet much more of it on the side against the upper sepal; lip rather slender, with curved horns at each side of mouth, light yellow, brown around the mouth; staminode reniform, with a small apiculus, yellow, with a few green nerves in the middle of the brac', much shorter than the ovary, with numerous blackish-mauve like spots; peduncles reddish-brown, hairy. I think it is a very nice plant. *H. G. Rchb. f.*

Spathoglottis Regnieri, *n. sp.**

This is very near Spathoglottis Lobbi, Rchb. f. It differs in its much broader leaves. The peduncle has far shorter hairs, and the one at hand is only two flowered. The flowers are smaller. The stalked ovaries are shorter. The side partitions of the lip are shorter and broader. The callus stands more backwards, and there are no ciliæ on the basilar anguli of the long stalk. The flowers are light yellow. The callus is white with brown spots, but no stripes on the lateral sepals. It was discovered in Cochin China by M. Regnier, 44, Avenue Marigny, Fontenay sous Bois, Seine. *H. G. Rchb. f.*

* *Spathoglottis Regnieri.*—Valde aff. Spathoglottidi Lobbi: foliis quadruplo latioribus; pedunculo brevius piloso bifloro (an semper?); floribus minoribus; labelli partitionibus lateralibus brevioribus, callo bilobo majus retrorso inter partitiones laterales; angulis unguis basilaribus eciliatis. Cochin China. det. exc. Regnier. *H. G. Rchb. f.*

PRODUCT OF THIRTY-ONE DIFFERENT VARIETIES OF VINES.

Professor G. W. Hilgard, in a report under date November 26, 1886, says, the experimental vineyard plot at Cupartino, California, placed at the disposal of the University by Mr. John T. Doyle, two years ago, has this season borne its first available crop.

In 1886 all the Vines were pruned long, three canes, and trained on stakes, so as to insure an adequate crop for experimental wine making. This point, says the Professor, must be taken into consideration in judging of the result, since short pruning varieties would thus actually over-bear, and show a heavier crop than that with which they could be permanently charged, without greatly shortening their lives.

The following table shows, in the last column, the average product in pounds of the Vines sampled, the number from which this average is deduced being given in the first column, while the middle one gives the total product of all:—

Product of Vines in University Experimental Plot at Cupertino, Santa Clara Co.

Variety.	No. of Vines.	Total Weight of Grapes.	Average for each Vine.
		Lb.	Lb.
Black Hamburgh	40	1050	26·2
Nebbiolo	20	650	32·5
Fresa	7	200	28·5
Franken Riesling	20	686	34·3
Gros Blanc	20	685	34·2
Crabb's Black Burgundy ...	20	404	20·2
Chauche Grise	20	853	42·6
Gemay Teinturier	20	596	29·8
Malbeck	20	253	12·6
Portal's Ploussard (Malbeck) ...	20	247	12·3
Meanier	20	510	25·5
Sauergnon Vert	20	1037	51·8
Folle Blanche	20	765	38.2
Johannisbergen Riesling ...	20	309	15·4
Herbermont	20	658	32·9
West's White Prolific	33	1953	59·1
West's St. Peter's (?)	20	345	17·2
Cabernet Franc	20	425	21·2
Teinturier	20	440	22·0
Sirah	14	430	30·7
Kleinbergen	20	1000	50·0
Ploussard (proper)	20	881	44·0
Chasselas de Fontainebleau ...	20	1412	70·6
Semillon	20	750	37·5
Barbarossa	13	991	76·0
Gros Verdot	7	555	79·2
Palomino (Golden Chasselas) ...	28	1605	57·3
Zinfandel	18	1145	63.6
Burger	32	1884	58.8
Sultana	7	487	72·4
Chanthe Noir	7	457	65·3

These results show that the highest product of the list is that of the Gros Verdot, which gives nearly 80 lb. of Grapes to the Vine. It is said that the sugar percentages in the Grapes have generally been low this season.

The soil upon which these Vines grow is a drab-tinted clay loam, largely intermixed with gravel and rock fragments, rich in potash; showing the whole to consist of the wash from the adjacent and other ranges lying toward New Almader.

Fruits Under Glass.

FIGS.

These, in order to secure fruit of the largest dimensions, should have liberal supplies of tepid liquid manure given them at the roots, and if the latter are confined to a rather limited space, these waterings should be frequent as well as liberal. Syringe the trees and damp down the house morning and afternoon to promote a growing atmosphere, as well as to keep the foliage free from the attacks of red-spider. Pinch the points out of the shoots at four or five joints beyond the fruits. Maintain a night temperature of from 55° to 60°, 65° to 70° by day, with fire, and 80° with sun-heat. Prepare successional houses for starting next week with a night temperature of 50° to 55°, 60° to 65° by day with fire-heat, with a rise of 10° by sun-heat. Thin the shoots out to 6 inches apart, leaving young, well-placed shoots, which are well furnished with young fruit, in preference to old ones.

Melons.

These, if the seeds were sown as advised at p. 22 of the present volume, will now have made two or three rough leaves, and so soon as the roots have approached the side of the pots those intended for training to the trellis in the Melon-house should be shifted into 6-inch pots and be plunged again in a bottom-heat of about 80°, and be kept near the glass, previously putting a small stick to each plant for support, while those plants which are intended for planting in hot-water pits or frames placed on hotbeds, made as indicated at p. 78, for training over the surface of the beds can be planted out as soon as the soil has become of the same temperature as the pits or frames. The soil the Melon delights in is a good turfy loam which has been cut and stacked the previous summer, but should the loam at hand be of a stiff, adhesive, and poor nature, one-fourth of old mortar-rubble and horse-droppings should be added and well mixed with it before forming the hillocks—one in the centre of each light about 10 inches deep, 18 inches long, and 12 inches wide; at the same time covering the intervening and surrounding space with 2 inches thick of the same compost, which will absorb and retain the ammonia arising from the fermenting manure underneath. The plants should be turned carefully out of the pots while moist at the roots, and, in the case of the hotbeds here referred to, be planted two plants on each mound (about 9 inches from one another longitudinally), making the soil moderately firm about the roots in planting. A clear space of 10 or 12 inches from the surface of the hillock and the glass should be left, so that the foliage of the plants may not ultimately come in contact with the glass, *H. W. Ward, Longford Castle.*

WILLOW GROWING.

(*Concluded from p. 144.*)

After-Management of the Crop.—In the case of a Willow crop, few things, after careful preparation of the ground and timely planting, contribute more to the setting up of a good crop of rods than keeping the ground in a sweet, healthy state by removal of all weeds two or three times at least during each season. Hoeing is preferable to any other system of cleaning, but it may occasionally be found necessary, particularly where Bindweeds or other running-rooted plants are in the soil, to have recourse to the more tedious but surer method of hand weeding. We have noticed on various occasions the marked difference between the yield of Osiers on clean, well-managed ground, and such as is allowed, under the false pretence of saving expense, to become matted with weeds. Not only is the yield better under a proper system of management, but the rods individually are cleaner, straighter, and in every way better adapted for the use of the basket-maker.

The crop of Willows may be cut immediately after the fall of the leaf in autumn, tied in bundles, and put standing with the thick ends in water of 2 or 3 inches deep; that is, if not disposed of and carted away at the time of cutting. In cutting the rods, sever them from the root-stem as close as can conveniently be done, for much injury is not unfrequently entailed on the succeeding crop by allowing the decaying wood to remain intact. A good standard is to cut the rods back to within three-quarters of an inch of the old wood, as by so doing, just sufficient eyes or buds are left for producing the crop of the following season; and it is always preferable and more profitable to have a few long and strong rods, than a number of short, thin, and weak ones. After cutting the crop, and before the stools start fully into growth in spring, it may be well, and will save considerable time and trouble hereafter, to have the ground thoroughly cleaned by hoeing and raking the accumulations of weeds and other surface rubbish that is consequent on the ingathering of the crop: another advantage, apart from cutting over the weeds in a young state, is that by making an early start at cleaning, less damage to the young and tender shoots of the Willow is likely to be inflicted, than when the work is deferred till later in the season.

Profits of Willow Culture.

That Willow culture was at one time, and that not a quarter of a century ago, a profitable occupation is beyond doubt, but like corn and Wheat the profits of this crop have of late years greatly diminished, this being wholly due to the cheap rate at which foreign rods can be sent into our English markets. It may seem somewhat surprising, but it is nevertheless a fact that France and other Continental nations can deliver their Osiers in the London market at a cheaper rate than growers of the same commodity can from some of the midland English counties; and owing entirely to this state of matters many of our largest and most successful cultivators have given up the trade in disgust. As will be shown hereafter, it is now almost an impossibility to make over £5 per acre from Osier culture, even though it be carried out economically and on the most approved principles, whereas not a dozen years since nearly double the amount named was considered as about a fair average of the prices realised.

The following figures are not the results of a single experiment, but that of no less than three, carried out in various parts of the country, and by those practically acquainted with the work; so that they may be relied upon as forming a good basis, approximately, of the expenses and profits in connection with the cultivation of Osiers for basket-making:—

Cost of Forming Osier bed per Acre.

Preparation of ground, including draining, ploughing, and weeding	£11	0	0
25,000 sets, at 12*s.* per 1000	15	0	0
Planting sets at 3*s.* per 1000	3	15	0
	£29	15	0

Yearly Expenses.

Interest of money invested at 5 per cent. ...	£1	10	0
Rent of ground...	0	12	0
Repairing fences, and making up gaps in Osier bed	1	0	0
Weeding, &c.	1	10	0
Cutting the rods	1	8	0
	£6	0	0

Yearly Value of Crop.

180 bundles of rods at 1*s.* 2*d.*	£10	10	0
Expenses	6	0	0
Nett profit	£4	10	0

Of course it must be borne in mind that as prices of labour vary considerably in different districts, so, in proportion, will vary the cost of forming and managing an Osier bed. I have known, in the North of Ireland, where labour is cheap, Osier beds formed for nearly one half the above-named cost; but it is likewise well to remember that the formation of these beds, as well, indeed, as the subsequent management, was only second rate as compared to our best English systems, and the profits derived from them proportionately small.

The above produce of an acre of ground may seem small, and it may be well to state that in addition to the 180 bundles mentioned there are usually several loads of small and inferior stuff for which, in certain localities, a ready market may be found at a merely nominal rate; but in most parts of the country this refuse, as it is usually called, is hardly worth the trouble of loading and delivering to a much greater distance than 4 or 5 miles from where the rods are produced.

Willow culture is, therefore, even under the most advantageous circumstances, a speculation not to be entered into largely at present, and, as will be seen from the following letter, written but a short time ago by one of our largest Willow growers, Mr. Scaling, of Basford, Notts, has been gradually on the decline in this country for some time:—"I am sorry to say that since my report to the Highland and Agricultural Society was written, Osier cultivation has cease to pay, from the same causes that Wheat growing has ceased to pay, viz., foreign imports, aided by railway preferential rates, which enables any French, Belgian, or Dutch grower to deliver his produce into the large inland towns of England at a lower rate per ton than a grower can from the centre of the railway system; indeed, I would not, under the disadvantages we are placed, advise any one to plant Osiers." *A. D. Webster.*

PURPLE, WHITE, AND YELLOW PRIMROSES.

The plant in cultivation under the wrong name of Primula altaica is, without doubt, merely a colour variety of the common Primrose, and it is interesting to know that it came originally from the Asiatic shores of the Bosphorus.

I have never seen a yellow Primrose in Asia Minor, and I think it is not generally known that Primroses there are mostly either pure white or mauve. The Primrose is very abundant about halfway up Mount Olympus above Broussa, but is mainly mauve in colour; here and there a pure white variety occurs, but none of the yellow type.

The mauve form is Primula acaulis, β rosea of Boissier, and he mentions its occurrence in the Crimea, near Constantinople, the neighbourhood of Broussa, in Pontus, Lazistan, Transcircassia and Russian Armenia. He also includes the white form under his var. β, which is Primula acaulis iberica, Hoffm., and P. Sibthorpii, Rchb.

The mauve and the white forms occur rarely and sparingly in Europe, with here and there an isolated individual mixed with the type. The mauve form is very abundant on the railway embankment immediately to the north of the Amiens railway station; but this is in the midst of the city, and may be an escape from cultivation. I noticed in Istria a tendency to vary to white, but there the white-flowered plants were intermixed with the typical yellow form.

This passage in flower-colouring from west to east is very curious, and in the case of the Primrose it would be interesting to ascertain whether it is gradual or sudden, and where the yellow type ends and the mauve and white forms commence to replace it. I have noticed a somewhat similar passage of colour from west to east in more than one species of Crocus. *George Maw, F.L.S., Benthall, Kenley, Surrey.*

YOUNG'S CYPRESS.

The variation from seed in Lawson's Cypress (Cupressus Lawsoniana) is carried to a very remarkable extent. Compare, for instance, the intertexta variety with Waterer's erecta viridis. These are two forms known to have originated from the same species, but which are more unlike one another than many so-called species. Many species, moreover, have been separated one from another on slighter grounds than that by which the form now figured as Young's Cypress is separated from the Lawson Cypress. Nevertheless we cannot doubt that Young's Cypress, as we propose to call it, is only a form of the species Lawsoniana. Were we to speak of it as Cupressus Youngi we might mislead the reader into supposing that it was a distinct species, but by calling it Young's Cypress we predicate nothing as to its botanical status.

In any case for garden purposes this Cypress is very distinct, in its elongated pyramidal habit, and its loosely arranged ascending branches, which are more or less concave and twisted, like the blades of a screw-propeller. The colour is a dark apple-green, and the leading shoot turns, now to this side, now to that, in process of growth. The size of the individual leaves is also larger than that of most other varieties of this protean species. Altogether, it is very distinct and handsome, and as it is perfectly hardy it may with confidence be recommended as a valuable ornamental shrub. Our illustrations (figs. 40, 41) were taken from some plants in the nursery of Mr. Maurice Young, of Milford Nurseries, Godalming, by whom the plant is to be sent out. The cones are like those of the Lawson Cypress.

Royal Microscopical Society.—The annual meeting of the Society will be held on Wednesday, February 9, at 8 o'clock precisely, when the presidential address will be delivered by Rev. Dr. Dallings, F.R.S., on "Recent Optical Improvements in the Microscope, and the Operation of the Darwinian Law amongst the Minutest Organisms."

CULTURAL MEMORANDA.

ECHEVERIA RETUSA.

This is a very useful free-flowering winter plant, the bright orange pitcher-shaped flowers contrast effectively with the bluish-grey fleshy leaves. The plants will be benefited by having an occasional application of diluted liquid manure at the roots during their growing and flowering periods, but the soil should always be allowed to get moderately dry before giving water, otherwise the roots are liable to perish. The plant is easily increased by inserting the offsets, singly, in 3-inch pots filled with a mixture of three parts light loam and one of leaf-mould, with a surfacing of sand, in spring, and then placing them on the staging over the pipes in a vinery or Peach-house.

Fig. 40.—Young's Cypress: tip of extension shoot, real size.

Carnations.

Now that the ground is liberated from the firm grip of King Frost, an examination of the plantations of Carnations, Pinks, &c., which were made last autumn, will show that the majority of the plants require the soil being made firm about their collars. *H. W. W.*

Dracænas.

If the stems of a few old plants of Dracænas of the varieties grown be cut into short pieces, and have a little of the wood sliced off one side the individual pieces, and then be placed flatwise in pans filled with sandy soil, covered with a little of the same kind of mould and a piece of glass, and then placed over the hot-water pipes, or plunged to the rims in a hotbed, they will soon root and push into growth. They should then be potted off singly in 3-inch pots in a compost consisting of sandy loam and peat, and be put near the glass in the stove, or in any warm place where they can be damped overhead morning and afternoon, and kept moist at the roots. Thus treated they will make nice useful plants by the end of next autumn.

Genista.

There are several varieties of this popular greenhouse plant, the most useful being Cytisus racemosus. Plants of it which were put into a warm house a few weeks since will now be unfolding their racemes of agreeably-scented yellow flowers. Cuttings of the young growth inserted in 3-inch pots in sandy soil, and placed in heat, and subsequently potted off singly, and in due time shifted into 6-inch pots in a compost consisting of three parts good loam and one of leaf-mould and coarse sand, will make nice plants for embellishing the conservatory, &c., twelve months hence. *H. W. W.*

Acacia lophantha.

The beautiful green Fern-like foliage of this plant renders it very attractive and useful for decorative purposes either for mixing in groups or among other plants on the side stages of greenhouse or conservatory. Seeds sown this month in light sandy mould and then placed in heat will make nice useful little plants by the autumn. If the seeds are steeped in hot water for a couple of hours before being sown they will germinate several days earlier than they would otherwise do. The seedlings should be potted off singly into 3-inch pots as soon as they have made 2 inches of growth, using an admixture of three parts sandy loam and one of leaf-mould. After the roots have taken to the soil the plants should be transferred to a less warm and moist atmosphere, and be stopped once or twice to make them branch.

Pandanus Veitchii.

This is one of the most ornamental and useful decorative plants in cultivation for use on the dinner-table or for associating with other plants in groups or on the stages in the stove, the pale green leaves striped with white being very telling when contrasted with bright foliaged plants and Ferns. It is easily propagated by suckers, which, if taken off at once and potted into 60-size pots in sand, loam, and peat in equal parts, and placed on a shelf in the stove near the glass, will make useful decorative plants by next Christmas. *H. W. Ward.*

CAMELLIAS.

In growing these plants I have practised for some years a cool treatment throughout the year with much success. Camellias are often met with growing in a temperature more suitable for stove plants, and which is, in my opinion, a fruitful source of bud dropping, which failing is aggravated by their being kept too dry at the roots. Here we have a number planted out in sandy loam only, in a bed occupying the centre of a house; the varieties are Jubilee, reticulata, Countess of Orkney, Donckelaarii, imbricata, florida, Cup of Beauty, Washingtoni, speciosa, Eugénie de Massena, Fra Arnoldi de Brescia, Lady Hume's Blush, alba plena, eximia, Hudsoni, Monteroni, and Chandleri elegans. There are two fine old trees of this last variety at the present time masses of flowers and opening buds, and the supply of flowers from the general collection extends from October to April. As soon as the flowers are all cut the house is closed early in the afternoon, after giving the trees a good syringing; they are not syringed in the early morning as the leaves are then liable to scald; and I never use shade, no matter how hot the weather may be, but give air in the early morning, increasing it as required throughout the day till closing time, and supplying plenty of water at the roots when required. After the plants have made their growth the house is well ventilated day and night, syringing being performed late in the afternoon. The winter temperatures are not raised at any time beyond 45° with fire-heat. By this method of growing the Camellia, it buds so thickly that it becomes necessary to thin out quite half the crop of buds. The stimulant given them while opening their flowers is soot-water, which

I find suits them in every way, increasing the size of the bloom, and giving a dark glossy, and leathery look to the foliage. *Edward Ward, Hewell, Bromsgrove.*

Trees and Shrubs.

EARLY FLOWERING SHRUBS.

Andromeda floribunda.—Flowering as early in the year as this shrub does, it is particularly welcome, and its flowers combine a chasteness of colour with elegance of habit that is perhaps unsurpassed by any other in the family to which it belongs. To see, as we have them at present, several densely branched, 4 feet high plants, studded with their snow-white mossy bells is delightful, and would render us quite excusable for ranking this shrub as one of the most showy and beautiful of our hardy evergreens. Good fibrous peat with an admixture of sharp sand, would seem to suit the requirements of this North American plant well, but it must never suffer from want of water, or a dingy, meagre appearance is instantly put on, and from which it is almost hopeless to get it fully removed. The flowering period is from February to April or May, and so hardy is the plant that we cannot remember having seen, even during our most severe winters, a twig or a flower injured in the least.

Daphne neapolitana.

Amongst the Daphnes are several of our earliest flowering as well as highly ornamental shrubs, and the one now under notice is certainly no exception to the rule. It is of a dense, upright habit, with small, dark green, Box-like leaves, and terminal clusters of purplish-pink, sweetly-scented flowers. To see it at its best this Daphne must have a cool, moist, partially shaded situation, and good free loam in which to grow. Another very desirable small-growing species now in flower is D.Blagayana, which with its ivory-white fragrant blooms and low-growing, straggling branches is just the thing for trailing over some rocky ledge. Whilst speaking of the Daphnes we must not omit our native and much loved plant, D. Mezereon, and its white form. The latter is, in truth, a lovely shrub, that quite lights up with its long sprays of deliciously scented pure white flowers the darkest corner of the shrubbery grounds. Why it is so seldom seen is quite a puzzle, for certainly a more ornamental and easily managed plant it would be hard to conceive.

Menziesia empetriformis.

This is a charming, low-growing—indeed, I might almost add, creeping shrub, of Heath-like appearance, and at present profusely decked with its cushions of large rosy blooms. For planting in a peat bed amongst standard Rhododendrons it is invaluable, the semi-procumbent stems and wealth of pearly bells furnishing one of the brighest of carpets. As a rockwork plant this Menziesia is likewise much in request; indeed, in this position it is perhaps shown off to better advantage than when planted on the level.

Kölreuteria paniculata.

There are many serviceable hardy shrubs and small-growing trees with which cultivators are not very familiar. The Kölreuteria is one of these, for certainly as a free-flowering, pretty-foliaged plant it well merits a place in collections. Being a native of China it is, perhaps, in cold situations not perfectly hardy, or at least does not ripen its young shoots well, but by planting in a sheltered warm place, and in a kindly, free soil it thrives in a satisfactory manner, and produces during June and July panicles of beautiful yellow flowers, *A. D. W.* [The tree will withstand 60° of cold, therefore quite safe to plant in this country, but it will flower only when the growth is well matured. Ed.]

Hardiness of Ilex nobilis or insignis.

This well named most handsome Indian Holly, a native of the Darjeeling hills, which when in full vigour produces leaves from 10 to 11 inches long, of a rich deep shade of green, and deeply toothed along their edges, has hitherto proved tender even in this comparatively mild southern climate. It will therefore be good news to lovers of this interesting family, to hear that when grafted on a stock of the common Holly (I. aquifolia) it becomes almost, if not perfectly hardy. A nurseryman in the much colder North of Ireland writes me word recently that, having at the commencement of this winter planted out side by side a seedling and a grafted plant of this Holly, the former was killed outright by the first severe frost, but the latter is still only slightly burned at the tips of the young shoots. *W. E. Gumbleton.*

Azara microphylla.

Inconspicuous as the flowers of this plant are in-

Fig. 41.—Group of Young's Cypress (see p. 176.)

dividually, yet the profusion in which they are produced, combined with their delicate musky odour, renders them of considerable value. Either as a standard or when planted against a wall, the latter is preferable—this Valdivian plant does well; and being almost perfectly hardy, and by no means fastidious as regards soils, it should find a place in every collection of shrubs. Fine large specimens, one 9 feet wide by 6 feet high, are now in full bloom in the flower garden at Penrhyn. They are trained against a sunny wall, and for which their peculiar fan-shaped mode of branch-development specially adapts them. The foliage is very neat, dense, and of a dark shining green, the margins being distinctly serrated.

Epigæa repens.

This, the creeping or ground Laurel, is at the present time very effective, the white pinky-tinged, wax-like flowers just peeping through the almost prostrate foliage being of the richest description. Its character of being a ticklish subject to deal with, has no doubt interfered with its otherwise wide dissemination, for at the present time few indeed are the collections of hardy shrubs in which this dwarf is included. Planted in an eastern aspect, and in loamy peat, with a free admixture of sand, it does well; it is, however, well to bear in mind that an equilibrium of moisture, and an almost constantly shaded position, has produced the finest and most luxuriant specimens to be found in this country. The flowers are highly aromatic and refreshing. *A. D. Webster, Penrhyn Castle.*

Ribes floridum.

The present planting season should not be allowed to pass by those who require a pretty and interesting flowering shrub, without their procuring plants of the subject of this note—the wild black Currant of the Northern United States. It is a profuse flowerer, but the blossoms—in spite of their rather large size—are not particularly conspicuous, on account of their colour, which is whitish. The leaves are not unlike those of the cultivated black Currant, whilst the berries of both are similar in smell and flavour. The great beauty of the North American plant, however, resides in the rich autumnal colouring of the decaying foliage—various shades of dark blackish-purple and reddish-bronze. This species, after its having been described by L'Heritier under the name of R. floridum, was redescribed by Lamarck as R. pennsylvanicum. We have also seen it in nurseries under the name of R. missouriensis. *G. N.*

GESNERA CINNABARINA.

Those who wish for an effective, easily-grown, and useful midwinter plant, should take care to grow a good stock of the above. Its rich, warm, velvety-brown coloured leaves are most pleasing to the eye, from the commencement of their growth, and where in flower at this dull time of the year few plants are more agreeably conspicuous; but its great value to my mind as a decorative plant is the beautiful effect it produces even before it blooms, arranged among a collection of plants in flower.

In our Orchid-houses during the past two winters I have had a long bank of Calanthes, rosea, Veitchii, and lutea, with a few Adiantums mixed with the above Gesnera, and the effect has been rich in the extreme, and much admired. The arrangement lasted for over two months, and the Gesnera is only now in full bloom.

The tubers are started at the end of May in stove heat, in 5-inch pots, five tubers in a pot. When the pots are filled with roots the plants are shifted into their flowering pots and replaced in the stove. They love plenty of heat and moisture and slight shade when growing. After growth is completed they succeed well in a much cooler atmosphere. A 6 or 7-inch pot is a convenient size to flower them in, and if well grown they will make plants from 18 inches to 2 feet through before Christmas.

Those who may be short of tubers and wish to increase their stock may start the tubers earlier, say the beginning of April, and take the cuttings when about 3 inches long. The plant may also be propagated from its leaves, but if strong fine plants are wanted from early November to Christmas the best way is to plant tubers as stated. The compost that suits them is peat, leaf-mould, and light loam in equal proportions, with sufficient sand and good drainage to enable the water to pass through freely. They must not be potted too firm or receive much water until their pots are well filled with roots and the plants in active growth. The surface of the leaf being so woolly it is best not to syringe them, as the purest of water will generally leave some sediment after evaporation. *O. T.*

ORCHID NOTES AND GLEANINGS.

INDIAN ORCHIDS.

Conditions under which they Grow.—Orchid growers frequently complain of the want of information regarding the conditions under which Orchids grow in the tropics. It is thought that a better knowledge of the climate of the various districts in which the Orchids are found will assist gardeners and amateurs in judging what treatment will best suit the various varieties under cultivation in England. Some very interesting information is given on p. 77 of this year regarding the conditions under which Vanda cœrulea, &c., grow in Assam, but no direct conclusion is drawn from the conditions stated.

Although there are frosts in Shillong, Assam, and other hill stations in India, it would not answer for English growers to come to the conclusion that Indian Orchids coming from high altitudes are the better for frost.

As a rule, in most of the hills in India where Orchids are found, hoar-frost exists only at night, which rapidly disappears with the early rays of the rising sun.

If an Orchid covered with hoar-frost, with its pseudobulbs or leaves in an unripened state, catches the direct rays of the sun, the leaves or growths at once get burned and turn black, and the plant runs a great risk of dying *in situ*.

Probably the only epiphyte freely exposed to severe conditions of frost and snow is Saccolabium distichum. This plant grows at an elevation of 9000 feet about 10 miles from Chuckrata, Himalayas, on small stunted trees.

Pleione Wallichii

is an Orchid found in many places where there are three months of snow in the winter. It has very warm snug quarters, living as it does among the very deep thick moss, which covers the large branches of the evergreen Oaks. It receives a generous supply of heat and moisture during the summer months.

Cœlogyne cristata

is found in the Himalayas on rocks in warm situations, and any frost or snow falling on it rapidly melts.

Cœlogyne glandulosa and C. odoratissima,

growing in the Neilgherry and Annamully Hills, are found in a position where there is a good deal of frost in winter, but they grow generally on rocks in such exposed situations that they have been so ripened and hardened by the sun so as to be well able to stand the frost. It is worth noting that well-ripened growths will pass through conditions of cold which would be fatal to half-ripened ones.

These notes regarding the conditions under which various Orchids grow in India, Burmah, and the Indian Archipelago, will be continued from time to time, if found to be of interest to Orchid growers generally [as they will surely be. Ed.]. *Emeric S. Berkeley.*

Angræcum sesquipedale.

It is not always that this Orchid can be prevailed on to develope its blooms, preferring to turn yellow and drop. At Chatsworth there is a piece now well open. It has three spikes, with three fine flowers on one spike and one on each of the others; a fourth spike showed, but did not develope itself. *Correspondent.*

Dendrobium speciosum var. Hillii.

There is a fine specimen of this Orchidaceous plant in bloom at Steephill, St. Saviour's, Jersey, the residence of Mrs. C. Robin. The plant is divided into many breaks, and has nine spikes of bloom upon it. Some of the pseudobulbs, with the leaves surmounting them, are 2 feet long, and 5 to 6 inches in circumference, the spikes of bloom extending an additional 2 feet, with from ninety to one hundred flowers upon them. The flowers are French-[yellowish]-white, thick and glossy as enamel, and delightfully fragrant The same plant flowered last year, and is gradually increasing in the size of the growths and the spikes of bloom. Is it usual to see such fine specimens of growth? [an even finer specimen was figured in the *Gardeners' Chronicle*, 1877, Jan. 27, p. 112, Ed.] *C. B. S., Jersey.*

Saccolabium bellinum.

This neat little plant is one of the best of the group to which it belongs, and is worthy of cultivation in any East Indian collection. The flowers are about 1½ inch in diameter; the sepals and petals yellow, heavily blotched with dark brown; and the lip, which is very hairy, is white, with some yellow and purple markings towards the base. It is a native of Burmah, and at present is very rare in collections. A fine plant may now be seen flowering in the East Indian-house at Kew, and an excellent figure is given at t. 156 of the *Orchid Album.*

Galeandra baueri.

This plant is best grown in a pot, in a compost of peat and sphagnum moss, with plenty of drainage. It should be placed in the East India-house, in a position where it may obtain all the light possible, or if a sunny position can be found for it all the better. After flowering it should be allowed a good rest, as it is of deciduous habit. The plants should have all the care possible by placing them on a shelf or hanging them up near the glass, so that they can have all the light which is possible in order to ripen their pseudobulbs, which is of great importance in the culture of all deciduous Orchids, especially where they have thick fleshy bulbs to mature, as these will often decay if they are not thus exposed to the light. The placing of them in this position has a double advantage, inasmuch as the unsightly bulbs are kept out of view in a certain degree; but when so placed they must be well looked after, just sufficient water being given to keep the bulbs from shrivelling. If they are not judiciously attended to and are watered too much, the bulbs will very often rot; they require to be kept moist during their growing season, but after their growth and flowering are completed the plants should be placed in the position recommended above. As soon as the young growth appears from the base of the bulb, give a little water to encourage the plants to start vigorously, and to produce good bulbs.

They are propagated by dividing the bulbs just as they begin to grow, leaving one or two good bulbs at the leading growth; after they are divided they may be put into small pots. *Orchid Album, January*, 1877.

Mormodes platychila.

A pretty and distinct species of this interesting genus is now flowering at Kew under the above name. The flowers, which are over an inch across, and pale yellowish-buff, with some fifteen dull purple stripes on the upper part of the lip, are borne in compact erect racemes of about twelve flowers. The leaves appear after the flowers. The genus is closely allied to Catasetum, and one of the species (M. ignea) is thoroughly dealt with in the sixth chapter of Darwin's fascinating work. Having described Catasetum, Monacanthus, and Myanthus, and shown them to be sexual conditions of one and the same plant, he takes Mormodes in hand, and explains its peculiarities. How it differs from Catasetum in

being hermaphrodite, and in its remarkable twisted column, which gives the lip the appearance of being on the side of the column, not in front, as in other Orchids; how the hinge of the anther-case alone is sensitive to a touch, which causes the pollinia to be ejected, and how these on being liberated rapidly curl up, like a hoop, by their own elasticity, but on exposure gradually straighten again as the wet inner surface dries, some twelve or fifteen minutes being required for the operation; and, more marvellous than all, how all this complex mechanism is necessary to ensure the fertilisation of the flower. Those who wish for full details will of course consult the work. *R. A. R.*

Cypripedium auroreum×.

Subjoined is Dr. Reichenbach's description of this Cypripedium, which he asks me to send to you for insertion. *Norman C. Cookson, Oakwood, Wylam-on-Tyne.*

"A fine seedling raised by Mr. Norman Cookson. It is believed to be the offspring of Cypripedium Lawrenceanum and C. venustum. The leaves are like those of the first; the flower partakes of the qualities of both. The upper sepal is broad, ovate, and prolonged into an acuminate point, as in C. venustum and C. Dayanum. It has a white ground colour, neatly washed with rose-purple on both sides, whence the name was suggested. It has a broad green midrib, with ten ribs on each side. The petals are not divaricate, as in Sir Trevor Lawrence's Cypripedium, but bent downwards, as in C. venustum, rather narrow, green veined at the base, purple to Indian-purple at the anterior part, with large eye blotches on the borders and a few small ones in the mid-line, strongly ciliated. The lateral sepals form a narrow acute body, scarcely equal to half the lip, with fewer dark green veins, two of which only reach the point. Lip long, with two well marked side lobes, a long lip, yellowish-green on the back, Indian-purple to brown above. The involved parts are yellowish, with shining yellowish red warts. The flower is much larger than that of Cypripedium venustum."

THE KITCHEN GARDEN.

SEAKALE.

Where this is planted annually for lifting and forcing, sets for the purpose should be prepared; cuttings for planting can be made from the trimmings of those lifted for forcing, or by the division of old plants, retaining the fleshy portions of the roots, from 1 inch in circumference, and from 4 to 5 inches in length.

Seedlings raised in March last, and found to be too small for this year's forcing, may also with advantage be used for planting, taking the precaution to remove the crown before doing so, by cutting it straight across. The sets when prepared can be laid thickly together with a sprinkling of fine soil over them until callused, or planted out permanently at once.

To obtain good strong plants for forcing two of the strongest growths only should be retained, and all surplus ones removed. In planting for annual lifting, any well dug rich soil and with an open situation will be found suitable for the purpose, the sets being inserted with a dibber slightly below the surface of the soil, in rows from 9 to 12 inches apart and 18 inches asunder; for permanent planting and for blanching on the ground a better preparation should be made, and in this instance the soil should be well manured and trenched beforehand, and in planting more space should be allowed to admit of the necessary material for covering and blanching, the rows being from 2 to 2½ feet apart each way, three sets being planted together in a triangular form 3 inches apart, with alleys 3 feet wide every third or fourth row. Seeds can be sown in March either on beds thinly for raising stock, or in drills to be thinned according to requirements.

After-treatment, throughout the summer will simply consist of removing surplus growth, flower-spikes, &c., and in keeping the ground clear of weeds; as a stimulant an occasional sprinkling, during the growing season of nitrate of soda will prove beneficial.

General Work.

Tomatos which were struck from cuttings in autumn, and are intended for early fruiting inside, should be potted on and encouraged to grow freely in a moist brisk temperature prior to their being planted out into fruiting quarters.

Seeds.—Sow in heat Tomatos, Cucumbers, Vegetable Marrows, Borage, and Sweet Basil; on warm borders or in frames, Leeks and Onions for early transplanting; also successional ones of Early Horn Carrot, small salad, and Radishes. In the open make sowings of early Peas and Broad Beans; plant out in shallow drills 9 inches apart Shallots and Garlic.

Dung Frames containing early Potatos should be cautiously ventilated, admitting air only on fine warm mornings and closing, whilst in a dry warm state, the bottom-heat being renewed and maintained by additional linings. Any rough frames at disposal can with advantage be utilised for growing early Potatos by having from 12 to 18 inches of rough fermenting material, sufficient to create a slight bottom-heat, placed in the bottom of the frame, and filled in with soil to a proper distance from the glass and planted; these, if afforded slight protection, will yield a supply some weeks in advance of the earliest outside plantings. *John Austen, Witley Court.*

THE SEED TRADE.

The Clover and Grass Crops.—In a report issued by Messrs. Hurst & Son, of Houndsditch, they give some information respecting the past harvest of the various Clover, grass and other forage seed crops in this country and abroad. At this early date it is found difficult to give with certainty a forecast of the probable range of price, but taking into account that from hardly any district is there tidings of an abundant crop, and from many under-average ones, the present prices are likely to be maintained, and a substantial advance may be expected in some cases, such as fine Trefoil, the finest qualities of English red Clovers, clean even white Clovers, and the best quality of French-Italian Rye-grass.

English Red Clover and Cow Grass.

According to the best information that has come to hand up to the present time the crops of these will, on the average, be lighter than last year's. A large second cut was left for seed, but in the southern and western counties bad weather set in before the crops could be harvested, and while some early housed lots may show a good colour, the majority of the samples will be represented by unripened seeds, brown and uneven in character. The best samples are expected from the Eastern Counties, where very large breadths were left for seeds, and this district of country, fortunately, escaped the worst of the autumn rains.

Foreign Red Clover.

The German crops prove much smaller than those of last year, but those harvested in France are very large, having been gathered in fine weather, and samples to hand show fair size and colour, indicating well matured seed. Reports from America speak of moderate crops in the States, but prime samples are likely to be scarce. It is expected that the low prices prevailing and likely to prevail on this side of the Atlantic will somewhat check importation to Europe. Messrs. Hurst & Son recommend that all seed, and especially the cheaper qualities, received from France and Germany, be carefully sifted, as the Dodder-weed is common in those countries.

White Clover.

A medium crop of English white Clover of fair quality has been secured, but first-class samples will be scarce. The crop of German white is smaller than for several years past, and below average quality.

Alsike.

The English crop proves to be one of rather poor quality, and the Continental crops are no better. The finest samples have come from Canada, and a good supply is expected for this season.

Trefoil.

There seems to be a diminishing demand each year for this seed. Perhaps this is not to be wondered at, for fifty years ago it was predicted of it that "from the small bulk of produce which it yields the propriety of its cultivation is questionable; and, besides, cattle are not found to relish it if they can procure more nutritious food." The supply this season is, however, abundant, and little, if any, advance on present prices is anticipated, excepting, perhaps, for the finest quality of English-saved seed. This is undoubtedly scarce, and already higher prices are realised for these than were current last year and they are still advancing.

Lucerne.

This is an average crop, of good quality, but purchasers should be upon their guard in selecting this article, as seed producing an inferior character of plant has found its way into the market.

Sainfoin.

Fairly good crops of well-ripened seed are reported from France. The English crops of Giant Sainfoin are small, but a good one of the common has been secured.

Italian Rye-grass.

The French crop is large, but of variable quality. The cleanest and finest upland seeds are being sold at the prevailing low prices, but an advance in stocks of fine qualities may be looked for. The Irish crop is again large, but, as usual, it contains a large proportion of the objectionable Holcus which grows among it in that country.

Perennial Rye-grasses.

Never before, perhaps, have these grasses been so low in price. The yield from the past year's crop is certainly below the average; still, prices are low, and they are no doubt kept down by the large quantity of old seed still upon the markets. But it has to be stated that much of the old seed is of very poor growth, and therefore likely to be dear to the consumer at any price. But in the case of genuine new and extra cleaned seed, a gradual advance in price is confidently expected.

Natural Grasses.

These in most cases are cheaper than last year. Timothy-grass is not a large crop, and being still in large demand is likely to advance in price. Cocksfoot grass is cheaper, but parcels of seed free from Holcus command a ready sale at high prices. Foxtail grass proves to be a shorter crop than last season, and it does not show such high germinating power, owing to the prevalence of unfavourable weather at harvest time.

White Mustard.

This has proved a small crop in Essex, but a fair one in Lincolnshire and Cambridgeshire, and the quality is reported as being of a useful agricultural quality.

Rape.

Of English Rape there is a very short crop, of poor quality, but reports from Holland say the crops there are fair. *Pisum.*

Manchester Horticultural Improvement Society.—The fortnightly meeting of the Manchester Horticultural Improvement Society was held in the Memorial Hall, on Thursday evening, January 27, Mr. E. G. Hughes presiding. Mr. W. Birkenhead, of the Fern Nurseries, Sale, read a paper on "Ferns and their Culture." The reader strongly protested against the wholesale destruction of our native Ferns, and expressed a wish that legislation might do something to remedy this evil.

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APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

MONDAY,	Feb. 7	Society of Arts (Cantor Lectures): "Diseases of Plants, III." (Conclusion).
TUESDAY,	Feb. 8	Royal Horticultural Society: Scientific Committee, at 1 P.M.; Fruit and Floral, at 11 A.M. Annual General Meeting, at 3 P.M., in the East Crush-room, Royal Albert Hall. National Rose Society: Executive Committee.

SALES.

WEDNESDAY,	Feb. 9	Hardy Plants and Bulbs, Greenhouse Plants, &c., from Ghent, at Stevens' Rooms. 5000 Lilium auratum, Roses, Plants, &c., at Protheroe & Morris' Rooms.
THURSDAY,	Feb. 10	Established Orchids, Lilies from Japan, &c., at Stevens' Rooms.
FRIDAY,	Feb. 11	Imported Orchids, at Protheroe & Morris' Rooms.
SATURDAY,	Feb. 12	Hardy Plants and Bulbs, Greenhouse Plants, from Ghent, &c., at Stevens' Rooms. Roses, Plants, &c., at Protheroe & Morris' Rooms.

Royal Horticultural Society.

THE Annual Report of the Royal Horticultural Society, to be presented to the Fellows on Tuesday next, is in some respects a melancholy document. In spite of the efforts that have been made during the last few years, in spite of the largely increased publicity it obtained by its connection with the Colonial and other Exhibitions, the balance is very decidedly unfavourable to the Society; and as to its domicile, it is very much in the position of an Irish tenant—liable to summary eviction. Whatever may be said, this is not the fault of the horticulturists, who have earnestly supported the Council, and who may be relied on to do so in the future. The Congresses and the general Committees have done their work manfully and well, and the Council have manifestly done their best, and yet— It is no use, however, reverting to the past, we must look to the future.

What is to be done? For the horticulturists the reply is obvious, "Stick to the old Society through thick and thin. Do not be particular about your own special panacea, but lend a hand to help the Society out of the slough into which it has fallen." The report alludes to some negotiations with the Albert Hall Corporation; but as we write we hear that those negotiations have fallen through, and we cannot say that we should regret the circumstance if the report should prove correct. The great want is an independent centre—a house wherein the offices, library, and meeting-rooms for the Committees may be concentrated. Space for exhibitions on a large scale at intervals may comparatively easily be provided. Where is such a house to be found? Where is a Horticultural Institute to be founded?

We are quite aware of the prejudice that exists against South Kensington and all its works. We ourselves have never ceased to lament that connection of the Royal Horticultural Society with South Kensington which has proved so disastrous, but we are bound to consider existing circumstances and act accordingly. It comes to this. The Royal Horticultural Society has a distinct claim morally if not legally on the Commissioners of the Exhibition of 1851. It was by them that the Society was induced to encounter the difficulties that beset it; it was for them and their property that the Society incurred enormous liabilities; it is on their property that the money was sunk, and the Society left practically penniless. The Commissioners are a body entrusted with funds and powers to be used for the advancement of science and art. Morally, if not legally, then, they are bound to give a suitable site and buildings for the Royal Horticultural Society, as a Society, as the French say, of public utility. To do so would be to act strictly in accordance with their trust, and we have therefore a right and claim upon them, and if they would recognise that fact all might yet be well—provided always that the Society were free and unfettered. The Government has already provided accommodation for other scientific societies, let the Commissioners do so for the Royal Horticultural Society, which has at least as great claims as any other similar Society. We subjoin the text of the report:—

"The usual accounts and balance-sheet are submitted to the Fellows. The Council have been for a long time anxiously considering the arrangements which have now to be entered into, in order to enable the Society to carry on the useful work on which it has been engaged during nearly the whole of the present century. While they cannot conceal from themselves that the Society's connection with the recent Exhibitions, and indeed with South Kensington generally, has been gravely disadvantageous to it in the prosecution of its legitimate work—the promotion of scientific and practical horticulture—it is obvious that the Society could not establish itself in a new home, adequate to its requirements, without undertaking a very serious expenditure, for which funds would have to be provided. The Council have therefore entered into preliminary negotiations with the Royal Albert Hall Corporation, and they are prepared to recommend to the Fellows that they should be empowered to enter into an agreement with that body on the following terms,—terms which the Council believe will leave the Society practically independent, while providing sufficient accommodation for its wants.

Fig. 42.—ROMULEA MACOWANI: FLOWERS YELLOW AND ORANGE. (SEE P. 184.)

GROUP OF DECORATIVE PLANTS IN BIRMINGHAM

The Royal Albert Hall Corporation agree to give the Royal Horticultural Society:—

(*a*) The use of the conservatory for fortnightly and other shows.

(*b*) Accommodation for the Lindley Library and the meetings of the Scientific, Fruit, Floral, and other Committees.

(*c*) Accommodation for the Society's office and staff.

(*d*) Admission to the Royal Horticultural Gardens every day, and to the Royal Albert Hall (unreserved seats) whenever open to the public.

The Royal Horticultural Society undertake the horticultural (but not the structural) maintenance of the conservatory, and of such limited portions of the gardens as may be occupied by the Royal Albert Hall Corporation, and to contribute an amount to be agreed upon towards the heating of the conservatory. It is distinctly understood that the Royal Horticultural Society will enter into any agreement it may make as an independent body, and that the Society will have no connection whatever with the musical or other entertainments contemplated by the Royal Albert Hall Corporation. The latter body have intimated that at present they are not prepared to give the Fellows of the Royal Horticultural Society transferable tickets.

The Liverpool Show.

It will be observed that there is a considerable deficit on account of the provincial show held at Liverpool in the summer, the small attendance at which was due, in part, to the general election which took place at the same time. It was also found that the counter attraction of the Liverpool International Shipping Exhibition affected the attendance very prejudicially—many people labouring under the impression that the Royal Horticultural Society's show formed part of that exhibition. In point of merit the Society's show surpassed any of those previously held in the provinces. Many of the collections were models of successful cultivation, and finer Orchids, Crotons, Dracænas, miscellaneous stove, greenhouse, and hardy plants have rarely, if ever, been seen. The cut flowers, fruit, and vegetables were remarkably good, and the exhibition of glass structures and heating apparatus attracted great interest, especially in the boiler competition. The Royal Horticultural Society desires to acknowledge its obligation to the large and enthusiastic body of exhibitors who filled every class at this exhibition.

The Council cannot pass from this subject without expressing their sense of the readiness and promptitude with which the sum guaranteed by Liverpool towards the expenses of the show has been paid.

At the commencement of the year the Society laboured under the great disadvantage of being deprived by the Royal Commissioners of the Colonial and Indian Exhibition of the transferable tickets issued to the Fellows, in consequence of which many notices of resignation were received by the Council.

The Conferences.

The Narcissus Committee, in continuation of its previous work, held during the past year three meetings, at which a large number of very interesting specimens of Narcissi, from various parts of the United Kingdom and from abroad, were submitted for critical examination. Several interesting discussions took place, and some progress was made in the difficult task of Narcissus nomenclature.

The Primula Exhibition and Conference held in April last, under the Presidency of J. T. D. Llewelyn, Esq., was organised in connection with the Exhibition of the National Auricula Society. A representative display of florists' flowers was thus secured, and, in connection with it, a general exhibition of species and varieties of the genus Primula. The Council is under great obligations to the Directors of the Royal Gardens, Kew, and of other Botanic Gardens in England, Scotland, and Ireland, as well as to numerous amateurs and nurserymen, or the means of carrying to a successful issue an exhibition of a unique and most interesting character. The Society is also indebted to those botanists on the Continent, in Canada, and in India, who, by the transmission of seeds, living plants, illustrations and documents of various kinds, contributed to the success of the Exhibition and Conference.

The Conference itself was well attended, the interest evoked sufficing to bring several visitors even from Scotland and Ireland. The papers read were at once comprehensive and suggestive, and the discussion upon them was particularly instructive. A report of the Exhibition and of the Conference, including the text of the papers, a complete list of species (drawn up by Mr. Dewar, of the Royal Gardens, Kew, and revised by Mr. G. C. Churchill), and various documents relating to the natural history and mode of cultivation of the species of Primula, has been recently published and circulated among the Fellows.

During the week of the provincial show at Liverpool a Conference on Orchid Nomenclature was held. This was attended by M. Charles Joly, on behalf of France, and by Messrs. Pynaert and Van Volxem on that of Belgium. The proceedings have been published in the *Journal* of the Society, and circulated among the Fellows and others interested.

At the same time a series of prizes for essays on the "Structure and Function of Roots," given by the *Gardeners' Chronicle*, were distributed by the President, the second prize being gained by one of the Society's gardeners at Chiswick.

Chiswick.

The practical work at Chiswick has been carried out during the past year in the usual manner, and the garden maintained in a state of efficiency.

The special trials by the various Committees, although not so varied as in some previous years, have yielded good results. The Fruit Committee trials consisted of Potatos, Peas, Strawberries, and Tomatos grown at Chiswick; in each class several certificates were awarded.

A collection of the smaller and hardier high-flavoured Grapes, together with a number of American varieties, planted in an unheated house two years ago, have fruited during the past season, and some interesting notes have been obtained.

The trials of the Floral Committee were also conducted at the Chiswick Gardens. Collections of Fuchsias, Ivy-leaved Pelargoniums, Carnations, Hollyhocks, and Dahlias were received and grown on in the houses and open borders for the inspection and adjudication of the Committee.

Steps were taken during the early part of the year to carry out at Chiswick extensive experiments for the Government in the cultivation of Tobacco, seeds being obtained and plants raised of nearly every known variety. Owing, however, to the difficulties raised by the Excise authorities, these had to be abandoned.

The Indo-Colonial Exhibition.

At the request of the Royal Commissioners of the Colonial and Indian Exhibition, the Society last year took charge of the plants sent home by the various Colonies, and prepared them for the Exhibition. This important and burdensome work was carried out with complete success. The whole of the plants were placed in the Exhibition in perfect health, and maintained in a vigorous condition during the Exhibition, under the care of the Society. This work necessarily occupied a considerable amount of room and interfered with the general work of the Chiswick gardens.

A correspondence was entered into with the Commissioners of the Colonial and Indian Exhibition with a view of organising in connection with it special collections of tropical and other economic plants, as well as special groups illustrative of the characteristic vegetation of the several colonies. It was also suggested that an organised effort might be made to introduce on a commercial scale tropical and other colonial fruits, little known to fruit consumers in England. The Commissioners were unable to accept the proposals of the Council, as it was found desirable that the separate Executive Commissions should arrange their own exhibitions. As regards fruit, however, the Council believe that in consequence of their suggestions, energetic efforts were made by the Colonies to send their fruits to the Exhibition. At many of the Society's shows they formed a very striking feature. And the importation of colonial fruits now bids fair to become a permanent commercial enterprise.

Distribution of Seeds, etc.

Applications from Fellows for plants, seeds, &c., continue to be received. During the past year 825 Fellows have been supplied with 18,280 plants, 42,000 packets of seeds, and 4500 cuttings of Vines and other fruit trees. The Council have come to the conclusion that the present system of seed and plant distribution is not satisfactory. Of late years a number of parcels of ordinary flower and vegetable seeds, such as are procurable from the trade, have been prepared and distributed. The Council hope to arrange in future for the distribution of plants and seeds of a rarer and more valuable character. They are glad to announce that, in addition to those they will be able to grow at Chiswick, they have received promises of plants and seeds for distribution from Sir Trevor Lawrence, Mr. William Lee, Baron Henry Schroder, Professor Michael Foster, Mr. S. Courtauld, Royal Gardens, Kew (through Mr. W. T. Thiselton Dyer), Colonel Beddome, Hon. and Rev. J. T. Boscawen, Mr. G. F. Wilson, Colonel R. Trevor Clarke, and Major Mason. As the quantities of some of the plants available must necessarily be limited, special arrangements will have to be made for their distribution.

The crops of Grapes and Pears have been of a good average character, other fruits rather scarce. It is satisfactory to note that the Fellows now exercise their privilege of purchasing, at wholesale prices, the fruits grown at the Society's gardens, to a greater extent than heretofore.

The Frost Report on the winters 1879-80 and 1880-81, by the Rev. G. Henslow, and the Report of the Pear Conference held at Chiswick in October, 1884, prepared by Mr. Barron in the same style as the Apple Congress Report, will shortly be issued.

The Committees and Exhibitions.

The Scientific, Fruit, and Floral Committees at South Kensington have carried on their labours as usual during the year, and to them the thanks of the Society are due. A great variety of extremely interesting new plants and flowers have been submitted for adjudication. The number of First-class Certificates awarded has been 230.

The exhibitions held in the conservatory during the past year have been throughout of a very high character, forming a great attraction to the visitors to the Colonial and Indian Exhibition. The National Rose Society's Show in July, that of cottagers' produce in August, of Grapes in September, of hardy fruits and vegetables in October, may be specially mentioned. A varied, extensive, and continuous display of Lilies, Gladioli, herbaceous and other hardy plants, was furnished by several nurserymen, and attracted much interest.

A novel feature in 1886 was the collection of Orchids in flower shown by Mr. Sander, of St. Albans, under the auspices of the Society, in a plant-house specially constructed for the purpose. The plants were continually changed, and an effective display was maintained without a break until late in the summer. This collection, as well as those referred to above, created great interest, so much so that it was frequently difficult to get near them.

The Council desire to point out that the fortnightly meetings of the Society are becoming more and more the recognised occasions for the introduction of new plants to the public. They believe that for many years the finest and most beautiful, as well as the most curious, horticultural novelties, whether of natural or artificial origin, have been first seen publicly at these meetings.

The thanks of the Society are due to Messrs. Sutton & Sons, Messrs. Carter & Co., Mr. H. Deverill, Messrs. Webb & Sons, and Mr. C. Fidler, for their donations of special prizes.

Numerous additions have been made to the Lindley Library during the past year, and a Handbook of every Colony represented at the late Colonial and Indian Exhibition has been seecured.

During the year, twenty-nine Life Fellows and thirty-two Annual Fellows died; 200 Fellows retired from the Society, and seventy new Fellows were elected."

The following is the auditors' report:—

"We have au lited the accounts of the Society for the past year, and have gone through every item with the vouchers, and find them perfectly correct. It is very gratifying that the books of the Society are kept by Mr. Dick in a very clear and perfect manner.

"We much regret that two great disturbing influences have had a serious and depressing effect on the finances of the Society in 1886; the first being the taking away the privilege of transferable tickets of admission, and making them personal, which resulted in the resignation of a large number of Fellows, causing a reduction in the receipts of this most important part of the revenues to the amount of £850. Secondly, the failure of the Liverpool Exhibition, which shows a deficiency over the receipts of £740, and added to the loss from subscriptions, makes a total loss under these two heads of £1590, against which there is the asset of £300 for overdue subscription.—We have the honour to remain, gentlemen, your most obedient servants, "John Lee, "Jas. F. West, "W. Richards, } Auditors.

"January 26, 1887."

Horticultural Club.—The annual general meeting of the Club took place on Tuesday last, when there was a large attendance of members to meet Sir Trevor Lawrence, the President of the Royal Horticultural Society. Amongst those present were Mr. John Lee, Chairman; the Hon. and Rev. J. T. Boscawen, Dr. Hogg, the Rev. W. Wilks, Messrs. G. Maw, Harry J. Veitch, Philip Crowley, H. J. Pearson, C. P. Pearson, Arnold Moss, G. Paul, George Bunyard, A. Pearson, T. Francis Rivers, J. Laing, Harry Turner, J. S. Cosins, T. W. Girdlestone, the Rev. W. H. D'Ombrain, Hon. Sec., &c. The meeting derived additional importance from the fact that a sub-committee of the Club had been appointed to consider the position of the Royal Horticultural Society, and to place some suggestions before the President of the Society as embodying the opinions and views of the outside public on the position and affairs of the Society. The Chairman, in proposing prosperity to the Royal Horticultural Society, coupled with the name of the President, Sir Trevor Lawrence, traced the history of the Royal Horticultural Society, and said that although its present position seemed so precarious, he was sure the horticulturists of England would rally to it, if it could procure a home of its own, without connection with or interference with any other body. Sir Trevor Lawrence replied, and thanked the Club for the interest it had taken in the Society, and spoke hopefully of its future; he quite agreed with the desirability of the Society having a home of its own. He thanked the sub-committee for their suggestions, which he would place before the Council. Messrs. Veitch, Pearson, Paul and others took part in the conversation, all dwelling on the importance of the Society having an independent footing. The tables were kindly decorated by Mr. T. A. Dickson, of Covent Garden, and Mr. G. Bunyard supplied some beautiful fruits for dessert.

The following are the suggestions submitted to the President of the Royal Horticultural Society by the sub-committee of the Club:—1. It is suggested whether it might not be advisable to enlarge the number of the Council of the Royal Horticultural Society with the view especially of giving a larger representation to horticulturists in the provinces. 2. It is suggested whether it would not be possible to create a form of membership for one guinea only. 3. It is suggested that it would be very undesirable to fetter the Society by any permanent or binding contract with the Royal Albert Hall Corporation, or any other similar body It is hoped that a suitable position and necessary buildings may before long be provided by the Society itself for its own sole use and accommodation. 4. It is suggested that it would be very desirable to alter the date of the annual general meeting to some period of the year (say May or June) when there is better opportunity for the attendance of Fellows.

Moore Memorial.—In addition to those previously mentioned, subscriptions or promises have been received from Messrs. Goldring, P. Barr, A.

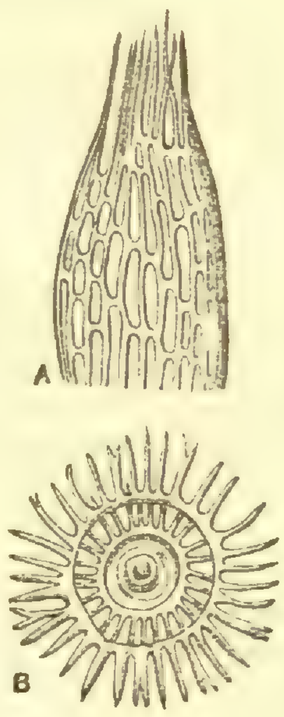

Fig. 43.—A, main tunic of crocus cancellatus; B, basal tunic.

F. Barron, James Richards, Philip Crowley, M. H. Fitch, W. Richards, G. Schneider, C. Hoade, Chelsea Botanic Gardens, W. B. Hemsley, J. O'Brien, Lord Justice Lindley. Further subscriptions (2*s.* 6*d.* to £1 1*s.*) should be sent to Harry J. Veitch, Esq., Chelsea, or to Dr. Masters, at the office of the *Gardeners' Chronicle.*

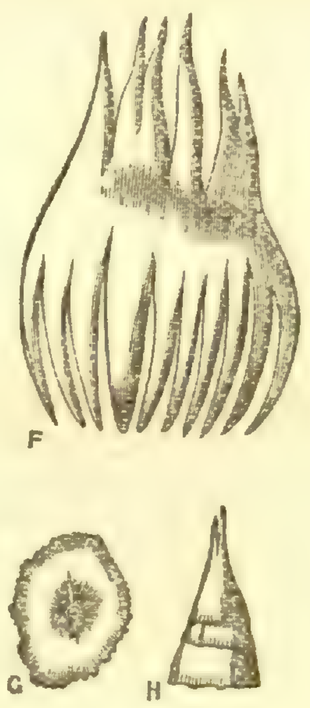

Fig. 44.—F, G, H, the main tunic, basal tunic, and cap of crocus lævigatus.

Cinerarias.—Mr. B. S. Williams sends us some large blossoms of Cinerarias, of fine rich varied tints, taken from plants of dwarf compact habit.

University Extension in Scotland.—A movement is at present in progress among the Scottish Universities for the organisation of systematic courses of extension lectures upon all departments of science and literature, similar in range and aim to those which were initiated in England upwards of twelve years ago by one of our best known educationists, Professor Stuart, M.P.; and which have been so successfully carried on by the University of Cambridge, particularly in the mining and manufacturing districts of the North of England and the Midlands. The permanent colleges of Liverpool, Sheffield, Leeds, &c., have all arisen out of these modest beginnings, and further progress is rapidly being made. It is now hoped to overcome the difficulty of supplying regular and complete instruction, so far as the Scottish Universities are concerned, by uniting their available lecturing power, so that while any Scottish town would naturally in the first place be supplied as far as possible from the nearest University, any desired course might be drawn from a more distant one. In the larger towns it is hoped to found "Extension Colleges," *i.e.*, centres of regular teaching, which can be established for three or five years by subscribing a few hundred pounds to make up the deficit from fees, or rendered permanent by a small endowment. The project is already under consideration in several of the most important county towns and manufacturing centres throughout Scotland, especially in connection with the local "Jubilee" movements.

Jubilee Proposals.—One of the proposals likely to be inaugurated in the Jubilee Year of the Queen is the formation in Aberdeenshire of a Gardeners' Benevolent Society. Mr. Bruce, seedsman, Aberdeen, is the prime mover in this object, and he is now gathering information about the working of such societies. A meeting will afterwards be advertised, so that office-bearers may be elected to further the movement.

The Great Yorkshire Gala and Horticultural Exhibition.—The schedule of prizes for the twenty-ninth annual exhibition at York, on June 15, 16, and 17 next, has just been issued, and over £600 is offered in prizes. Stove and greenhouse plants have liberal encouragement, and groups of plants are also well provided for in prizes. Orchids are especially invited this year, for in addition to the Society's prizes, and special prizes offered by Messrs. Backhouse & Son, the sum of £52 10*s.*, raised by subscriptions amongst friends, is offered for sixteen Orchids, in a 1st prize of £21; 2d prize, £15 15*s.*; 3d. £10 10*s.*; 4th, £5 5*s.* The Pelargonium tent—a very large one—is always a remarkable feature at the York June show, such a magnificent display of plants not being seen to the same extent anywhere else, the large sum of £105 10*s.* being devoted to Pelargoniums in their respective classes. Roses, both in pots and in a cut state, have £126 in prizes, and fruit is liberally provided for, a Veitch Memorial Medal and £5 being offered as a 1st prize for six varieties of fruit, and another class for eight varieties of fruit has £8 for a 1st prize, with good 2d, 3d, and 4th prizes. The Lord Mayor of York is the Chairman of the committee—a position he has held for many years; and Mr. John Wilson, who has been the Secretary from the formation of the Society, is the active Secretary still.

Special Prizes by Messrs Wood & Son.—It may interest Chrysanthemum growers to learn that Messrs. W. Wood & Son, of Wood Green, are offering a set of special prizes, consisting of a 5-guinea Silver Cup, their Jubilee Memorial Silver Medal, and added cash prizes, for the best specimen of a white Chrysanthemum, any variety, grown in any style, without restriction as to size of pots, manures, or stimulants used, or any other conditions. This contest should help to decide which is the best amongst the leading whites, and should give growers and exhibitors at a distance an incentive to visit the National Chrysanthemum Society's principal show with the hope of rivalling some of the suburban growers.

Lee, Blackheath, and Lewisham Horticultural Society.—An interesting paper, on "Orchid Lore," by Mr. Lewis Castle, author of *Orchids, their History and Culture*, was read before

the members at their monthly meeting, held in the Working Men's Institute, Old Road, Lee, on the 28th ult.

Honours to Horticulturists.—We learn that Mr. F. Moore, of the Royal Glasnevin Gardens, and Mr. F. W. Burbidge, of the Trinity College Garden, Dublin, have been elected members of the Royal Irish Academy—an honor greatly to be appreciated by the recipients and the craft at large.

Scottish Horticultural Association.—At the monthly meeting, held at 5, St. Andrew Square, Edinburgh, a report of which will appear in our next issue, Mr. D. P. Laird stated that a correspondent in Dundee had written him in reference to the desire of many Auricula growers in that neighbourhood that a show of Auriculas should be held in Edinburgh, and requested him to lay the matter before the members of the Association. Mr. Greive said he had also been in communication with the same correspondent, and with others in various parts of Scotland, the North of England, and in Ireland on the same subject, with the result that a meeting of delegates from those parts was to be held in the rooms, 5, St. Andrew Square, Edinburgh, on Saturday, the 12th inst., at 2 P.M., to endeavour to make arrangements for carrying out the object in view. He further stated that it was the desire of the delegates to have the assistance and sympathy of the Association. This the President, on behalf of the meeting, desired Mr. Greive to assure the delegates would be cordially extended; and it was moved that the President, Treasurer, and Secretary, Mr. Greive, and Mr. D. P. Laird should represent the Association on the occasion referred to.

Publications Received.—*Farthing Dinners.* By George Herbert Sargant. Second Edition, (London: Simpkin, Marshall & Co.)—*Rosæ Synstylæ; Etudes sur les Roses.* By F. Crépin. (Ghent: C. Annoot-Braeckman, Ad. Hoste Succr.)—*Apple Tree Annual*, 1887 (London: A. Glendenning, 34, London Wall, E.C., and 25, Poultry, E.C.; and E. W. Allen, 4, Ave Maria Lane, E.C.)—*Industrial Ireland* (London: John Murray, Albemarle Street).—*Outlines of Classification and Special Morphology of Plants.* By Dr. R. Goebel (Oxford: at the Clarendon Press).

THE SPECIES OF CROCUS.

The old question of "What is a species?" here crops up. There are few genera in which the individual species are separated in even or equal degree of difference, and cases often occur in the lesser degrees of separation which open the question whether to rank them as species or varieties; indeed, no two genera are precisely alike in the kind of differences which separate individual species. The method of dealing with specific demarcations must therefore vary in different genera. No hard or fast line can be drawn, and final conclusions must often be arrived at by a balance of evidence, and the result of individual judgment and experience.

In dealing with the genus Crocus several such questionable cases presented themselves to me, and I should like to briefly refer to some of them.

I do not think that the case of Crocus sativus, with which I have grouped several forms, heretofore supposed to be species, is open to much question, because there is no marked line of demarcation between them, and no single character, size and stature excepted, by which they can be distinguished; and even as regards stature, they pass into each other by insensible gradations.

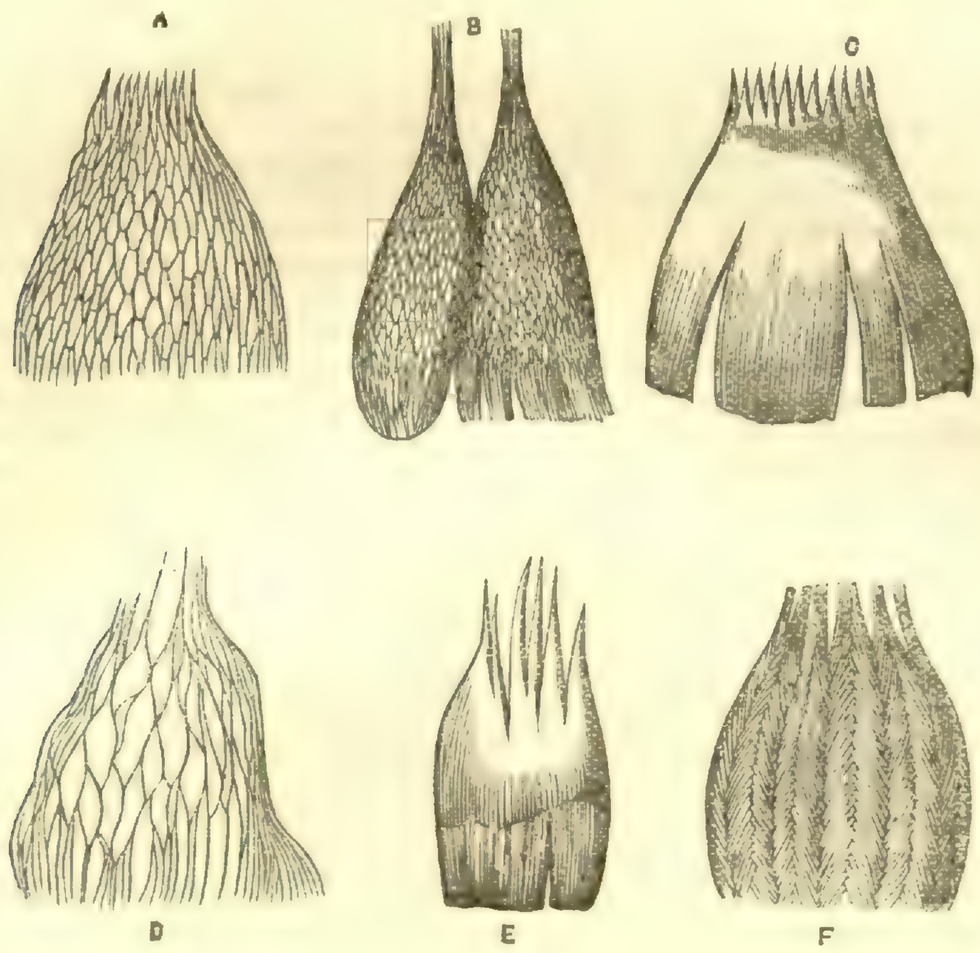

Fig. 45.—ILLUSTRATIONS OF THE VARIATIONS IN THE SKIN OF THE CORM IN THE GENUS CROCUS.

A, the main tunic of Crocus Sieberi; B, ditto of C. sativus var Pallasii; C, ditto of C. serotinus; D, ditto of C. carpentarius; E, ditto of C. versicolor; F, ditto of C. Fleischeri.

Crocus hadriaticus and C. sativus.—The question of separating C. hadriaticus from C. sativus troubled me, and I was in doubt why C. hadriaticus should not be viewed as an albino of C. sativus. It is most important to distinguish the occurrence of albinism in some species from the essential white colouring of others, for whilst most of the cyanic species have occasional albinos, I know of no white species which varies with coloured flowers. Albinism is often most perplexing in the determination of species, and in the case of the albinos of C. chrysanthus and C. biflorus, I know of no means of distinguishing them; to all appearance they are precisely alike, and yet they are clearly the white forms of two distinct species. All the forms of sativus (except the cultivated Saffron), have white varieties, generally one in ten or twelve, intermixed with the type. C. hadriaticus occupies a compact and limited district, and I am not aware that its normal white flowers ever vary to lilac or purple, and moreover it has its own set of varieties, some with a purple throat, others with a bright golden-yellow throat, and this latter departure from the type is never found in C. sativus: it was a difficult point to decide, but on the whole I thought it best to endorse the opinions of those who have written upon Crocuses before me, and to follow Herbert and Baker in separating C. hadriaticus as a species distinct from C sativus.

C. Olivieri, C. Aucheri, and C. Suterianus.—I think it would have been preferable to have grouped all these three, which have heretofore been considered entitled to specific rank, as forms of one species instead of my two species, Olivieri and Suterianus.

C. vitellinus and C. Balansæ.—Under C. vitellinus I have grouped three previously acknowledged species, including with it C. syriacus and C. graveolens, but I am inclined to retain C. Balansæ as a distinct species: it flowers two or three months later than C. vitellinus, though generally occurring at lower elevations, and occupies a far-removed geographical district, the leaf-structure of the two species is notably different, and the foliage of C. Balansæ is remarkable for its persistency, lasting green up to the autumn. The corms also differ, and the exceptionally small pollen of C. vitellinus is a distinctive character not to be overlooked in connection with the constancy in size of the pollen grains of all the species (C. sativus only excepted).

C. veluchensis and C. Sieberi are, I think, entitled to separate specific rank; the latter has always an orange throat, and its remarkable corm tunic, cannot be mistaken for any other species (fig. A). C. veluchensis has a bearded throat, the throat of C, Sieberi is unbearded.

C. reticulatus and C. dalmaticus.—These are doubtless allied; but there are several good distinguishing points, and if the absence of a basal tunic in C. dalmaticus is constant, it is a specific character not to be overlooked. C. dalmaticus is a much more robust species, and quite different in habit to C. reticulatus.

C. Crewei and C. biflorus,—C. Crewei is, I think, a black-anthered variety of C. biflorus, and this is the view I have almost expressed in what I have written about it.

C. Malyi and C. versicolor.—I cannot agree to associate these two species in any way. There appears to me to be no resemblance or affinity between them, and they occupy distant and separate areas. C. Malyi never varies from white except at the throat, which is orange and bearded. The throat of C. versicolor is unbearded, and nearly white. The tunic of C. Malyi is reticulated towards its summit, which is never the case with C. versicolor (fig. E). The spherical polished seed of C. versicolor is unlike that of any other species. C. Malyi has a red, papillose, oblong seed.

C. Boryi, C. Tournefortii, and C. veneris.—I think C. veneris might be placed as a small geographical form of C. Boryi; but C. Tournefortii is, I think, a distinct species, differing from Boryi in its constant purple flower-colouring, its hairy filament, and in other characters.

C. montenegrinus and C. vernus.—I do not think that C. montenegrinus is even allied to C. vernus. I admit that the stigmatic appendage to the anther, though curious as a constant feature, is of no importance for specific determination, because it is merely a case of morphosis occasionally occurring in other species, but the throat is distinctly orange, and as far as I could observe in the dried specimens, unbearded, and the stigmata are quite unlike those of C. vernus.

C. mæsiacus, Ker, = *C. aureus*, Sibth. and Smith.—I have never seen any wild varieties of C. mæsiacus except an occasional variation to orange in the colour of the stigmata; but the existence of so many old horticultural forms departing much from the type, which are not known to occur wild, and the history of which is unknown, is very curious.

The Spanish autumnal species are all nearly related, and are not easy to deal with separately; C. serotinus and C. Salzmanni are not far removed, but the very large corm of C. Salzmanni, its distinc-

tive tunic, and some other characters, seem to me sufficient for specific separation.

C. granatensis, of Boissier, I have but briefly referred to, and have expressed a doubt about its being specifically distinct from C. nudiflorus. The two plants are geographically isolated, neither of them occurring in central Spain. Boissier (*Voyage Botanique in Espagne*) originally described the south Spanish plant as C. nudiflorus, and must have afterwards observed some distinguishing point as a reason for renaming it granatensis. The corm is much larger than that of C. nudiflorus, and does not produce stolon growths, and each point of growth often produces more than one flower, which is never the case in C. nudiflorus. C. granatensis agrees with C. nudiflorus in the leaves being dormant and undeveloped at the flowering time, and this occurs in no other Spanish species. *George Maw, F.L.S.*

[The figures 43 to 45, taken by permission from Mr. Maw's Monograph, illustrate the variation met with in the rind of the corms of various species of Crocus. Ed.]

ROMULEA MACOWANI.

This plant, for an illustration of which (fig. 42, p. 180) we are indebted to the pencil of Mrs. Davidson of Wernoleu, near Ammanford, is a representative of a class of bulbous plants that is just now receiving the attention of our best cultivators, with a view to their being more largely grown in the open air. Many difficulties are, however, in the way of even ordinary success, and one of the most important is the fact that these bulbs begin to grow, and would under ordinary circumstances, flower during our late winter and spring months, and so far as our own experience goes at present, there are no means of this being satisfactorily accomplished without the aid of artificial protection of some kind. Various modes or plans have been tried, and a great many have been from time to time suggested, and no doubt as their requirements become more generally understood, ways and means will be found of making them more acceptable to those not in possession of glass structures or other means of shelter. In any case, however, a border in front of a south wall will be found to be the most favourable situation in which to try them, and the plan, in the absence of a proper frame, of portable glass lights or coping, covering the border sufficiently to throw the moisture off, is, to our mind, well worthy consideration. The lights will only be required during the resting season, and in spring, to ward off excessive moisture, &c. In one or two of the London nurseries Cape bulbs of various kinds are grown in low wooden frames with deal covers in the place of lights for protection in severe weather; but in cases of prolonged severity this will perhaps be found objectionable, as all the light possible at that season is required to build up the young leaves, &c. The majority of them, however, including R. Macowani, will be found amenable to ordinary greenhouse treatment, if the risk of the open air is considered too great, and as they require comparatively little attention they will recommend themselves to all lovers of bulbous plants. A large number of them are really very handsome, and as they continue a considerable time in flower they will be found very acceptable for conservatory or greenhouse decoration during the winter and spring months. The drying off season, of which the bulbs themselves will give warning, will have to be attended to; no water is required during that time, and a position where they can get abundance of sunlight will be best for them. R. Macowani is certainly an acquisition, and is only of recent introduction to our gardens. It is said to be plentiful in the eastern Cape provinces, and also on the Boschberg, at 4500 feet elevation. The lower or basal leaves are sickle-shaped, rigid, irom 6—9 inches long, and about half a line broad, the edges of which are rolled together, or convolute. The flower-stems are very short, one-flowered, or forked from the base with 2—4 short erect branches; flowers about an inch in diameter, bright golden-yellow in the lower part, lighter upwards, and often tinged with red towards the tips. A charming and very valuable addition to our collections of Cape bulbs, and it was first named and described by Mr. Baker in the *Journal of Botany* for 1876, p. 236. The hardier section of Romuleas belonging to the Mediterranean regions are also worthy our attention; they are hardy in our gardens in well-drained rather sheltered positions, and as they enhance our rockeries and borders in the early spring no collection of bulbs can be considered complete without them. R. bulbocodium, ligustica, crociflora, ramiflora, columnæ, purpurascens, elongata, and varieties, are among the best known. [In addition to the sketch Mrs. Davidson was good enough to forward a well-grown plant. Ed.]

PLANTS AND THEIR CULTURE.

POTTING OPERATIONS.

Many plants will require repotting during the present and ensuing months, and providing the weather remains mild, it will not be advisable to delay the commencement of this work much longer. Young plants of Allamandas and Bougainvilleas that have been recently cut-in, and had the soil moistened, should have their roots reduced in compass and a shift into larger pots. Large specimens which it is undesirable to allow to grow much larger should likewise be treated in a similar manner and transferred to clean pots. The compost that suits them best is a mixture of sound fibry loam, with a fair amount of sand and decomposed manure; it should be rather dry when used, and be well rammed. Clerodendron Balfouri, and the shrubby varieties. C. fallax and C. fragrans fl.-pl., require similar compost, as does Cissus discolor.

Dipladenias and Ixoras.

Dipladenias are weaker growers than the above, and should be potted in good fibry peat, well mixed with sand; they need thorough drainage and very careful watering until free root-action takes place, and at all times are impatient of careless watering. Ixoras that were not repotted in the autumn will be benefited by an early shift; these also succeed best in fibry peat and sand, which should be firmly rammed. Like the Dipladenia, the Ixora delights in a high temperature and abundance of atmospheric moisture. In order to make well-furnished young specimens, the growths should be stopped soon after the plants begin to grow.

Anthuriums and Alocasias.

Anthurium Scherzerianum and its varieties may either be potted now, or after their season of flowering. All are moisture-loving and surface-rooting plants, and may be placed in well-drained pans or pots; if the latter are employed they should be at least half filled with drainage. In potting raise the collars of the plants well above the rims of the pots, and work the compost—(lumpy peat liberally mixed with sand, broken prorous bricks, and charcoal)—carefully amongst and over the roots. A. Andreanum, which is seldom out of blossom, and A. Ferrierense should receive similar treatment. The ornamental foliage kinds, iucluding such varieties as A. Veitchii, A. regale, A. crystallinum, A. magnificum, &c., should be afforded large pots and liberal treatment. The compost that suits the flowering section will also answer for these, but being luxuriant growers less drainage will suffice. Most of the Alocasias, comprising A. Lowii, A. Veitchii, A. intermedia, A. Sedeni, and A. Thibautiana, succeed in the compost recommended for Anthuriums, to which they are closely allied; A. macrorhiza variegata and A. zebrina should, however, be potted in fibry peat and loam mixed with sand. All the varieties require a moist high tempereture with liberal supplies of water during their season of growth, and their pots must be well drained.

Seed Sowing.

Seeds of the under named plants may now be sown in well drained pans placed in a stove temperature, with a square of glass over each pan, which should be removed as soon as the plants appear, when the pans should be placed in a light position to prevent the plants becoming drawn. Pot the seedlings early, and keep them near the glass:—Begonias impatiens Sultani, Gloxinia, Isolepis gracilis, Rivina humilis, Grevillea robusta, Aphelandras, and Amaryllis; during recent years, the last named genus has received many additions of improved kinds, and seeds of good strains can now be obtained from trustworthy sources. *Thomas Coomber, The Hendre Gardens.*

THE HARDY FRUIT GARDEN.

ARREARS OF PLANTING AND TRAINING

Doubtless through the severity of the weather through much of last month some portion of the planting of trees will remain to be done, especially in large gardens, and this should be completed at once. The training of wall trees will require immediate attention; Plums on east walls may be safely left to be operated on latest of all, these being the latest to open their flower-buds.

Apricots.

There should be no longer delay in getting these pruned and trained at once, so that the work may be finished before the buds become too forward. Where the old spurs are numerous and long, a few ought to be cut away each year to preserve the symmetry of the trees. If means of protection are not at hand no time should be lost in procuring some. Frigi Domo is found to be one of the best coverings for wall trees, and will last several seasons with care; the other materials wanted are poles to keep the covering away from the wall, the trees, and boards to which to fasten it. It must be fixed under the coping of the wall, and should be drawn up during the day, except during very inclement weather when the trees are in bloom; and moreover no covering should be put over the trees for protection till the blooms expand generally.

Figs.

These should be pruned and trained at an early date, and where they are protected a portion only of the covering should be removed at a time. In this garden the Fig trees are not protected through the winter, but we always obtain good crops of fruit nevertheless; the use of covering, we think, only makes the wood and embryo fruits more tender, and therefore more susceptible to frosts in the spring months. In pruning Figs, take care to thin out the shoots, and not shorten them, as the fruit is borne on the points of the shoots. If they have been properly attended to through the early autumn by stopping and thinning there will be but little in the way of pruning to do. *Edward Ward, Hewell, Bromsgrove.*

THE BULB GARDEN.

NARCISSUS CYCLAMINEUS.*

I have this interesting Narcissus now in flower from bulbs collected by Mr. A. W. Tait in the neighbourhood of Oporto, where it was discovered by Mr. Edwin Johnston, flowering at the end of July and early in March. The earlier figures accurately represent the plant, which has been lost sight of for fully 200 years. The suddenly reflexed segments are of the same or nearly the same colour as the exceptionally long corona, though the individual flowers somewhat vary in the depth of colour. *George Maw, F.L.S.*

—— This name was given by Haworth in his enumeration of the genus Narcissus to a Daffodil, which he adopted from Rudbeck, who figured it and described it as "the lesser yellow Spanish Daffodil, with a large cup and reflexed petals." Dean Herbert

* Parkinson, *Theatrum Botanicum*, anno 1640. Narcissus hispanicus minor amlo calice, foliis reflexis: No. 47, Jardin du Roy, anno 1623. Narcissus hispanicus minor, luteus amplo calice foliis reflexis; plate 20, *Theatrum Flore*, anno 1657. Narcissus minor cyclamineus, Haworth.

(*Amaryllidaceæ*, p, 306) disposes of it as "another absurdity which will never be found to exist. I have no hesitation in rejecting it as a nonenity." Nevertheless a Daffodil answering to Rudbeck's description and not unlike his figure (a copy of which was sent by Mr. F. Burbidge to the *Gardeners' Chronicle*, in November, 1885) was found in some abundance last spring near Oporto by Mr. Alfred Tait. Flowers of it were exhibited to the Narcissus Committee last March. Some bulbs kindly sent to me by Mr. Tait are now flowering in my greenhouse, from which I enclose a specimen. An opinion has been given that it may be a hybrid between N. triandrus and some form of Trumpet Daffodil. On this I give no judgment at present, but the flower shows some very remarkable and distinct characters. In the first place the tube is almost entirely absent, the crown and perianth growing immediately out of the ovary. The club-headed broad triple stigma resembles that of Pseudo-Narcissus, and so do the anthers, which are pressed against the style and uni-serial. The corona is very long, deeply lobed, and slightly curved at the mouth, resembling in this respect N. p. minor of the Maritime Alps. The only character in which the flower resembles that of N. triandrus are the sharply reflexed segments, which are all bent back until they meet in a point, and the sudden contraction of the corona at its base. The leaf, which is nearly flat on the inside, has on the back two conspicuous ridges enclosing a deep channel, deeper than I have seen in any form of N. triandrus, though in other respects some of the larger varieties of the Portuguese triandrus have similar leaves. Mr. Tait informs me that it is not found intermixed with other species of Narcissus, but seems to hold an independent position. It also produces seed very freely, and some seed collected and sent by Mr. Tait last summer is already growing. *C. Wolley Dod, Edge Hall, Malpas, Jan.* 31.

—— This plant is now in flower here in a cool greenhouse. I have promised to send Mr. Baker the flowering plant, as the thing has never yet been properly described, &c. The woodcut (fig. 46) represents it well.

Home Correspondence.

THE QUEEN'S JUBILEE.—The suggestion set forth by "O. T." in the *Gardeners' Chronicle* of the 22d ult., is worthy of being carried into effect; the amount of subscription, ranging from 6*d*. to £1, gives every one a chance of showing his loyalty and attachment to her most gracious Majesty the Queen on the coming of such an auspicious event as June 20. The proposed Queen's Jubilee Prizes would tend to enhance the culture of horticultural subjects. The suggestion made in the issue of the 29th is also an admirable one. An established Horticultural Institute the same as described would satisfy a long-felt want. There are agricultural colleges where agriculture is aided by scientific and chemical professors, yet horticulture has no such institution to further its advancement. I should advocate the adding of "O. T.'s" suggestion to the proposed institute, and I have no doubt our employers, friends, &c., who are ardent lovers of horticulture, would contribute liberally towards such a scheme. So let us all put our shoulders to the wheel, and give a long pull, a strong pull, and a pull altogether. *James Hewett Phillips, Curator of Public Parks, Swansea.*

BULB DISEASE AND ARTIFICIAL MANURE.—The object in view in writing upon this subject is rather to elicit information than to establish facts. My own experience in the use of the above has settled the question in my own mind, that artificial manure predisposes bulbs to disease. I have tried several kinds; the first year the result has been favourable, the second year not so healthy, the third year disease. We frequently hear and read of the new disease among Eucharis. In several cases I have found they were healthy till watered with one of the many new forms of manure. My own plants are healthy, never having been treated with manure, but fed occasionally with the good old-fashiond liquid from cow-manure, which is mild, stimulating, and safe, if used rightly. The bulbs and tubers which have suffered are the following:—Achimenes, Gloxinias, Pleiones, Cœlogynes, and Calanthes. In Calanthes, the disease, to all appearance, by smell and look, is similar to the disease in the Potato. Artificial manure and guano, in my opinion, have much to answer for in being the first cause to develope that disease some forty years ago. For years I have been very successful in growing the Calanthe, having several hundreds in rude health till watered as stated, when the evil at once appeared. I have now for two years gone back to my old plan, and again have a healthy stock. I refrain from stating the kinds of manure used, as I have no wish to injure any maker but simply state my own experience, and if others will do the same we shall probably arrive at the cause of the trouble, and save ourselves much perplexity and loss. *Henry Snow, Blackheath.*

PEAR AND APPLE GROWING.—It is to be hoped that your excellent leader on the cultivation of Apples and Pears will stir up the gardening public

Fig. 46.—Narcissus cyclamineus: segments pale yellow, cup deeper yellow.

to greater efforts in the direction of growing a larger proportion of late keeping varieties of the best quality in the most profitable manner. Conditions of climate and soil vary so much in different parts of country, that it seems most desirable that local shows and conferences should be held in order to ascertain the most prolific and best kinds of fruit for each district. It is intended to hold such a show and conference at Chester, in the first week in March, under the auspices of the committee of management of the Grosvenor Museum, which it is hoped will lead to good results, both as regards the quality of fruit grown and the mode of cultivation in Cheshire and North Wales. *Alfred O. Walker.*

DWARF BOUQUET AND DWARF GERMAN ASTERS.—Glancing through my note-book of the past year I am reminded of two quite noteworthy varieties of German Asters which came under my notice. Dwarf Bouquet is a perfect gem to grow as an edging plant for large borders devoted to flowers of a miscellaneous kind. Its height when in full bloom averages 6 inches, and the head of bloom is composed of numerous small flowers so densely grown together as to represent (only less stiffly) a bouquet of Asters manipulated by a bouquetist. The blooms, commencing quite at the ground-line, rise conically to the apex. The second dwarf variety, named Dwarf German, averages, when in full bloom, 8 or 9 inches in height; the flowers are less numerous and much finer than those of the first-named variety both in size and quality. It is well adapted for planting as an edging to taller forms of Asters, each is sold by the seedsmen in a variety of colours, and a good assortment will give flowers that in the late summer have a charming effect. *William Earley.*

TITHES.—In an account of a meeting at Rochester reported in your columns, the statement was made that tithes belonged to the State, and therefore ought to be devoted to State uses. I should be obliged if any of your readers would point out any Act of Parliament which gave the tithes to the Church. They were in point of fact given by individuals to the Church, and all that the State or the Parliament has ever done has been to secure to the Church those endowments which were given by such persons in the same way that she secures to any individuals or corporate bodies the monies which have been given to them; in fact, as Mr. Toulmin Smith, a Nonconformist barrister, has stated, "So far is the State from supporting the Church of England, that every parish in England was founded not by the State, but by landed donators in ages past." *East Kent Vicar.*

A DRESSING FOR PEACH AND NECTARINE TREES.—I have used the following composition for many years; it destroys all insects, mildew and disease, &c., without injury to the buds in any way:—2 lb. of tobacco-powder, 1 lb. of flowers of sulphur, 1 oz. of nux vomica powder, 2 lb. of clay, ¼ lb. of soft soap, with sufficient boiling water to make it the thickness of paint; well mix and stir up before using, then paint the Vines and trees all over. *Wm. Smythe, Basing Park, Alton, Hants.*

WHY DO FOOTPRINTS REMAIN ON A LAWN AFTER SNOW?—When the snow falls upon the grass in light flakes, and to the depth of a few inches, it does not appear materially to bend down the blades of the finest grass; and there is no doubt, unless the ground be previously rendered hard by frost, that a slight thaw takes place in the case of the lowermost flakes, and a kind of vacuum between the snow and grass is created; and gardeners find by experience that snow is an excellent protector from frost, and let the latter be ever so severe, it takes some time to get through 3 or 4 inches of snow. But when one walks over the snow, it is trodden down firm in a solid compact mass, so that if frost follows, it becomes a block of ice. It is in my opinion the contact of the frozen snow with the grass that causes the discoloration that ensues. The weight of the human body presses it firmly down upon the grass, fracturing the blades, and frost turns them brown. That is my theory, but it may be that a better one can be propounded. *R. D.*

DAPHNE INDICA RUBRA.—It has been said of this plant, "If as much root-room is given them as required by many things, it is all but impossible to keep them in health." I must confess that I recently read this with some surprise, because Mr. Roberts has this Daphne planted out in the centre bed of his Rose-house at Gunnersbury Park, where it does admirably, and flowers in great profusion. The vigour seen in the plants is the best indication that the treatment suits them exactly. The bed is within a brick pit, raised somewhat above the level of the floor, with Camellias and other things planted out in it, and to all appearance nothing can be more satisfactory. The general rule in regard to this plant seems to be to restrict the root space; and keep the roots fairly dry even when making active growth. Mr. Roberts has reversed these two conditions, and is rewarded with vigour and floriferousness. *R. D.*

A NEW ATHYRIUM.—Mr. W. Wilson, Hillock, Terpersie, Alford, Aberdeenshire, has made a very interesting discovery of what has been pronounced to be a new Fern. He found it first some four years ago, near a stream at the Coreen Hills; took it home, and watched its development. In 1884 he sent it to Kew Gardens, where it grew, and was examined by Mr. J. G. Baker, F.L.S., Kew Herbarium, one of our greatest authorities on Ferns. Mr. Baker reported that the fronds were intermediate, between forms of Lady Fern known as rhœticum and crispum. The finder also sent fronds of the first garden crop, which kept the same form as when found, to Mr. William

Carruthers, F.R.S., the head of the Botanical Department, British Museum; Professor of Botany of Cambridge and Oxford; as well as the Botanical Society of Edinburgh, and to Professor Trail, Aberdeen University. In no case had exactly the same form been seen in the museums in the towns to which the fronds were sent. The extreme form of the Fern has now been examined by Mr. Wollaston, of Chiselhurst, who has made varieties of British Ferns a special study. This gentleman saw in the Fern an approach to different forms of the varieties of the Lady Fern, and declared it to be a thoroughly good and new find, suggesting as a name for the plant Athyrium Filix-fœmina var acroclodon Wilsoni (Woll.). *W. K.*

LUCULIA GRATISSIMA.—A specimen of this, planted out on a raised border against the north wall of the Rose-house at Gunnersbury Park, is now freely flowering. The plant covers a good space of wall, but the temperature of the house is by no means high, yet it does remarkably well. It is a plant that requires plenty of root-room, and it appear to be impatient of too much cutting back. *R. D.*

MANURES FOR VINES AND PEACHES.—For Vines and Peach trees I mix the following materials in the following proportions:—4 bushels of fresh lime, 10 bushels of good fresh soot, 20 bushels of wood ashes, 2 cwt. of guano, or 6 cwt. of night-soil. Put water on the lime to slack it, then carefully mix all the materials well together, and as soon as it has got well heated turn it over three or four times, when it is fit for use. Put the mixture about 1 inch thick all over the Vine borders, both inside and out, and then lightly fork it in. After this operation give the inside a good watering with diluted liquid manure. I give my Vine borders a dressing every year with this manure as soon as the Grapes are cut, and have used this first-class fertiliser for many years with the best results. It destroys insects in the soil and prevents mildew. *W. Smythe, Basing Park.*

FOREIGN CORRESPONDENCE.

NATURAL HISTORY DRAWINGS. — When the number of the *Gardeners' Chronicle* of January 22 reached me, I had that morning examined the collection of natural history drawings of Frederik Müller & Co.'s sale at Amsterdam (see p. 113), and as I looked more specially at the bulbous plant drawings, I can give some particulars as to the Hyacinths of that collection which may interest your readers. Of H. Budde (1729) there are three drawings of Hyacinths, a double, whitish with red centre—Rose Invincible; a double light blue with dark centre—Victor Amadeus; and another, light blue with greenish centre on bluish paper—Margraf Carel van Baden Durlach. All these Hyacinths are very double, as these old varieties used to be in many instances, and as those of the present time are represented, by the double blue Van Speyck. Rose Invincible and Victor Amadeus are named in Saint Simon's catalogue of 1767, and in George Voorhelm's lists of 1752-1762, and 1773. Marcgraf Carel van Baden Durlach was probably already scarce in its time, as it is not found in any of these lists. These three varieties have not been in cultivation in the time I can remember. Another lot of the sale comprises five Hyacinth drawings from Jacobus Augustini, from 1761 and 1762, viz., two unnamed, a double yellow and a double blue one; and further, double white Grand Monarque de France, still found in many collections; double blue Gloria Mundi, still in cultivation, but very scarce; double blue Franciscus Primus, in cultivation in the present century, but probably now abandoned generally; double red Rex Rubrorum, still here and there in cultivation. Then there are seven water colour drawings of the Haarlem painter, Pieter van Loo, signed 1768-1770, viz., a double red, unnamed; double white Duc de Berry, still to be found in some collections, perhaps; double blue Globe Celeste, still here and there in cultivation; double red La Beauté Supréme, perhaps now totally lost; double yellow Ophir, the once so highly priced variety, still generally known; double white Erfprinz van Nassau Weilburg, very scarce now, if not totally lost; and double white Flave superbe, with a greenish centre, which I do not remember to have found in any collection, but which is named in Saint Simon's list. These are the Hyacinth drawings of the Amsterdam sale collection. As some of them are yet in cultivation, or at least were so in the remembrance of older Hyacinth growers. I always see the old drawings of those very double Hyacinths with much interest, and I regret their cultivation has been so much neglected, as they are good for open ground culture, *i.e.*, for specimens on parade beds; some open with difficulty in our climate, and give only a regular good succession in southern regions—as in Italy, where were many amateurs for such flowers in a former century; I suppose, there, these sorts generally must have been splendid. I possess in my collection a good number of such Hyacinth drawings from H. Budde, Pieter van Loo, Jan van der Vinne, Vincent van der Vinne, Jan Augustini, H. Schwegmann, N. P. Eisenberger, Al. van Beerten, G. D. Ehret, and others. Perhaps, if time permit, I may give a more minute description of them on some occasion or other. *J. H. Krelage, Haarlem, January 22, 1887.*

SOCIETIES.

NATIONAL CHRYSANTHEMUM.

January 31.—The annual general meeting of this Society took place at the "Old Four Swans" Inn, Bishopsgate Street, E.C., on the above date, Mr. R. Ballantine, Vice-President in the chair, in the absence of the President, a large number of members being present. The Hon. Secretary, Mr. W. Holmes, read the balance-sheet, showing that the total receipts for the past year had been £594 19*s.* 4*d.*, including £231 15*s.* 1*d.* from the Royal Aquarium Company; annual subscriptions, £132 15*s.*; and donations, special prizes, &c., £56 9*s.* The expenditure amounted to £594 19*s.* 4*d.*, and of this sum £327 18*s.* 6*d.* was paid in prizes. The deficit of £14 11*s.* 1*d.* on the 1885 account is now changed to a balance of £7 4*s.* 1*d.* in hand, the total amount of the reserve fund being £68 5*s.* 4*d.* The report was of a particularly gratifying character, and sets forth that "For the first time three shows have been held, and each in its way fully justified the new departure. The September show was a source of great interest, not only to growers of Chrysanthemums, who thus had an opportunity for the first time of comparing the merits of the best of the early-flowering varieties, but also on account of the excellent show of Dahlias and Gladioli, which were exceptionally fine; and the committee hope that in 1887 this show will assume still larger proportions. Of the November exhibition it is only needful to state that it excelled that of any previous year, both as to number and quality of the exhibits, The January show, in spite of the severity of the season, brought exhibits and visitors from all parts of England; and it was a generally expressed opinion that, in promoting this exhibition, the Society was doing a most useful work, as it clearly proved that the season for Chrysanthemums could be satisfactorily prolonged during mid-winter."

"During the year a new Catalogue of Chrysanthemums has been issued, which has been well received in all quarters, and the best thanks of the Society are due to Messrs. Addison, Davis, Payne, and Springbett for the time and care they had devoted to its preparation."

"Arrangements have been made with the Royal Aquarium Company for again holding three shows. This entails a severe strain upon the resources of the Society, and the committee trust to the liberality of all lovers of the Chrysanthemum to subscribe to the prize fund, or to become members, as it is only by continued and united effort that the usefulness of the Society can be maintained."

The balance-sheet and report were adopted, with thanks to the Auditors for their services. Fifteen new members were elected, and application from four societies for affiliation. Mr. E. Sanderson was re-elected President, Mr. R. Ballantine, Vice-President: Mr. J. R. Starling, Treasurer; and Mr. W. Holmes, Secretary and Superintendent of the Shows. The general committee, numbering thirty-six members, was then elected out of fifty candidates, and it was resolved that for the future one-third of the body only should retire annually, being eligible for re-election. The Secretary announced several special prizes for the current year; and the special prize fund amounted to nearly £50. A special sub-committee was appointed to arrange the schedule of prizes and suggest dates for the exhibitions. Several suggestions were made for the improvement of the schedule, and these were referred to the schedule sub-committee. The proceedings closed with a hearty vote of thanks to the Chairman.

ROYAL BOTANICAL OF MANCHESTER.

Annual Meeting.—The fifty-ninth annual meeting of the proprietors of the Botanical Gardens at Old Trafford was held yesterday, in the Mayor's parlour at the Town Hall, the Mayor (Mr. Alderman Curtis) presiding. The report of the Council, which has been already published, was taken as read.

The Mayor, in moving the adoption of the report, said the report was in some respects satisfactory, but in one important respect it was a little unsatisfactory, because it showed that the debt had increased. That was due to an expenditure of something like £2000 in the erection of the new Palm-house. He presumed, however, the proprietors were all agreed that the Council had done right in spending this amount of money, because if they had not done so a larger number of valuable plants would have had to be parted with or put aside. Another cause of the increase of the debt was the diminution in the receipts from the various shows, in consequence of the bad weather.

Mr. Samuel Barlow, in seconding the motion, said the real cause of the unfavourable position of the Society, as shown in the balance-sheet, might be given in two words—bad weather. The result was an addition to their liabilities of £1733 2*s.* As a set-off against that they had the new Palm-house. The expenditure on the Palm-house would, he thought, complete their expenditure for a long time to come. Something like £8000 had been spent during the last twelve years, and the gardens were now in a wonderful state of efficiency. The contents of the Palm-house would be of great beauty, and would form one of the leading attractions of the gardens during the forthcoming Jubilee Exhibition.

Several gentlemen having called attention to the rights of shareholders and subscribers with reference to free entrance into the gardens,

Mr. Bruce Findlay (Secretary and Curator) replied that the ticket arrangements between the executive of the Jubilee Exhibition Committee and the Botanical Society had been left in the hands of Sir Joseph Lee, representing the former, and Mr. Broome representing the latter. Both of these names would, he was sure, inspire confidence, and there could be no doubt but that the result of their co-operation would be for the benefit of all concerned. Mr. Broome had taken a great deal of trouble in connection with the matter, and had been throughout sensitively anxious on behalf of the interests of the Society. The matter stood thus:—Life members, proprietors of, and subscribers to the Botanical Gardens would receive two Jubilee Exhibition tickets having the same privileges and subject to the same conditions as a first-class season ticket issued by the Executive Committee of the Exhibition, besides which they would receive a Botanical Society's ticket for each resident member of their family, giving admission to the four exhibitions to be held in the Town Hall and for the grand Horticultural Exhibition to be held on a plot of land near the Old Trafford Railway Station at Whitsuntide. There were no strivings between the Executive Committee and the Council of the Botanical Society but the striving together to make this gigantic affair a credit to our city. He had seen all the great exhibitions since the famous one in Hyde Park in 1851, and it seemed to him that in many important features our Manchester Exhibition would excel them all, and he was sure that it would be a source of satisfaction and pleasure to the proprietors of the Botanical Gardens to know that their property contributed in no small degree to this result.

After some further discussion, Mr. A. H. Gilbody moved, and Mr. J. France seconded, a motion in the following terms:—"That this meeting is of opinion that the arrangements made by the Council with the committee of the Jubilee Exhibition will not be satisfactory to the proprietors unless the season tickets granted to them shall admit the holders on all occasions."

The Mayor said that, according to his reading of the agreement, the Exhibition Committee were acting quite within their power in what they had done.

Mr. Gilbody was appealed to to withdraw his motion, on the ground that the passing of it would show a lack of confidence in Sir Joseph Lee and Mr. Broome, but Mr. Gilbody declined to withdraw, stating that he thought the opinion of the proprietors would have some weight with the Exhibition Committee.

On a division the motion was carried by a considerable majority.

On the motion of Mr. Robert Tait, seconded by Mr. Thomas Smelt, a vote of thanks was passed to the retiring Council for their services during the past year. On the motion of Mr. A. K. Dyson, seconded by Mr. Gilbody, officers were elected for the ensuing year. A vote of thanks to the Mayor for presiding and for the use of his parlour brought the meeting to a close.

THE WEATHER.

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 42° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature.				
	Above or below the Mean for the week ending Jan. 31.	Accumulated. Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 4, 1887.	Below 42° difference from Mean since Jan. 4, 1887.
Principal Wheat-producing Districts.		Day-deg.	Day-deg.	Day-deg.	Day-deg.
0. Scotland, N. ...	7 above	26	5	+ 16	— 24
1. Scotland, E. ...	10 above	34	1	+ 25	— 17
2. England, N.E. ...	5 above	28	11	+ 13	+ 6
3. England, E. ...	3 above	15	32	— 7	+ 33
4. Midland Cos. ...	5 above	32	14	+ 4	+ 23
5. England, S. ...	3 above	27	16	— 2	+ 14
Principal Grazing, &c., Districts.					
6. Scotland, W. ...	7 above	30	0	+ 18	— 13
7. England, N.W. ...	4 above	25	6	+ 4	+ 8
8. England, S.W. ...	4 above	30	3	— 9	+ 1
9. Ireland, N. ...	6 above	38	0	+ 20	— 12
10. Ireland, S. ...	6 above	45	0	+ 10	— 7
— Channel Islands	2 above	27	0	— 14	— 4

Districts.	Rainfall.			Bright Sunshine.	
	More or less than the Mean for the Week.	No. of Rainy Days since Jan. 4, 1887.	Total Fall since Jan. 4, 1887.	Percentage of possible duration for the Week.	Percentage of possible Duration since Jan. 4, 1887.
Principal Wheat-producing Districts.	Tenths of Inch.		Ins.		
0. Scotland, N. ...	8 more	20	5.4	0	7
1. Scotland, E. ...	4 less	15	2.2	?	?
2. England, N.E. ...	4 less	14	1.6	24	18
3. England, E. ...	4 less	12	1.3	35	19
4. Midland Cos. ...	4 less	13	2.0	29	19
5. England, S. ...	5 less	12	1.8	25	18
Principal Grazing, &c., Districts.					
6. Scotland, W. ...	5 less	18	4.3	12	15
7. England, N.W. ...	1 less	15	2.6	32	18
8. England, S.W. ...	7 less	17	2.8	18	18
9. Ireland, N. ...	3 less	15	3.6	10	16
10. Ireland, S. ...	3 more	16	3.9	22	23
— Channel Islands	6 less	16	2.5	56	38

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING FEBRUARY 12. (AVERAGE OF THIRTY-THREE YEARS.)

February 6	39°.3	February 10	39°.1
" 7	39°.3	" 11	39°.1
" 8	39°.2	" 12	39°.0
" 9	39°.2	Mean for the week ...	39°.1

THE PAST WEEK.

The following summary record of the weather for the week ending January 31, is furnished from the Meteorological Office:—

"The *weather* has been unsettled and rainy in the extreme west of Ireland and the north and west of Scotland, but in all other parts of the kingdom the conditions have been more settled. Much fog and mist, however, have prevailed over England, and the atmosphere has been unusually damp generally.

"The *temperature* has been above the mean in all districts, the excess varying from 2° in the 'Channel Islands,' and 3° in 'England, S.,' and 'England, E.,' to 6° in Ireland, 7° in 'Scotland, N.' and 'Scotland, W.,' and to as much as 10° in 'Scotland, E.' The absolute maxima were generally very high for the season; at Herefard, at Stratfield Turgiss, the abnormally high reading of '60°' was recorded on the 28th, while as far north as Nairn the thermometer on the 29th reaehed 59°. In most other parts of the kingdom the maxima varied between 55° and 57°. The significance of these temperatures is shown by the fact, that the records of the maxima observed at Greenwich since 1841 show no higher reading in the month of January than 57°, which occurred in 1843, The lowest of she minima, which were recorded on irregular dates, ranged from 25° in 'Scotland, N.,' to 35° in 'Scotland, W.'

"*Rainfall* has been more than the mean in 'Scotland N.,' and 'Ireland, S.,' but less elsewhere. At nearly all the English stations a measurable amount of dew or wet fog was deposited in the gauge.

"*Bright Sunshine* has been more prevalent than it was last week, the percentages of the possible amount of duration ranging from 12 in 'Scotland, W.,' to 35 in 'England, E.,' and to 56 in the 'Channel Islands.' In 'Scotland, N.' (at Stornoway) no bright sunshine at all was recorded."

Obituary.

JAMES FIRTH WEST.—We regret to announce the death of James Firth West, aged sixty-five years, at the house of his son-in-law, A. H. Syrée, M.R.C.S., Northallerton, Yorkshire, on January 30. The deceased gentleman possessed several country residences, was a lover of horticultural pursuits, and was one of the auditors of the Royal Horticultural Society of London, having only a few days since completed his labours for the year, when he appeared to be in good health.

ENQUIRIES.

"He that questioneth much shall learn much."—Bacon.

Cedar Cones.—Can any one, from actual observation, tell me how long Cedar cones are before becoming perfectly developed? *A. D. W.*

Robinia clavata.—W. Foster would be glad to have tidings of Robinia clavata—probably a garden hybrid.

NOTICES TO CORRESPONDENTS.

Aquapult Pump. *G. M.* Write to Professor Riley, Government Entomological Department, Washington, U. S. A.

Books: *G. K. Gude.* You, doubtless, are thinking of *Les Plantes des Alpes*, by H. Correvon (Geneva: J. Carey, 3, Rue du Vieux Collège).

Cattleya Percivalliana and Twin-flowered Spike of Sophronitis grandiflora: *Heath & Son.* The first is a good ordinary flower; the twin-flowered Sophronitis is not common.

Correction.—In our previous issue, p. 146, second column, second paragraph, for "the commission is charged per bushel, and not per hundredweight or per pound," read for "hundredweight," cent., and for "pound," £.

Dictionary of Gardening: *H. E. G.* The one you named is the best of the kind published.

Evergreen Creepers for Roof of Ferneries: *E. Warner.* Hoya carnosa, H. imperialis, Stephanotis floribunda, Ficus repens, F. r. maxima, Allamanda of sorts, Philodendron laceratum, P. pertusum, Coffea arabica, Combretum purpureum—for warm fernery; Clianthus puniceus, Tecoma jasminoides, Camellias, Lapagerias, red and white-flowered; Trachelospermum jasminoides, Ivy-leaf Pelargoniums, and small-leaved Ivies—for cool fernery.

Fast-growing Showy Climbers for Greenhouse: *Thomas Taylor.* Passiflora exoniensis, P. kermesina, P. cœrulea, Fuchsia corallina, Abutilons in variety, Tecoma jasminoides, Hoya carnosa, Tacsonia manicata, Hibbertia perfoliata, Kennedyas in variety, Solanum jasminoides, Rhodochiton volubile.

Fruit-houses, &c.: *A Young Gardener.* If the structures will not be ready for the trees before April, the stone fruit trees ought to be taken up now and laid in behind a north wall. or other cold site till planting time. The Vines can be spread on rafts, and have their roots covered with a few inches of rich loam, and be started in March, and kept growing till planted out in May. The pots usually employed are not so good for young Vines as rafts, as the roots must be disturbed and uncoiled—two operations unnecessary with the latter method.

Forcing Spiræa japonica: *A. B.* Bottom-heatis not essential, the day temperature after present time may rise with fireheat to 80°, when air should be given—night temperature 60°. A slight amount to be given at top of house or pit, if that be possible.

Herbaceous Calceolarias: *E. M,* An article on this subject will appear in our pages next week.

Horticultural Occupation: *R. G. G.* It is impossible to answer your question satisfactorily. He might go into business, or try to learn his work at Kew or some public garden, or qualify for the Indian Forest Service. He might enter the Ghent School of Horticulture, but unless the youth has a decided bent for horticulture we cannot recommend him to take it up, as there is no regular profession open to him.

Lælia purpurata with Discoloured Sheaths and Roots Dry and Red-coloured: *G. H.* Probably the result of an ill-ventilated Orchid-house.

Lapagerias with Disfigured Leaves and Young Shoots: *J. B. B.* We can detect neither insect nor fungus on the material sent for inspection, and suspect the injury arises from some defect at the root.

Manures: *A Young Gardener.* Use one-eighth broken bones (½-inch), lime-rubble, charcoal in considerable quantities—the last two more or less, according to the nature of the loam employed. Put no chemical manures into a new border, these can be used later to revive its flagging fertility. A little manure in the form of rotten dung can be used with the Vines when planted. Mulchings of 2 inches in thickness should be given during the growing period.

Monstrous Cyclamen: *W. P. H.* Thanks; the peculiarity is not uncommon.

Mushroom Growing in the Open Air: *J. Pemby.* Yes, it pays well, but we cannot in these pages tell you how to proceed. Get Wright's *Mushroom for the Million*, published at 171, Fleet Street, London, E.C., price 1*s*. This little book will give you full instructions on the matter.

Names of Plants: *A. H.* Clematis calycina.—*W. T. C.* 1, Maranta Warscezwiczii; 2, Skimmia japonica variegata.—*A. P.* A Stelis, too much withered to recognise the species.

Peach Buds: *B.* Leaf-buds.

Peaches and Nectarines to Plant: *A Young Gardener. Peaches:* Hales' Early, Early Grosse Mignonne, Albatross, Noblesse, Red Magdalen, Chancellor, and Late Admirable. *Nectarines:* Lord

Napier, Pitmaston Orange, Pine-apple, Stanwick Elruge, Victoria. In a house where fire-heat is used merely to prevent the ingress of frost, four months, more or less, according to kinds, will be required to ripen the Peaches and Nectarines.

Soil Garlieston: *J. D. G.* A sandy loam, apparently derived from the breaking up of reddish sandstone rocks. The rock formation in your district belongs to the Silurian series.

Sorts of Vines for a Late House: *A Young Gardener.* Alnwick Seedling, Gros Colmar, Alicante, West's St. Peter's, Mrs. Pince, Lady Downe's, and Gros Guillaume. Black Hamburgh could likewise be grown in the house for timely use.

Tomatos with Knotted Roots: *J. K. L. D.* The plants appear to be affected with root worms, akin to those which commit havoc among Cucumber plants. We fear there is no remedy short of clearing out the plants and soil, and thoroughly cleansing the pit. Start with soil and manure from a different source, obtaining the new plants from a garden at a distance.

Tree Carnations: *T. C., Sevenoaks.* Your plants are affected with the leaf-worms described and figured in our columns in 1881, vol. xvi., p. 721. They probably come from the soil originally. There is no means of getting rid of them except by burning the plants.

Vine Borders: *A Young Gardener.* On your soil it will be better to put in a concrete floor at 2½ feet from the ground-level; not so much if the border is going to be raised. The other fruit borders must be well drained, but as the trees must be occasionally lifted there is no need to concrete them.

CATALOGUES RECEIVED.

Ralph Crossling, Penarth Nurseries, North Wales Seeds.

J. R. Box, 118, North End, Croydon—General Catalogue.

J. Vick, Rochester, New York, U.S.A.—Floral Guide.

W. P. Laird & Sinclair, 73, Nethergate, Dundee, N.B.—Vegetable and Flower Seeds.

W. Smith & Son, 18, Market Place, Aberdeen, N.B.—Seeds, Plants, &c.

C. Fidler, Reading, Berks—Vegetable Seeds and Seed Potatos.

Chas. Toope & Co., Stepney Square, Stepney Green, London, E.—Heating Apparatus, &c.

R. & G. Cuthbert, Southgate, N.—Vegetable and Flower Seeds.

Fisher, Son & Sibray, 4, Market Street, Sheffield—Vegetable and Flower Seeds.

R. W. Proctor, 4, Town Hall Buildings, Chesterfield—Vegetable and Flower Seeds.

William Bull, 536, King's Road, Chelsea, London, S.W.—Flower and Vegetable Seeds.

William Thomson & Co., 3, Melbourne Place, George IV. Bridge, Edinburgh, N.B.—Seeds, Implements, &c.

William Green, 44, Vicar Lane, Leeds—Garden and Agricultural Seeds, &c.

S. Dixon & Co., 34, Moorgate Street, London—Garden Seeds.

W. W. Johnson & Son, Bridge Street, Boston—Garden and Farm Seeds.

L'Etablissement Horticole Bruant, à Poitiers, Vienne, France—Plants.

Robichon-Loyer et Fils, Rue d'Olivet 7 and 9, Olivet, near Orleans, France—Azaleas and Roses.

Vilmorin-Andrieux & Co., 4, Quai de la Megisserie, Paris, France—General Seed and Bulb List.

V. Lemoine, Rue de l'Etang, Nancy, France—New Plants.

Thos. Imrie & Sons, 137, High Street, Ayr, N.B.—Garden Seeds.

Communications Received.—F. W. B.—G. C.—E. B.—Old Subscriber.—J. Dickson & Sons (received with thanks).—W. B. H.—A. D. W.—C. Y. M.—W. K.—T. W.—Sufferer.—J. H. H.—J. C.—T. Smith (New Zealand).—North Easter.—W. M. B.—D.—Lover of Orchids.—A. D. W.—T. S.—R. D.—G. N.—G. B.—J. W.—D. T. F.—E. B.—J. C. & Co.—W. & J., Birkenhead.—W. G.—F. W. B. (will read, and write).—C. R. S. D.—W. B. H.—Regnier.—H. E.—C. Kraus, Pardublitz.—G. M.—C. S. P., New York.—G. J.

DIED, on the 28th ult., at Mothel Rectory, Carrick-on-Suir, Ireland, of pneumonia, Edward Paxton, eldest son of Edward and Blanche Ridgeway, and grandson of Sir Joseph Paxton, aged thirty-four.

MARKETS.

COVENT GARDEN, February 3.

Market dull, with no alteration. *James Webber, Wholesale Apple Market.*

Fruit.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Apple, ½-sieve	1 6– 5 0	Lemons, per case	12 0–21 0
— Nova Scotia, brl.	8 0–12 0	Pears, per dozen	2 0– 4 0
Grapes, per lb.	1 6– 3 6	Pine-apples, Eng., lb.	1 0– 1 6
Kent Cobs, 100 lb.	65 0 70 0	— St. Michael. each	1 6– 6 0

Vegetables—Average Retail Prices.

	s. d. s. d.		s. d. s. d.
Artichokes, per doz.	6 0– ...	Lettuce, per dozen	1 0– 1 6
Asparagus, French, per bundle	21 0– ...	Mushrooms, punnet	1 6– 2 6
— English, per 100	12 0– ...	Mustard and Cress, punnet	0 4– ...
Beans, Kidney, lb.	1 6– ...	Onions, per bushel	4 0– ...
Beet, red, per dozen	1 0– 2 0	Parsley, dozen bunch	4 0– ...
Brussels Sprouts, lb.	0 4– ...	Potatos, per cwt.	4 0– 5 0
Carrots, per bunch	0 6– ...	,, kidney, per cwt.	4 0– 5 0
Cauliflowers, per doz.	3 0– ...	Rhubarb, per bundle	0 6– ...
Celery, per bundle	1 6– 2 0	Seakale, per punnet	2 0– ...
Cucumbers, each	0 6– 1 0	Shallots, per lb.	0 3– ...
Endive, per dozen	1 0– 2 0	Spinach, per bushel	4 0– ...
Green Mint, bunch	1 0– ...	Sprue, bundle	1 0– ...
Herbs, per bunch	0 4– ...	Tomatos, pet lb.	1 0– 1 6
Leeks, per bunch	0 3– ...	Turnips, bunch	0 4– ...

Potatos.—Regents, 80*s.* to 100*s.*; Magnums, 70*s.* to 110*s.* per ton.

Plants in Pots.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz.	6 0–18 0	Ficus elastica, each	1 6– 7 0
Arum Lilies, dozen	18 0–24 0	Ferns, in variety, per dozen	4 0–18 0
Azaleas, per dozen	24 0–42 0	Foliage plants, various, each	2 0–10 0
Begonias, per dozen	6 0–12 0	Genista, per doz.	10 0–12 0
Bouvardias, doz.	9 0–12 0	Hyacinths, 12 pots	6 0– 9 0
Cineraria, per doz.	9 0–12 0	Lily-of-Val., 12 pots	12 0–24 0
Cyclamens, dozen	12 0–24 0	Marguerite Daisy, per dozen	6 0–12 0
Cyperus, per dozen	4 0–12 0	Myrtles, per dozen	6 0–12 0
Daffodils, 12 pots	9 0–10 0	Palms, in var., each	2 6–21 0
Dracæna terminalis, per dozen	30 0–60 0	Pelargoniums, scarlet, per doz.	6 0– 9 0
— viridis, per doz.	12 0–24 0	Primula sinensis, per dozen	4 0– 6 0
Epiphyllum, dozen	18 0–30 0	Solanums, per dozen	9 0–12 0
Erica hyemalis, per dozen	12 0–24 0	Spiræa, per dozen	12 0–24 0
— various, dozen	9 0–24 0	Tulips, 12 pots	6 0– 8 0
Euonymus, in var., per dozen	6 0–18 0		
Evergreens, in var., per dozen	6 0–24 0		

Cut Flowers.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Arum Lilies, 12 blms.	4 0– 6 0	Pelargoniums, 12 spr.	1 0– 1 6
Azaleas, 12 sprays	0 6– 1 0	— scarlet, 12 sprays	0 9– 1 0
Bouvardias, per bun.	0 6– 1 0	Poinsettias, per 12 sprays	4 0– 8 0
Camellias, 12 blooms	2 0– 4 0	Primulas, single, 12 bunches	4 0– 6 0
Carnations, 12 blms.	1 0– 3 0	— double, 12 sprays	1 0– 1 6
Cyclamen, 12 blooms	0 4– 0 9	Roses, Tea, per doz.	2 0– 4 0
Daffodils, 12 blooms	1 0– 2 0	— coloured, dozen.	3 0– 6 0
Eucharis, per dozen	3 0– 6 0	— red, French, doz.	2 0– 3 0
Gardenias. 12 blooms	12 0–24 0	— Saffrano, Fr. doz.	1 0– 1 6
Hellebore, or Christmas Roses, 12 bls.	0 4– 1 0	Tropæolums, 12 bun.	1 0– 2 0
Heliotrope, 12 spr.	0 6– 1 0	Tuberoses, 12 blms.	2 6– 4 0
Jasmine, white, bun.	0 6– 0 9	Violets, 12 bunches	1 6– 2 0
Lilies of the Valley, 12 sprays	0 9– 1 6	— Parme, French, per bunch	3 6– 7 6
Marguerites, per 12 bunches	3 0– 6 0	— Czar, Fr., bunch	1 6– 2 0
Mignonette, 12 bun.	3 0– 6 0		

SEEDS.

London: *Feb.* 2.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., write that there is now a steady seasonable inquiry for field seeds, All descriptions of foreign red Clover seed continue firm, but English samples have this week been in slightly diminished request. There is no change in either Alsike or white Clover. For choice Trefoil more money is asked. French Italian is slightly easier. Spring Tares, being unusually cheap, meet with increased attention. For bird seeds the sale is slow. Blue Peas and Haricot Beans realise former terms.

POTATOS.

Borough and Spitalfields: *Feb.* 1.—Larger supplies, indifferent assortment, slow trade at the following quotations:—Regents, 70*s.* to 110*s.*; Magnum Bonums, 70*s.* to 90*s.*; and Champions, 60*s.* to 80*s.* per ton.

CORN.

Averages.—The following is an official statement showing the average price of British corn, imperial measure, as received from the inspectors and officers of Excise, in the week ended January 29:—Wheat, 35*s.* 5*d.*; Barley, 26*s.* 7*d.*; Oats, 17*s.* 1*d.* For the corresponding week in 1886:—Wheat, 29*s.* 7*d.*; Barley, 28*s.* 8*d.*; Oats, 18*s.* 10*d.*

1887.

WRENCH'S

SPECIALTIES of the SEASON.

BEAN—

WRENCH'S GIGANTIC RUNNER.

Pod perfectly straight, and of extraordinary length. Unrivalled for exhibition purposes. Tender and delicious.

Per Quart, 2*s.*

BORECOLE—

WRENCH'S VARIEGATED KALE.

Extra selected. *Per Packet,* 1*s.*

BROCCOLI—

SNOW'S WINTER WHITE.

A perfect stock of this unique variety

Per Packet, 1*s.*

WRENCH'S JANUARY SELF-PROTECTING WINTER WHITE.

Per Packet, 1*s.*

BRUSSELS SPROUTS

WRENCH'S "KING of the MARKET."

The largest, most prolific, and most delicate flavoured of all.

Per Ounce, 1*s.*

CABBAGE—

WRENCH'S NEW DWARF, "THE PIGMY."

The earliest and dwarfest variety in cultivation. Admirable for private gardens. *Per Packet,* 1*s.* 3*d.*

CARROT—

WRENCH'S NEW IMPROVED HORN.

A very quick grower, and very massive in shape. Flesh very delicate and without core. *Per Ounce,* 1*s.*

WRENCH'S NEW MAIN CROP.

This splendid intermediate variety is somewhat longer than Nantes, and thicker at the shoulder, producing an enormous weight per acre.

Per Ounce, 1*s.*; *less by the Pound.*

LEEK—

THE LYON.

A regular prizetaker. *Per Ounce,* 1*s.* 6*d.*

PARSLEY—

WRENCH'S CHAMPION.

The finest stock in the world.

Per Ounce, 6*d.*

To be had Retail of all respectable Seedsmen throughout the world,

and WHOLESALE ONLY of

JACOB WRENCH & SONS,

39, KING WILLIAM STREET,

LONDON BRIDGE, LONDON, E.C.

THE LARGEST BROAD BEAN.

CARTERS' LEVIATHAN.

Pods of this remarkable Bean have been grown 21 inches in length.

Price, per Pint, 2s. 6d.
Post-free, 2s. 9d.

Seedsmen by Royal Warrants to H.M. the Queen and H.R.H. the Prince of Wales,

237 & 238, HIGH HOLBORN, LONDON.

SHARPE'S NEW PEAS.

QUEEN,"
2s. per Half-pint Sealed Packet.

"SIR F. A. MILLBANK,"
2s. per Half-pint Sealed Packet.

"TRIUMPH,"
2s. 6d. per Pint Sealed Packet.

"PARAGON,"
1s. 6d. per Pint Sealed Packet.

POST-FREE.

For full description and particulars, see *Gardeners' Chronicle*, December 4, 1886, p. 710.

Trade prices of the above and other novelties contained in Sharpe's List of Specialties, post-free on application.

CHARLES SHARPE & CO.,
SEED MERCHANTS, SLEAFORD.

NOVELTIES WORTH HAVING.

BROCCOLI — "CHRISTMAS PURPLE SPROUTING."
This variety produces good Sprouts before Christmas, and is in full bearing in January. Per packet, 1s.

CELERY—"BIBBY'S DEFIANCE SOLID WHITE."
This is an undoubtedly fine improvement in White Celeries—is large, firm, and solid, far surpassing "Sandringham," as it grows higher, faster, and larger in the same time, and as sweet as a nut. Per packet, 8d.

LETTUCE—"VAUXHALL DEFIANCE."
Cabbage variety—the finest summer Lettuce grown—is very large, and stands drought without running better than any variety we know. Per ounce, 1s.

PARSNIP — "IMPROVED MARROW."
This variety has a very clean, handsome root, and large—its flavour is before any other, it eats as short as a Carrot, is very sweet, without so much of the mealy taste of other Parsnips. Per ounce, 4d.

PEA — "SANGSTER'S No. 1."
Extra Early Selection.
We consider this greatly improved variety, which we have been selecting for some years, to be as Early as Laxton's Earliest of All, and a heavier cropper, and larger pods. Per quart, 1s.

Prices to the Trade on application.

CATALOGUES of all varieties of VEGETABLE and FLOWER SEEDS, including many good Novelties, free by Post.

WATKINS & SIMPSON,
SEED and BULB MERCHANTS,
EXETER STREET, STRAND, W.C.

SPECIAL CULTURE.

RHODODENDRONS AND HOLLIES

Grown in Sandy Loam.

WHOLESALE AND RETAIL.

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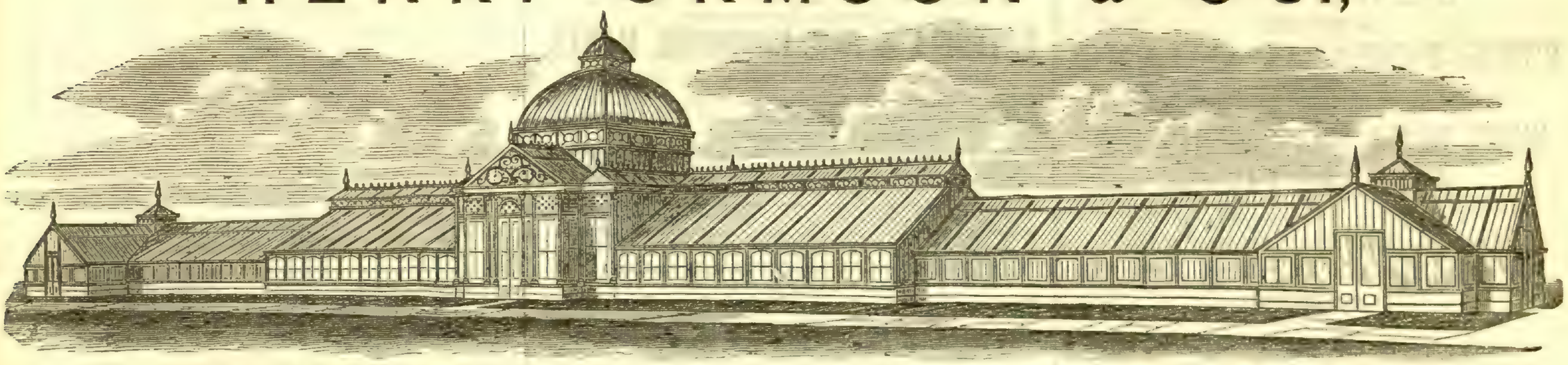

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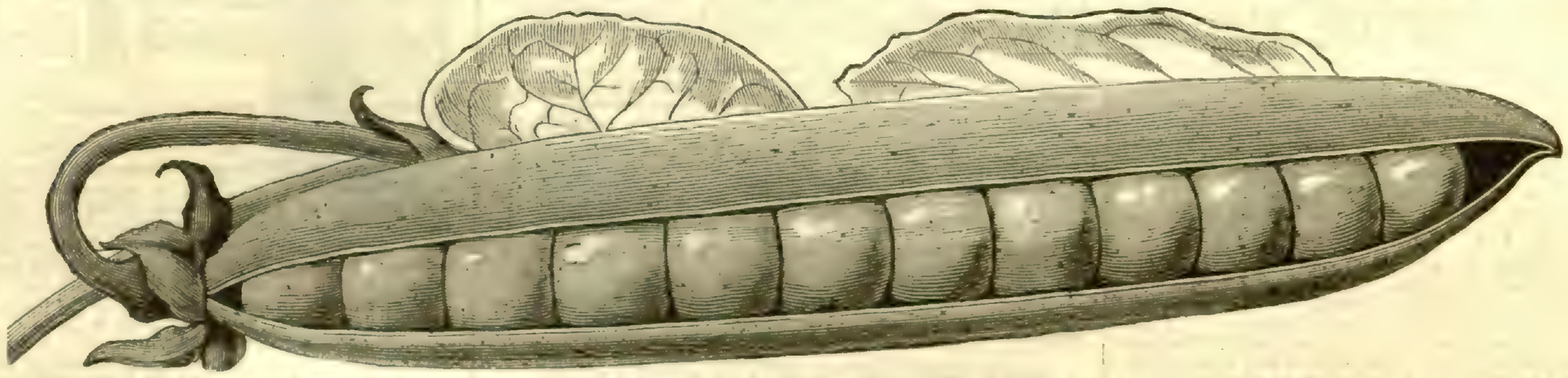

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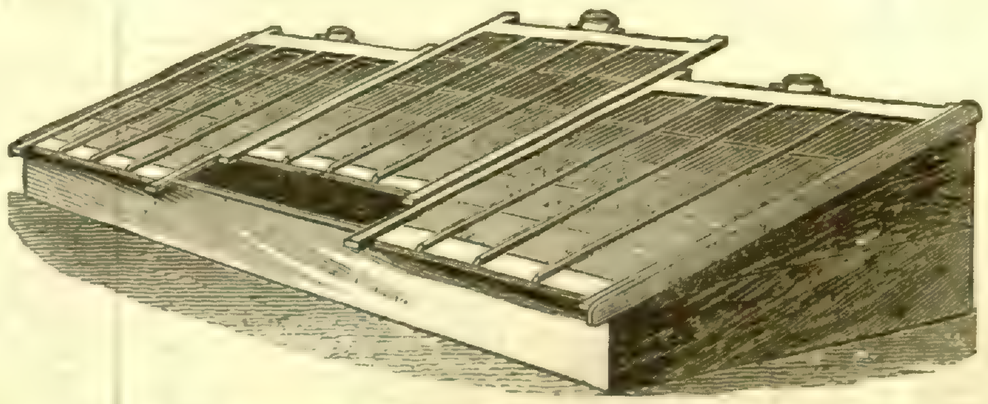

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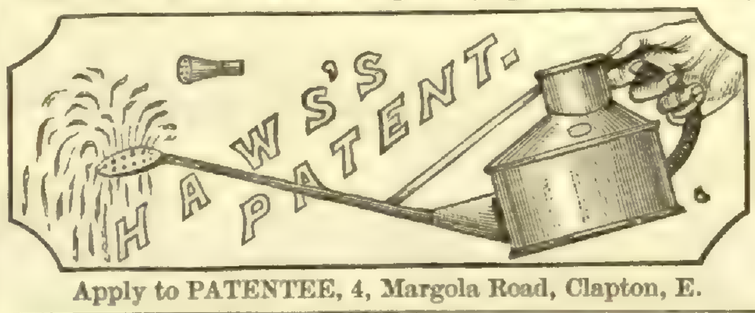

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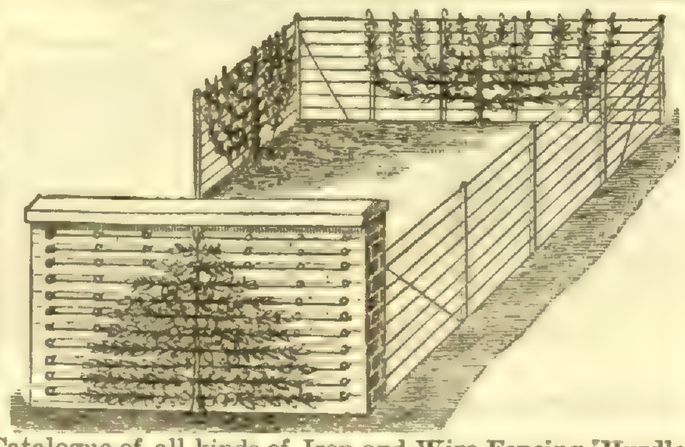

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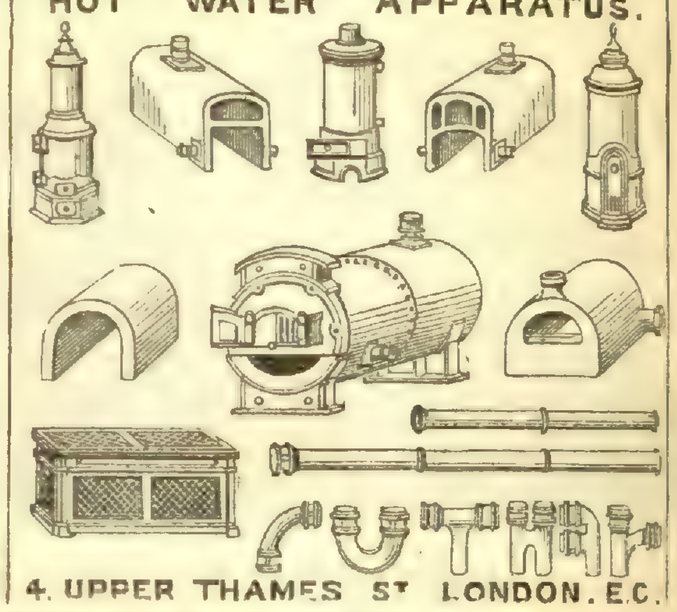

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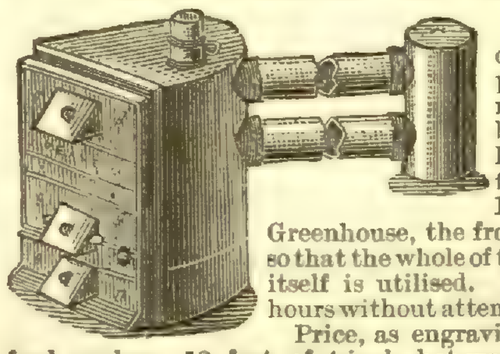

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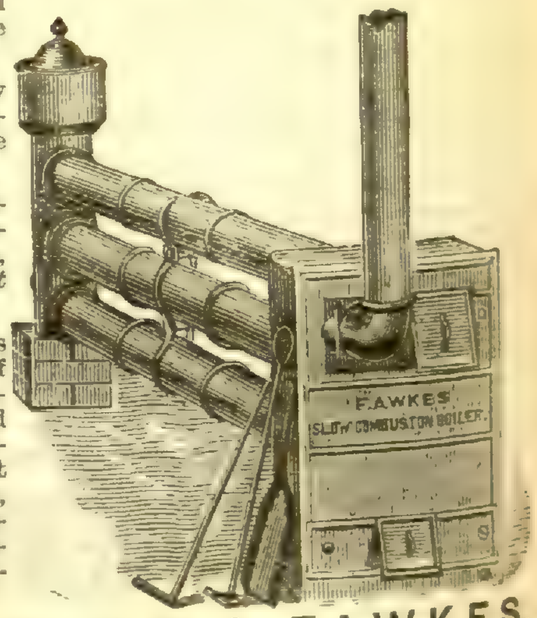

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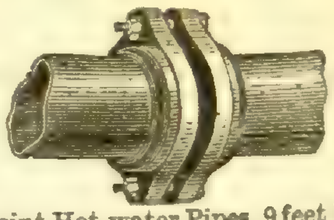

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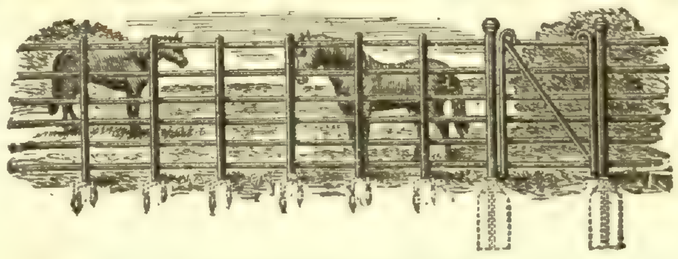

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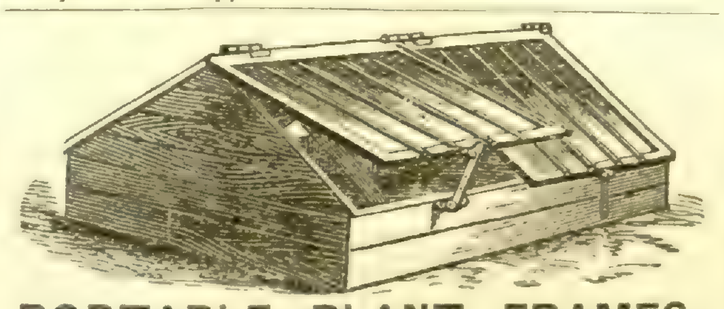

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GARDENER (Head); age 30.—Mr. Cakebread, Gardener to Sir Philip F. Rose, Bart., Rayner's Penn, Bucks, can with confidence recommend his Foreman, Arthur Cant, to any Nobleman, Lady, or Gentleman, requiring the services of a thorough Practical Gardener. For particulars apply as above.

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GARDENER (Head), where two, three, or more are kept.—Age 38, married; practical and energetic. Thoroughly understands his work. Twenty years' experience in the General Work and Management of a good Garden, Fruits, Flowers, and Vegetables, both under glass and in the open. Excellent character,—GARDENER, 43, Netherton Road, Seven Sisters Road, Stamford Hill, N.

GARDENER (Head); age 30.—J. Tullett, for the past five years Foreman to His Grace the Duke of Cleveland, Raby Castle, Darlington, Durham, would be pleased to meet with any Nobleman or Gentleman requiring a thoroughly practical MAN. Understands the management of a good Garden, first-class Fruit Grower and Plantsman. Can be highly recommended from present and previous employers. Fifteen years' good experience.—Please address as above.

GARDENER (Head); age 30.—C. Penford, Leigh Park Gardens, Havant, Hants, would be pleased to recommend his Foreman, Frank Norkett, to any Lady or Gentleman requiring the services of a thorough practical Head Gardener. He has had considerable experience in this and other large places where Growing and Forcing of Plants, Flowers, Fruit, and Vegetables have been carried on extensively. He has been in present situation five years, and is of good character.—Please address as above.

GARDENER (Head, and Head Working).—Age 32, married, two children (girls); an experienced man, of good character. A thorough high-class Gentleman's Gardener.—G. G., 85, Quentin Road, Blackheath, S.E.

GARDENER (Head Working).—Understands Flower and Kitchen Gardens, Vineries, Melons, and Greenhouse. Good reference.—ELSDON and CO., The Vineries, Milton, Cambridge.

GARDENER (Head Working).—Age 39, married; good practical trustworthy man. Fourteen years Head Gardener to Sir John Fowler; leaving on own account. Highest testimonials.—EDWIN BURGE, Thornwood Lodge, Campden Hill, Kensington, W.

GARDENER (Head Working), where one or more are kept.—Married, no family; good all-round man. Orchids, &c, Eleven and a half years in present situation. Leaving through employer giving up greenhouses. —G. COULDREY, Wilton, Salisbury.

GARDENER (Head Working), where two or three under.—Age 32; thoroughly competent in the usual requirements of a Gentleman's Garden; four years character in last place.—J. TURNER, King Street, Southwell, Notts.

GARDENER (Head Working).—Age 36, married; twenty years' experience—eight years as Head, Thoroughly practical and well up in all departments. Excellent character.—GARDENER, 6, Clifton Terrace, White Road, Sparkbrook, Birmingham.

GARDENER (Head Working).—Age 28; experienced in the Cultivation of Stove and Grenhouse Plants, Orchids, Early and Late Forcing of Fruit and Vegetables; also Flower and Kitchen Garden.—GARDENER, James Meredith, Seedsman, &c., Market Place, Warrington.

GARDENER (Head Working), where three are kept.—Age 45, married; good Grower of Peaches, Grapes, Melons, Vegetables, and Stove and Conservatory Plants; five years good recommendation from present employer. —GARDENER, Trent Church Court, Hereford.

GARDENER (Head Working).—Age 33, married, three children; brought up to profession. Eight years' trade experience. Thoroughly proficient in Plant, Fruit, Vegetable Culture, and general routine of a Gentleman's Establishment.—WHEELER, 1, Langley Cottage, Catford, Kent.

GARDENER (Head Working); age 27, single.—J. Butler, Beedingwood, Horsham, Sussex, can with confidence recommend his Foreman to any Lady or Gentleman requiring a good practical man. Fourteen years' experience. Three years in present situation. For full particulars apply as above.

GARDENER (Head Working); age 35; married.—A Lady can highly recommend her Gardener to any one requiring the services of a responsible man, thoroughly conversant with every branch of Gardening pertaining to a large estate. Twenty-three years' experience.—W. EVANS, Strensham Court Gardens, Tewkesbury.

GARDENER (Head Working).—Mr. Cooper, Gardener to the Right Hon. J. Chamberlain, M.P., Highbury, Birmingham, can highly recommend a man. Thoroughly experienced in all branches. Early and Late Forcing of Fruit, Flowers, and Vegetables. Thoroughly understands Orchids, Stove and Greenhouse Plants, and the general routine of Flower and Kitchen Gardening.—Address as above.

GARDENER (Head Working); age 26, married when suited.—Mr. M'Culloch, Gardener to Sir A. A. Hood, Bart., St. Audries, Bridgwater, can with confidence recommend his Foreman, John Spilsbury, to any Lady or Gentleman requiring the services of a thorough practical and trustworthy man. Early and Late Forcing. Four years in present situation. For further particulars apply as above.

GARDENER (Head Working); age 29.—Mr. J. Millard, Head Gardener to the Baroness Burdett Coutts, Holly Lodge, Highgate, N., can highly recommend the Advertiser as a thorough practical man. Good testimonials from previous employers. For particulars, please apply as bove, or to F. W. RUSSELL, Clayton Villa, Hastings Road, Ealing, W.

GARDENER (Head Working), single-handed, or where help is given.—Age 36, married, two children; understands Vines, Peaches, Melons, Cucumbers, Stove and Greenhouse Plants, Flower and Kitchen Gardening. Sixteen years' practical experience. Nine years' excellent character.—T. O., Leverington House, Wisbeach.

GARDENER (Head Working, or good Single-handed).—Age 27; thoroughly understands Cultivation of Fruit, Flowers, including Orchids, and Vegetables. Good references.—J. H., Thomas Ditcheat, Evercreech, Bath.

GARDENER (Head), or GARDENER and BAILIFF; age 33, married.—J. P. Kendall, of The Gardens, Templeton, Roehampton, will be pleased to recommend a thorough practical man as above to any Lady or Gentleman. Sober, honest, and industrious. Character from present and previous employers of the highest order. Please address as above.

GARDENER (Head, or good Single-handed).—Age 32, married; five years' in last situation. Can be highly recommended by last employer.—C. W., 508, Commercial Road, London, E.

GARDENER.—F. Orchard, Head Gardener to E. Barker, Esq., Abington Hall, Cambridge, begs to offer his services to any Lady or Gentleman requiring a thorough practical man. Well up in Early and Late Forcing, Stove, Greenhouse, and Flower and Kitchen Gardening.

GARDENER, or GARDENER and BAILIFF; age 32, married, two children.—Nevil Lubbock, Esq., wishes to recommend his late Gardener as a good practical man, with five years' reference as Head. Leaving through place breaking up. Also references as to ability from several Noblemen's Gardens.—WILLIAM WATERMAN, Orford House, Bishops Stortford, Herts.

GARDENER (Single-handed).—Age 25; nine years' experience in Kitchen Garden. Vine, Melon, and Cucumber Growing. Seven years last situation. Highest references.—H. DOUGHTY, Bishop Stortford.

GARDENER (Single-handed, or where help is given).—Age 26, married when suited; abstainer. Ten years' practical experience, Inside and Out. Good character.—M. J., 54, St, Mary's Road, Peckham, S.E.

GARDENER (Single-handed), or where help is given.—Age 31, married; understands Gardening in all its branches; fifteen years' experience, six and a half years' good character.—D. J. M., Southwood, Hildenborough, Tonbridge, Kent.

GARDENER (Single-handed).—Age 28; eleven years' experience in Fruit, Flower, and Kitchen Gardens, Early and Late Forcing.—J. W. C., Mr. J. Keen Badsey, Evesham, Worcester.

GARDENER (Single-handed), good plain. No objection to horse or cow.—Age 29, married; good character.—M. R., 10, Malden Road, Haverstock Hill, N.W.

GARDENER (Single-handed, or Second where three or four are kept).—Age 23; ten years' experience inside and out. Abstainer.—A. F., 61, Tanfield Road, Croydon.

GARDENER (Second), in a good Gentleman's establishment; Houses preferred.—Age 23. Good character.—J. DOVERING, The Cottage, Agthandale, Wimbledon Park.

GARDENER (Second), under a good Working Gardener.—Age 27; strong, respectable, and active. Excellent character from present employer.—C. W., 3, Marsh Gate Road, Richmond, Surrey.

GARDENER (Second); age 24 years.—A Gentleman wishes to recommend a respectable young man where three or four are kept. Six years in present situation. Good character. An abstainer.—HARRY GUTTRIDGE, Eastfield Lodge, Whitchurch, near Reading, Berks.

GARDENER (Second), under Foreman, or Second Hand under Head Gardener.—Age 22, single; six years' experience.—W. WOOD and SON, The Nurseries, Maresfield, Uckfield, Sussex.

GARDENER (Under, or Single-handed).—Age 24, single; nine years' experience.—J. H., 12, Park Walk, Fulham Road, Chelsea, S.W.

GARDENER (Under, or Single-handed).—Age 21; abstainer, well up in the Growing of Flowers, Vines, Mushrooms, Tomatos, Cucumber, Fruit, &c.; nine years' experience. Highest references.—C. MORRIS, Towersey, near Thame.

GARDENER (Under), in a good establishment.—Age 21; five years' experience.—H. REDDEN, Over Whitacre, near Birmingham.

GARDENER (Under), in a Nobleman's or Gentleman's Family.—Age 21; six years' experience. Good references.—J. Mc., 1 Anderton Square, Wavertree.

GARDENER (Under).—Age 23; eight years' experience. Total abstainer.—J. HUDSON, 16, Poplar Walk Road, Herne Hill, S.E.

GARDENER (Under), in a Kitchen Garden or Pleasure Grounds.—Age 22; twelve months' good character. Bothy preferred.—C. B., Onertan, Castle Bar Hill, Ealing, Middlesex.

GARDENER (Under), has been used to Inside and Outdoor work.—Age 23, single; under Glass preferred.—State particulars to W. FOSTER, Holne, Ashburton, Devon.

GARDENER (Under), Inside.—Age 20; good character, and well recommended. In or near London preferred.—H. HEEREMANS, Langley Burrell, Chippenham, Wilts.

GARDENER, or FIRST JOURNEYMAN.—Age 21; good references. Please state wages.—A. BLAKE, Warnford Park Gardens, Bishops' Waltham.

MANAGER, FOREMAN, &c., Indoor.—Well up in Cultivation of Stove and Greenhouse Plants, Ferns, Palms, Forcing, Management of Men and Glass.—C., 404, Caledonian Road, London, N.

MANAGER, or FOREMAN, in large Market Nursery.—Fourteen years' practical experience in producing large quantities of Cut Flowers and Flowering Plants, Hard and Soft-wooded, as Pelargoniums, Bouvardias, Cyclamens, Tree Carnations, Double Primulas, Eucharis, Palms, Tea Roses, Ferns, also Tomatos, Cucumbers, Grapes, &c.; well up in Wreaths and Bouquets.—Apply, stating wages given, &c., to FOREMAN, Little Posbrooke, Titchfield, Fareham, Hants.

FOREMAN PROPAGATOR, or MANAGER.—Age 40; over twenty years' experience, and always in the Nursery line. Disengaged February 7. Leaving of own accord.—FAASS, 16, Queen's Road, Winchester.

FOREMAN, or would MANAGE Small Nursery.—Sixteen years in Market Nursery.—Apply by letter, stating full particulars and wages, to A. B., 11, Lordship Road, London, N.

FOREMAN, in a good establishment; age 25.—Mr. Barham, Gardener to the Earl of Sefton, Croxteth Hall, Liverpool, will be pleased to recommend a man as above.

FOREMAN, in the Houses, in a good establishment; age 25.—Mr. Cole, Charters, Sunninghill, Ascot, would have great pleasure in recommending GEO. GURNEY, as above.

FOREMAN, in a large establishment.—Age 23; nine years' experience in all branches of Gardening. Eighteen months' good character.—T. BOND, Nursery, Iron Church Road, Southgate, London, N.

To Nurserymen.

FOREMAN.—Age 25, single; well up in Roses, Fruits, Budding, Grafting, and Training, and General Nursery Work.—T. N., 2, Tivoli Place, Barrack Road, Hounslow, Middlesex.

To Nurserymen.

FOREMAN; age 28.—Wanted in March, by a thorough practical man with thirteen years' experience in general Nursery-work, a situation in Hardy Herbaceous branch preferred. Seven years in present situation, four years of which having had charge of Herbaceous and Alpine Department in one of the leading Nurseries in the neighbourhood of London. Well acquainted with execution of orders and trade requirements.—E. B., 8, Chestnut Road, Tottenham, London.

FOREMAN; age 27.—Mr. J. J. Lowry, The Gardens, Trafford Park, Patricroft, Manchester, will be pleased to recommend a very energetic young man as above, in a good establishment; eleven years' experience.—Address, with full particulars as above.

FOREMAN (Inside or General), in a good private establishment.—Can be well recommended for character and ability by last and previous employers.—JOHN EVANS, 1, Philip Street, Flookersbrook, Chester.

FOREMAN (Inside or General), in a good private establishment.—Well recommended by last and previous employers for character and ability.—SAMUEL SCOTT, 1, Phillip Street, Flookersbrook, Chester.

FOREMAN, PROPAGATOR, GROWER of Hard and Soft-wooded Plants, Ferns, Palms, Roses, Tomatos, Cut Flowers, &c.—Good references.—GENISTA, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

GROWER, or FOREMAN in Small Market Nursery.—Age 24, nine years' experience; good references.—G. M., 19, Liquorpond Street, Boston, Lincolnshire.

PROPAGATOR and GROWER.—Age 28; thirteen years' experience in Stove and Greenhouse Plants, Good Grafter. Good references. Market Nursery preferred.—T. B., 52, Ranelagh Road, Harlesden.

To Nurserymen.

PROPAGATOR (Assistant).—Age 23; well up in Grafting and Potting, &c. Eight years' experience in two well known firms. Good references.—P. K., 57, Trafford Street, Chester.

ORCHID GROWER.—Seven years' experience in leading establishment.—W. JUDGE, 44, Juxom Street, Oxford.

To Noblemen and Gentlemen.

JOURNEYMAN (First), in a large establishment.—Age 23; two years in last situation; good character. Bothy preferred.—H. WINSTANLEY, Billeswell, Leicestershire.

JOURNEYMAN (First or Second), in good establishment.—Age 21; four years' experience under glass; two years in present situation, in Orchid department; good references. Bothy preferred.—J. H. P., The Gardens, Barvein, Potters Bar, Herts.

JOURNEYMAN, in the Houses under a Foreman.—Age 23; eight years' experience.—HEAD GARDENER, Froyle Park, Alton, Hants.

JOURNEYMAN, in the Houses, or Inside and Out.—Age 26; seven years' experience. Good character.—F. SMITH; The Gardens, Oakley House, Gledhow, Leeds.

JOURNEYMAN, in a Gentleman's establishment.—Age 22; six years' experience.—C. BEST, The Gardens, Whalley House, Whalley Range, Manchester.

JOURNEYMAN, in the Houses.—Age 23; nine years' experience in good places.—M. G., 1, Brandon Place, St. Phillips, Cheltenham.

JOURNEYMAN in the Houses under a Foreman.—Age 24; two years' good character; total abstainer. Bothy preferred.—J. SPARROW, The Gardens, Hanger Hill House, Ealing, W.

JOURNEYMAN, in the Houses.—Age 22; six years' experience at Ossington and Wortley. Can be well recommended from both places.—W. PAWSON, Wortley Hall Gardens, Sheffield.

JOURNEYMAN; age 17.—Mr. Coates, Head Gardener to Mrs. Miller, Brentry House, Westbury-on-Trym, Bristol, can with confidence recommend a young man as above.

JOURNEYMAN, in the Houses.—Age 20; three years in present situation. Excellent recommendation.—HEAD GARDENER, Moncton House, Bideford, Devon.

JOURNEYMAN, in the Houses.—Age 25; has had twelve years' experience in Nursery and Gentlemen's Gardening. Good character.—DAVIDSON, Longford Hall Gardens, Stretford, Manchester.

JOURNEYMAN, or Second in a good establishment.—Age 24; total abstainer. Good character. Leaving through establishment being reduced.—J. ROLLINS, The Gardens, Borden Wood, Liphook, Hants.

JOURNEYMAN, in the Houses, in a good Nursery.—Age 23; ten years' experience. Good references.—Address C. W., 8, Aylesbury Road, Bromley, Kent.

JOURNEYMAN, in the Houses, under a Foreman; age 19.—Mr. Weir, the Gardens, Acton Park, Wrexham, can highly recommend a young man who has been with him five years. For particulars apply as above.

JOURNEYMAN, or SECOND, in a good private establishment.—Age 23; can be well recommended. Three years in last situation.—F. B., 66, Gaunt Street, Lincoln.

JOURNEYMAN, or Second where three are kept.—A Head Gardener can recommend a young man (age 22, single). Has been with him five years.—Mr. J. HODGES, Head Gardener, Great Walstead, Lindfield, Sussex.

IMPROVER; age 19.—J. Lambert, Onslow Hall, Shrewsbury, can highly recommend a young man as above.

IMPROVER, in a good establishment.—Age 17; well recommended. Four years in Fruit and Flower houses.—H. PEARCE, Hill Bank, Sunninghill, Berks.

IMPROVER, in a Florist's or Seedsman's Shop. Age 17; three years' experience.—C. BARNWELL, Crescent Road Nurseries, Worthing.

IMPROVER.—Mr. Tonman Mosley, Bangor, Iver, Uxbridge, wishes to place his Garden Youth where he may improve himself under good Head Gardener.

IMPROVER.—W. Vicary, Head Gardener, Sudbury House, Hammersmith, W., wishes to place a lad (age 16) with a good Gardener, where three or four men are employed. Has been with him three years.—Apply above.

IMPROVER.—G. Merritt, Gardener to the Right Hon. Lord Dacre, Kimpton Hoo, Welwyn, Herts, desires to recommend a smart active youth as above.

IMPROVER.—Age 19; five years' experience; some knowledge of House-work. Bothy preferred.—GEO. WALL, Breakspear, Uxbridge.

IMPROVER, in a Gentleman's or Nobleman's Garden.—Age 18; good knowledge of work, Inside and Out. Would give a small premium.—W. HUNT, North Acres, Streat, near Hassocks, Sussex.

TO GENTLEMEN and NURSERYMEN.—Situation wanted (Single-handed or Second) by the Son a(ge 21) of a well-known country Rose-grower, in Gentleman's Garden or in good Nursery. Thoroughly understands the work. Total abstainer. Good character. Please state wages given.—W. MATTOCK, Rolph's Terrace, New Headington, Oxford.

TO NURSERYMEN and SEEDSMEN.—Situation desired by Advertiser who has had the Management of Nursery and Seed Business. Well understands Soft-wooded Propagation and General Nursery Plants for Market. Considerable experience as Salesman and Waiting on Customers.—J. COOK, Jun., Barrack Street, Bridport.

TO NURSERYMEN.—A young man (age 21), seeks a situation in a Nursery under glass. Well experienced in Growing Plants for Market.—W. M., 106, Avenue Road, Acton, W.

TO NURSERYMEN.—Advertiser would be glad to hear of a situation in a Market Nursery. He has had eight years experience in the Houses and is well up in Propagating. Industrious, sober, and willing. Good references, 18*s*. per week.—J. J., Whittington Nursery, Highgate Hill, N.

TO NURSERYMEN and FLORISTS.—Advertiser has had nine years' experience in Nursery and Florist work. Thoroughly understands cultivation of Bedding and Window Plants; also Cucumbers, Tomatos, Grapes, &c.—G. C., Horn Lane Nursery, Woodford, Essex.

TO FLORISTS &c.—A young man, who has served his time with a first-class Florist, wants a situation which would eventually lead to a Partnership.—HORTUS, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

TO GARDENERS, &c.—Advertiser seeks a situation in a Private Garden. Nine years in the employ of Mr. Green, Florist, London, at his country growing establishment. Age 35, married. Good character.—VIRIDIS, Grosevenor Cottage, Wellington Road, North Hounslow.

TO NURSERYMEN.—A young man desires situation in a Nursery. Can Pot, Tie, and Water. Good character of three years from present Nurseryman and Florist.—H. LANE, Shrub Cottage, Staines Road, Hounslow.

TO NURSERYMEN.—A useful man, well up and can do work well in every branch of Horticulture—in or out—would specially suit a small but rising Nurseryman—a good master will have a good man.—HORTUS, 4, Bridge Street, Kilburn, London, W.C.

TO GARDENERS, &c.—Required, by son of Gardener (age 18), situation in the Gardens, has had little experience. Good character.—H., 17, Connaught Terrace, Birdhurst Road, Wandsworth, London, S.W.

TO NOBLEMEN and GENTLEMEN.—Situation wanted by a strong respectable youth (age 17), in a Gentleman's or Nobleman's Garden; slight experience.—GEORGE WILLIAM AUSTIN, Barleythorpe, Oakham, Rutland.

TO GARDENERS, &c.—A young man (age 21) would like to hear of a situation in the Garden. Has not been out before; willing to make himself useful.—Z. C. B., Washerton, Warwick.

Seed Trade.

SHOPMAN, also used to Plant and Flower Trade.—Age 27; good Penman and Accountant. Good references.—W. HARRIS, Hammerwood, East Grinstead, Sussex.

SEEDSMAN, Shop or Warehouse.—Open for engagement. Thorough knowledge of Trade in all branches. Highest references and first-class testimonials.—D. A., W. Miller, 33, Great Clerk Street, Edinburgh.

HOLLOWAY'S PILLS.—Enfeebled Existence.—This medicine embraces every attribute required in a general and domestic remedy; it overturns the foundations of disease laid by defective food and impure air. In obstructions or congestions of the liver, lungs, bowels, or any other organs, these pills are especially serviceable and eminently successful. They should be kept in readiness in every family, as they are a medicine without a fault for young persons and those of feeble constitutions. They never cause pain, or irritate the most sensitive nerves, or most tender bowels. Holloway's Pills are the best known purifiers of the blood, and the best promoters of absorption and secretion, and remove all poisonous and noxious particles from both solids and fluids.

BEESON'S MANURE

Is now recommended by most of the leading Nurserymen and Gardeners as the Cheapest, Safest, and the Best General Fertiliser for all purposes.

Consisting solely of Animal Matter, with only necessary ingredients to preserve the Manurial Properties from evaporation through exposure or changes of climate. This valuable Fertiliser needs but little instruction for applying it even to the *most delicate Seed or Plant.* Although it has been thoroughly tested and tried against all other Horticultural Manures, and has proved itself the *Best Manure at present in the Market for VINES, ROSES, and POTATOS,* it may also safely be recommended as a most valuable Manure for all General Purposes, either in the Flower, Fruit, or Vegetable Garden. It does not become immediately exhausted, but affords a stimulant to Plant Life for a long time.

RESULTS OF ANALYSIS OF BEESON'S MANURE, by ALFRED SIBSON, F.C.S.

Author of "Agricultural Chemistry," "Manures; How to Make, Buy, Value, and Use," "Every-day Chemistry," "Food, Feeding, and Manure," "A Lecture on Superphosphates," &c.

"LABORATORY—23, St. Mary Axe, London, E.C.

"Having carefully analysed a sample of Horticultural Manure—submitted to me by Mr. W. H. Beeson—I find it contnins all the Fertilising Constituents required for promoting the growth of Vines, Roses, Potatos, and Garden Plants generally. The use of Artificial Manure in the Garden is now much extending, as it is found to be highly beneficial. This Manure supplies, at a comparatively low price, an excellent article for the purpose, and will, in my opinion, give satisfaction to all who use it. "ALFRED SIBSON, F.C.S."

The Rev. CANON HOLE, CAUNTON MANOR, NEWARK, writes:—

"Dear Sir,—I have much pleasure in informing you that my gardener reports that he considers 'Beeson's Manure' to be *the best* he has tried; and he has shown me in proof various experiments he has made both out-of-doors and under glass. Its good effects are very evident upon Rose trees, some pots of Mignonette (Miles' Spiral), Tomatos, Celery, and Chrysanthemums, there being a *marked difference and stronger growth* in all these cases where this Manure has been applied. *I hope that the value of this article* may be generally known and appreciated.—Truly yours, "S. REYNOLDS HOLE.

"To Mr. W. H. Beeson, Carbrook Bone Mills, Sheffield."

THE GARDENS, BESTWOOD LODGE, ARNOLD, NOTTS.

"Dear Sir,—I have much pleasure in testifying to the valuable properties of 'Beeson's Manure.' I have used it as a top-dressing for Vine and Peach borders, with the result that I have taken more prizes than ever I did before. For Melons and Cucumbers it acts like magic, and on all Soft-wooded Plants in pots. For Cauliflowers, Brussels Sprouts, Peas, Onions, and Potatos, I have used it, and have had the best crops I have had for years. I consider it the best and cheapest Manure extant.—Yours truly.

"JOHN EDMONDS, Gardener to His Grace the Duke of St. Albans.

"To Mr. W. H. Beeson."

THE GARDENS, THORESBY PARK, OLLERTON, NEWARK.

"Mr. Beeson, Sheffield.

"Dear Sir,—Having used your 'Manure' the past seaason, I was very pleased to see the results on Roses and all Soft-wooded Plants, either as a top-dressing or mixed in the soil at potting. I find it excellent as top-dressing for Vine Borders and Peaches, also Rose Borders. When better known it will rank high as a 'manure.'—Yours truly,

"A. HENDERSON, Gardener to Earl Manvers."

THE GARDENS, CLUMBER, near WORKSOP.

"Dear Sir,—I have used your 'Beeson's Manure' largely for the past two years as a top-dressing for Vines, Peaches, and Roses; also on Stove and Greenhouse Plants; and I can truly say that a better or safer artificial manure than yours has never come under my notice.—Yours truly,

"M. GLEESON, Gardener to His Grace the Duke of Newcastle.

"To Mr. Beeson, Carbrook Bone Mlils, Sheffield."

Extract from "THE FIELD." December 13, 1884 (page 883).

"EARLY MARECHAL NIEL ROSES.

"Good Plants for forcing may be grown in 10-inch or 12-inch pots; and if grown in a substantial mixture of turfy loam and 'Beeson's Manure,' they will go on growing and blooming for many years. The 'Manure' just named grows Roses better than any other I have ever tried, and if a 4-inch potful of it is mixed with a bushel of loam it is excellent for potting or top-dressing. "CAMBRIAN."

THE GARDENS, CHATSWORTH, near CHESTERFIELD.

"Dear Sir,—I have used your Manure for upwards of two years with very satisfactory results, and I have much pleasure in recommending it as a good and reliable article.—I am, dear Sir, yours truly,

"OWEN THOMAS, Gardener to His Grace the Duke of Devonshire.

"Mr. Beeson."

KNOWSLEY GARDENS, PRESCOT.

"Mr. W. H. Beeson.

"Dear Sir,—During the last two years I have used your 'Beeson's Manure' upon a variety of crops, both under glass and out-of-doors, and in every case with marked good effect. It seems to be a judicious mixture of a food and a stimulant, and is, therefore, in my opinion, just the sort of Manure for helping on Garden Crops. Some so-called Patent Manures are ticklish to use, an overdose doing far more harm than good, but your 'Beeson's Manure' I have found to be always safe and reliable, and worth its cost.—Yours truly,

"F. HARRISON, Gardener to the Right. Hon. the Earl of Derby,
"Knowsley Hall, Prescot, Lancashire."

INTERNATIONAL POTATO EXHIBITION. CRYSTAL PALACE, October 7 to 9, 1885.

EYDON HALL, BYFIELD, NORTHAMPTONSHIRE, October 12, 1885.

"Dear Sir,—You will see by the gardening papers that I once more took the First Prize in all the collections that I was allowed to compete in, with Potatos grown with your 'Beeson's Manure.' It is the best 'Manure' for Potatos I have ever tried, and I shall use it more largely in future. They are quite as good as in previous years, in spite of the very dry season, and are free from scab where it was applied, a proof that worms, &c., do not like it.—Yours truly, "J. HUGHES.

"Mr. W, H. Beeson, Carbrook Bone Mills, Sheffield.

"P.S.—The Prizes I took were:—First prize for twenty-four varieties, first prize for nine varieties, first prize for six vatieties, first prize for one dish coloured kidney, and four seconds and two thirds."

THE GARDENS, HECKFIELD PLACE, WINCHFIELD.

"Dear Sir,—I beg to say that I have formed an excellent opinion of your Manure. I have used it as a top-dressing for Tomatos, Chrysanthemums, Winter-flowering Pelargoniums, and Roses; and their improved appearance was visible in a very short time. I have also used it with the like good effect on Strawberry plots in the open garden, and sprinkled it over Vine Borders immediately before rain. I hope to use it more largely in this coming season, and herewith enclose order for another supply, which please send at your early convenience.—I remain, dear Sir, yours faithfully,

"Mr. Beeson, Sheffield." "W. WILDSMITH, Gardener to Viscount Eversley."

THE GARDENS, TAN-Y-BWLCH, MERIONETHSHIRE.

"Dear Sir,—I am glad to say the four tons of Manure I got from you has given me great satisfaction. Applied to Pines, Vines, Peaches, Melons, Cucumbers, and Soft-wooded Plants generally, it quickly produces a most marked effect, and is undoubtedly a powerful, safe, and lasting stimulant. For Kitchen Garden Crops we use Artificial Manure only, and yours, where applied, compares favourably (in this as well as other departments) with others of a much higher price,—Yours very truly,

"JOHN ROBERTS, Gardener to W. E. Oakly, Esq.

"W. H. Beeson, Esq., Carbrook Bone Mills, Sheffield."

INGESTRE GARDENS, STAFFORD.

"Dear Sir,—I have used your 'Beeson's Manure' rather largely of late, and with the very best results. I have applied it to Vines, Peaches, Roses, and a host of other things, and I consider it an invaluable stimulant either as a mixture with soil or as a liquid. I certainly intend to continue using your Manure, and am sure when it becomes better known yours will be 'The Manure' of the day.

"E. T. GILMAN, Gardener to the Earl of Shrewsbury and Talbot."

Extract from "THE GARDENERS' CHRONICLE," May 22, 1886 (page 655).

"FRUITS UNDER GLASS.

"Giving water at the roots.—Where there is not a supply of Liquid Manure at hand, 'Beeson's Manure' at the rate of 9 lb, to 36 gallons of water is a capital substitute; indeed in my opinion, it is preferable, as it imparts not only a darker green and better texture to the leaves, but also a brighter and richer colour to the fruit."

THE GARDENS, EDGECOTE PARK, BANBURY, OXFORDSHIRE, October 14, 1885.

"Dear Sir,—I take this opportunity of informing you that in spite of the very dry season my Potatos are better than I have ever had them, those grown with your 'Beeson's Manure' being a much finer, cleaner, more handsome, and heavier crop than those grown with other Artificial Manures. It is the best manure for Potatos I have yet tried, also for Vines, Melons, Tomatos, Peas, Pot Plants, &c. I also find it to possess more staying power than any other. I assure you I shall use it largely in future.—I remain, dear Sir, yours faithfully,

"Mr. W. H. Beeson, Carbrook Bone Mills. "E. S. WILES.

"P.S.—At the International Potato Show last week, at the Crystal Palace, I took two first prizes, besides two seconds and three thirds, with Potatos I had grown with your 'Beeson's Manure.'"

"Mr. W. H. Beeson, Sheffield. **PARK LANE, DONCASTER, January 18, 1887.**

"Dear Sir,—I was induced to try your Manure in 1885, which I applied for growing the Duke of Albany Pea, raised by my manager, David Abbott, and also for growing Brussels Sprouts, in all about 20 acres; and the benefits were very encouraging, so that I ordered 30 tons for 1886, which was applied to a greater variety of crops. I grew 15 acres of Peas ('Dukes'), 22 acres Sprouts, 11 acres Celery. I also used it on a Seed field, and for Barley, to test it by comparison with other manures on same fields; and I am bound to say that I am perfectly satisfied with the results. Our Celery, without extra care, reached 5 to 7 lb. per root. It was a pleasing sight to see the Peas, and one of the very foremost seedsmen in the country, who saw them, remarked, 'He had often seen such a sight on illuminated sheets, but never before in reality.' Respecting your statement that your Manure lasts, I am pleased to add that we have proved this to be so, and have concluded that it is the very best Manure we have known, and enclose a first delivery note for this next season, of 15 tons, same quality as previous. I will send further instructios later on for second delivery.—Yours faithfully, "W. GRIFFITH."

Sold in Tins at 1s., 2s. 6d., 5s. 6d., and 10s. 6d. each.
Also in Sealed Air-tight Bags, containing 1 cwt., 13s.

The 10s. 6d. Tins serve as a strong substantial receptacle to refill from the 1 cwt. Bags. Special Prices for Large Buyers on application.

MANUFACTURED BY W. H. BEESON, CARBROOK BONE MILLS, SHEFFIELD.

And may be obtained through all respectable Nurserymen, Seedsmen, and Florists in the Kingdom; but insist upon having "Beeson's," as there are numerous chemical compositions sold as Manures that are both dangerous and worthless.

☞ **PURE CRUSHED UNBOILED BONES, ½-in., ¼-in., or MEAL; GENUINE DISSOLVED BONES, for Grass Land and Agricultural Purposes; SULPHATE of AMMONIA; GENUINE (Spring Wood Burnt) WOOD CHARCOAL; HORN SHAVINGS, &c., at Market Prices.**

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CONTENTS.

Afghan boundary, flora of 221
Angræcum sesquipedale . 220
Books, notices of :—
Album of Indian Ferns 216
Dictionary of English Plant Names ... 216
Life-Histories of Plants 216
Tobacco: Growing, &c. 216
Chrysanthemums, February flowering ... 219
Corbularia, geographical distribution of 208
Cultural Memoranda ... 213
Cypripedium Boxalli var. atrata 210
Dendrobium Fytchianum var. rosea... ... 209
,, Schneiderianum ... 209
Dew, formation of ... 215
Dresden International Exhibition 215
Firewood 219
Florists' Flowers... ... 217
Foreign correspondence , 217
Fruits under glass ... 212
Grapes in the open air ... 207
Iris germanica 210
Jubilee, the ... 215, 219
Lælia elegans Measuresiana 209
Magnolia acuminata ... 216
Maximiliana regia ... 215
Nursery and Seed Trade Association 220
Obituary :—
Stevens, Mrs. 223
Orchidaceous plants, manual of 216
Orchid notes 217
Orchids at Lythe Hill ... 212
Ornithidium ochraceum 209
Pears, a selected list of... 218
Roses 209, 215
Societies :—
Royal Horticultural, 215, 222
Scottish Horticultural Association 221
Trade Notices 220
Trees and shrubs... ... 213
,, measuring the height of ... 220
Weather in Yorkshire ... 219

ILLUSTRATIONS.

Æthalium vaporarium 222
Cypripedium Boxalli var. atrata 210
Kalanchoe carnea 211
Maximiliana regia. (See Supplement.)
Pear Bergamotte Cadette 219
,, Beurré d'Aremberg 218
,, Glou Morceau 218
,, Passe Colmar 218
,, Winter Nelis 219

HUDDERSFIELD CHRYSANTHEMUM SOCIETY.
The FOURTH EXHIBITION of the above Society will be held in the Town Hall, Huddersfield, on FRIDAY and SATURDAY, November 11 and 12, 1887.
JOHN BELL, Sec.

LILIUM AURATUM. — Good, plump, sound Bulbs, 6s., 9s., 12s., 18s., and 24s. per dozen; extra strong, 20s. and 42s. per dozen. All other good LILIES at equally low prices.
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PRUNUS MYROBALANA, or CHERRY PLUM.—The best stuff for Mending Old Fences or Making New Ones. Grows fast in poorest soils. Much stronger than Whitethorn. It is also an excellent Stock for the Plum. A sample hundred, 2 to 3 feet, sent on receipt of 6s., 50 for 3s. Full further particulars of
EWING AND CO., Sea View Nurseries, Havant, Hants.

Strawberries a Specialty.
LOVEL'S STRAWBERRY PLANTS, 100, 2s. 6d.; 500, 10s.; 1000, 15s.
Sample and Pamphlet, 3d. Select LIST free.
W. LOVEL AND SON, Strawberry Growers, Driffield.

CHRYSANTHEMUMS, strong rooted, Princess of Teck, Ethel, Fair Maid of Guernsey, Boule de Neige, Elaine, Sœur Melanie, and others, £3 per 1000.
LARSEN, St. Thomas' Nursery, Exeter.

FOR SALE, 3000 GENISTAS, in Thumbs, for cash, at 7s. per 100. Post-office Orders payable at Leyton Green.
T. BALDWIN AND SON, Edith Nursery, Burchall Road, Leyton.

FOR SALE, at moderate prices, a quantity of the leading varieties of GRAPE VINES, of different ages. Apply
W. HALL, 82, High Street, Cheltenham, or Treelands, Leckhampton.

For Present Sowing.
SUTTON'S PRIZE LAWN GRASS SEEDS. DIPLOME D'HONNEUR, AMSTERDAM, 1883.

SUTTON'S PRIZE LAWN GRASS SEEDS. Special Gold Medal, Melbourne, 1880.

SUTTON'S PRIZE LAWN GRASS SEEDS. Prize Medal, Paris, 1878.

SUTTON'S PAMPHLET ON LAWNS, their Formation and Improvement, gratis and post-free.

SUTTON AND SONS, SEEDSMEN, by Royal Warrants, to H.M. the Queen, and H.R.H. the Prince of Wales, Reading.

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JOHN WATERER AND SONS, Bagshot, Surrey, are the Great Exhibitors of Hardy Scarlet and White RHODODENDRONS.
Their CATALOGUE is ready, and may be had on application.

Reduced Prices to meet Depression.
DESCRIPTIVE CATALOGUE, comprising fine transplanted FRUIT TREES, ROSES, Hardy CLEMATIS, RHODODENDRONS, CONIFERS, TREES and SHRUBS, CLIMBERS, FOREST TREES, &c., free on application to
GEO. JACKMAN AND SON, Woking Nursery, Surrey.

Begonias a Specialty.
LAING'S BEGONIA SEED.—Awarded Two Gold Medals. From Prize Plants, in sealed packets. Choice mixed, from single varieties, 1s., 2s. 6d., and 5s. per packet; double varieties, 2s. 6d., 3s. 6d., and 5s. per packet. Collections—12 named varieties, separate, 5s. 6d.; 6 ditto, 3s. Order direct from us, to procure the genuine seed.
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THOMAS METHVEN AND SONS offer their choice strain of the above, in five varieties, viz., Scarlet, Purple, White, Crimson, and White Wall-leaved, at 1s., 2s. 6d., & 5s. each colour. Price to the Trade on application.
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WHITTAKER AND WHITEHEAD are offering Seed of their choice strains of the above in packets, 7d. each, post-free.—Ferreby Nursery, Breadsale, Derby.

HAMPTON COURT BLACK HAMBURGH VINES.—Extra strong Fruiting Canes of the above, and all other leading varieties, at greatly reduced prices.
T. JACKSON AND SON, Nurseries, Kingston-on-Thames, and Royal Kitchen Gardens, Hampton Court.

MESSRS. GREGORY AND EVANS, NURSERYMEN, Sidcup, and 285, 286, 287, 288, Flower Market, Covent Garden, W.C., are open to RECEIVE CONSIGNMENTS of Choice CUT FLOWERS in any quantity for their Commission Department. Boxes and Labels supplied.
Telegraph Address—"COMMISSION, SIDCUP."

Floral Commission Agency.
A. HILL AND CO., 52, Hart Street, Covent Garden, W.C., are open to RECEIVE CONSIGNMENTS of Choice CUT FLOWERS in any quantity. A. H. & Co., giving personal attention to all consignments, are thus enabled to obtain the highest market prices. All Cheques forwarded weekly. Bankers and good Trade references. Boxes and Labels supplied.

WANTED, Choice CUT FLOWERS and FOLIAGE, viz., White Roses, Eucharis, Orchids, Bouvardias, Lilacs, Daffodils, &c.
G. S. POUNCE, 18, Westbourne Grove, W.

WANTED, healthy Plants of the following FERNS:—Adiantum cardiochlæna, A. curvatum, A. amabile, A. Victoria, A. Veitchii, Pteris scaberula, and Gonophlebium appendiculatum. State size and prices to
PTERIS, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

WANTED TO PURCHASE, Fidler's Reading Giant, Covent Garden Perfection, and Woodstock Kidney POTATOS. State quantity and lowest prices to
C. FIDLER, Friar Street, Reading.

English Oaks and Spanish Chestnuts.
FOR SALE, about 80,000 2-yr. Seedlings of the above. For samples and price apply to
J. HARTNELL, Houghton Hall, Swaffham, Norfolk.

Roses.
H. LANE AND SON have still a large stock to select from. Standards, 12s. to 15s. per dozen; Half-standards, 9s. to 12s. per dozen; Dwarfs, 6s. to 9s. per dozen. All leading kinds. CATALOGUE on application to
The Nurseries, Berkhamsted, Herts.

Vegetable and Flower Seeds.
THE LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, have to state that their Illustrated and Descriptive CATALOGUE of Vegetable and Flower Seeds is now ready, and will be sent post-free on application.
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H. LANE AND SON can supply fine Standard PEARS, PLUMS, APPLES, DAMSONS, &c. Sorts most suitable for profit. Descriptive CATALOGUE free.
The Nurseries, Berkhamsted, Herts.

Kent, the Garden of England.
FRUIT TREES, true to name.
The largest and best Stock in Britain.
GEORGE BUNYARD AND CO., Maidstone.
P.S.—Send direct: no Agents.

Grape Vines and Strawberries (in pots).
FRANCIS R. KINGHORN offers very fine stocks of the above in all leading varieties, true to name. LIST and Prices on application.
Sheen Nurseries, Richmond, Surrey.

PARROTT BROTHERS, Normandy, Guildford, can supply, free on rail, fine RASPBERRY CANES, 3 to 5 feet, at 10s. per 1000, either Carter's Prolific or Fastolf.

The New Raspberry.
LORD BEACONSFIELD, (A Seedling.)
The finest Raspberry and best cropper ever known. First-class Certificate, Royal Horticultural Society, 1883.
Large Canes. £3 per 100, 9s. per dozen.
Usual allowance to Trade. 5 per cent discount for prompt cash. A. FAULKNER, Inkpen, Hungerford.

To Seed Merchants.
FOR SALE, about 60 Bushels of SEED PEAS —MacLean's Wonderful. For samples apply
Mr. JAMES BOLTON, Farmer, Buntingford, Herts.

Mangel Wurzel and Turnip Seeds.
H. AND F. SHARPE are now prepared to make special offers of home-grown MANGEL WURZEL and TURNIP SEEDS, raised in 1886 from specially selected Bulbs. The quality is excellent and the prices are very low.
Seed Growing Establishment, Wisbech.

HENRY ORMSON AND CO., HORTICULTURAL BUILDERS and HOT-WATER ENGINEERS, Stanley Bridge, King's Road, London, S.W. Designs for Conservatories, Greenhouses, and Heating by Hot-water free on application. See large advertisement, Feb. 5, p. 191.

ORCHID PEAT—a specialty!—WOOD AND SON are now cutting from THE NEW ESTATE (the only estate celebrated for its special quality of Orchid Peat). Send for Sample. Special Quotations. Our Jubilee Annual, "Ye Little Booke for ye Garden," gratis with Catalogue, post-free on application.—Wood Green, London, N.

IMPORTANT to ORCHID GROWERS.
Special offer of Light Brown ORCHID PEAT, full of Pure Bracken fibre:
also a good GENERAL PEAT,
Quotation with sample on application to
THE PEAT ASSOCIATION,
10, Cullum Street, London, E.C.
Sole Agent for the Continent—E. J. Vodte, Zeist, Holland.

BEESON'S MANURE is the best for all Horticultural Purposes. Sold in tins, 1s., 2s. 6d., 5s. 6d., and 10s. 6d., or 1 cwt. bags, sealed, 13s. each. By all Nurserymen or Seedsmen, or direct from Carbrook Bone Mills, Sheffield. Also pure CRUSHED UNBOILED BONES, any size, and guaranteed of the best quality.

SALES BY AUCTION.

Wednesday Next—(Sale No. 7349).
Special Sale of ORCHIDS in FLOWER and BUD.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, February 16, at Half-past 12 o'Clock precisely:—A fine collection of ORCHIDS in FLOWER and BUD, comprising some grand forms of Odontoglossum Alexandræ, O. Pescatorei, O. Rossi majus, O. blandum, O. Andersonianum, O. luteo purpureum, strong specimen with ten spikes; Cœlogyne cristata, including two large masses with nearly 400 bulbs each and many spikes, also several plants of the Chatsworth variety. Dendrobium Ainsworthii and D. Wardianum, Cattleya Trianæ, with 26 bulbs and 9 flowers, &c. Also a complete series of Edward's Botanical Register and other Horticultural Works.

On view morning of Sale, and catalogues had.

Wednesday and Thursday Next.

15,000 grand Bulbs of LILIUM AURATUM, just imported from Japan, in the finest possible condition (some in cases as received).

MR. J. C. STEVENS will include the above in his SALES by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY and THURSDAY NEXT, February 16 and 17,

On view mornings of Sale, and Catalogues had.

Wednesday and Saturday Next.

First-class Standard and Dwarf ROSES, including most of the leading varieties; Pyramid and Dwarf-trained FRUIT TREES, Hardy ORNAMENTAL SHRUBS and CONIFERS, BORDER PLANTS in quantity, LILIUMS, GLADIOLI, &c.

MR. J. C. STEVENS will SELL the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY and SATURDAY NEXT, February 16 and 19, at half-past 12 o'Clock precisely each day.

On view mornings of Sale, and Catalogues had,

Thursday Next.—(Sale No. 7350).

CATTLEYA MENDELII, grand importation.
ONCIDIUM, new, from the Roraima Mountain.
ANGRÆCUM SANDERIANUM.
,, SCOTTIANUM.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, February 17, at half-past 12 o'Clock precisely, by order of Mr. F. Sander, a really wonderful importation of the beautiful CATTLEYA MENDELII, embracing masses of extraordinary size, being very compact and in superb health, with large and broad green leaves. Many distinct and short-bulbed masses will be found among the importation, and are the grandest lot we have had the pleasure to offer, the whole being in splendid condition. At the same time will be offered a fine new ONCIDIUM from the Roraima Mountain, which will shortly be described by Professor Reichenbach; strong healthy growing plants of ANGRÆCUM SCOTTIANUM, fine pieces of CATTLEYA MOSSIÆ MATUTINA, CATTLEYA LAWRENCEANA, ANGRÆCUM LEONII, MASDEVALLIA WALLISII, several distinct LYCASTE SKINNERII in flower, fine varieties of ODONTOGLOSSUM ROSSII MAJUS in flower, several new and fine ANGRÆCUMS, and many other ORCHIDS.

On view morning of Sale, and Catalogues had.

Horsham, Sussex.
WITHOUT THE SLIGHTEST RESERVE.
To Nurserymen, Horticulturists, and Others.

MESSRS. KING AND CHASEMORE have received instructions from Messrs. Allman to SELL by AUCTION, without the slightest reserve, upon the Premises, on MONDAY, TUESDAY, WEDNESDAY, THURSDAY, and FRIDAY, February 14, 15, 16, 17, and 18, the whole of the exceedingly valuable and well-grown NURSERY STOCK, standing upon the East Street Nurseries, Compton's Brow Nursery, and Broadbridge Heath Nursery, including a great quantity of Coniferæ, amongst which will be found Araucaria imbricata, Cedrus Deodara, Cryptomeria, Cupressus Lawsoniana, Juniperus, Picea, Pinus austriaca, Retinospora, Thuia aurea, T. gigantea, Thuiopsis, Common Spruce and Larch, &c.; well-grown Hardy Evergreens, including Aucuba, Berberis, Box, Holly, Laurus rotundifolia, Common Laurel, Portugal ditto, Yew, &c.; also a great quantity of Forest Trees and Ornamental Shrubs, including well-grown Limes, Beech, Poplar, Birch, Plane, Sycamore, &c.; a fine collection of Irish and other Ivies, 115,000 Quicks, &c.; about 3000 Rose Trees in choice varieties; well-trained Fruit Trees, amongst which will be found the best descriptions of Peach, Nectarine, Plum, Cherry, Pear, Apple, Gooseberry, Currant, and Raspberries; strong plants of Rhubarb and Asparagus; Herbaceous Plants, &c., comprising Tritoma, Dielytra, Hyacinths, Anemone, Violets, Pæony, common White Lily, &c. The valuable Stove and Greenhouse Plants include well-grown Palms, Dracænas, Lapageria, Bouvardia, Alocasia, Aralia, Beaucarnea, Stephanotis, Hoya, Solanums, Ericas, Coleus, Camellias, Azaleas, Epacris, Cyclamen; Maidenhair, Adiantum, and other choice Ferns; fine Pelargoniums, great variety of Geraniums, Fuchsias, Liliums, Dahlias, and Bedding-out Plants. Also the whole of the various Erections of GLASSHOUSES, including the Greenhouses, Stove-houses, Show-house, and Forcing-pits, together with the whole of the Hot-water Pipes and Furnaces, quantity of corrugated galvanised iron Roofing. A useful Chestnut Cob, Grey Cart Mare, strong four-wheel Van, Scotch Manure Cart, light Spring Cart, Six Sets of Harness, Hand Trucks, Wheelbarrows, Ladders, Flower-pots, Garden Tools and requisites, Carpenter's Bench, Paint Cans, Miscellaneous Items, quantity of Manure and Garden Mould, and Two Ricks of Meadow Hay.

Sale to commence, on Monday, Tuesday, Thursday, and Friday, at half-past 10 A.M., and on Wednesday at 1 o'Clock.

Catalogues may be obtained at the Hotels and Inns in the neighbourhood, and of Messrs. KING AND CHASEMORE, Auctioneers and Valuers, Horsham, Sussex.

Tuesday Next.

400 Choice named Standard and other ROSES, Standard and Trained FRUIT TREES, Conifers in variety, CAMELLIAS, AZALEAS, and other plants, without reserve.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at the City Auction Rooms, 38 and 39, Gracechurch Street, E.C., on TUESDAY NEXT, February 15, at 12 o'Clock precisely.

On view morning of Sale. Catalogues had at the Rooms, and of the Auctioneers, 67 and 68, Cheapside, E.C.

Tuesday Next.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander, to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, February 15, at half-past 12 o'Clock precisely, a grand lot of rare and fine ESTABLISHED ORCHIDS in superb health and condition, including many specimens. Amongst them will be found the following:—

Aërides Ballantineanum	Angræcum Scottianum, large specimen
Cœlogyne cristata maxima	Cattleya Percivaliana, fine variety in flower
,, ,, Lemoniana	,, Skinneri alba
,, Rossiana	Lælia elegans, large specimens
,, thuniana	,, ,, Schilleriana
Cypripedium Godefrayæ, specimen plant	,, anceps Sanderiana
,, Dauthierii verra	Masdevallia Wagneriana, over 100 leaves
,, Binotii, splendid plant	Renanthera matutinæ
,, Io	Odontoglossum niveum majus
Dendrobium splendidissima, fine plant in bloom	Lycaste Skinneri, specimen in bloom
,, nobile Cooksonii	
,, hercoglossum, specimen plant (rare)	

On view morning of Sale, and Catalogues had.

Crawley, Sussex.
Three miles from Three Bridges (Main Line). and two miles from Crawley stations.

TWO DAYS' SALE of WELL GROWN NURSERY STOCK, by order of Messrs. J. Cheal & Sons. Important to those engaged in planting.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, the Lowfield Nurseries, Crawley, on TUESDAY and WEDNESDAY, February 15 and 16, at 12 o'Clock precisely each day, several Acres of valuable well grown NURSERY STOCK in excellent condition for removal, including 1100 choice specimen Conifers, 3 to 12 feet, carefully grown for effective planting; 6000 Laurels of sorts, 1½ to 6 feet; 500 Rhododendrons, 2 to 4 feet; 750 Arbor Vitæ, 3 to 5 feet; 6000 Spruce Firs, 2 to 9 feet; 1250 Scotch Firs, 3 to 4 feet; 2000 fine Standard Trees, 5 to 12 feet; 1500 half Standard and Dwarf Roses; 8500 Fruit Trees, including Standard, Pyramid, and Dwarf-trained Apples, Pears, Plums, Cherries, &c.; 5000 Bush Fruit Trees, and other Stock.

May now be viewed. Catalogues may be had on the Premises, or of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C., and Leytonstone.

N.B. The Auctioneers beg to draw the attention of intending purchasers to the above Stock, which is worthy of inspection.

Wednesday Next.

5000 LILIUM AURATUM, unusually fine Bulbs, just received from Japan.

MESSRS. PROTHEROE AND MORRIS will include the above in their SALE at their Auction Rooms, 67 and 68, Cheapside, London, E.C., on WEDNESDAY NEXT, February 16.

On view morning of Sale, and Catalogues had.

Every Wednesday and Saturday.

SALES of CAMELLIAS, AZALEAS, PALMS, and other plants in variety from Belgium and elsewhere; LILIUM AURATUM, and a collection of beautiful IRIS from Japan (see native drawings); 500 choice named Standard and Dwarf ROSES, FRUIT TREES, CARNATIONS, PICOTEES, English-grown and other LILIES, and a great variety of HARDY BULBS and PLANTS.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., EVERY WEDNESDAY and SATURDAY, at half-past 12 o'Clock precisely each day.

On view morning of Sale, and Catalogues had.

Friday Next.
IMPORTED and ESTABLISHED ORCHIDS.

MESSRS. FROTHEROE AND MORRIS will include in their SALE on FRIDAY NEXT, February 18, from Messrs. Shuttleworth, Carder, & Co., IMPORTED and ESTABLISHED ORCHIDS in variety, including a very fine lot of Odontoglossum Alexandræ of the best type, also several fine masses of the new and rare Saccolabium cœleste and the rare Aërides mitratum collected by Mr. C. Roebelen, together with a quantity of ESTABLISHED ORCHIDS, and other property.

On view morning of Sale, and Catalogues had.

Friday Next.
1500 CATTLEYA MENDELII.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. J. Charlesworth, of Heaton, Bradford, to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, February 18, at half-past 12 o'Clock precisely, one of the finest importations of CATTLEYA MENDELII ever offered. The plants have been collected by Mr. W. Hennis in three different districts, and are offered separately. They are believed to be far superior in size and colour to the ordinary varieties; the plants are in splendid condition, and include specimens of extraordinary size: some very distinct-looking pieces will be found amongst them; also an EPIDENDRUM, in the way of MACROCHILUM, with reddish-purple lip. Dried flower-spikes will be shown.

On view morning of Sale, and Catalogues had.

Orchids in Flower.—Feb. 22.

MESSRS. PROTHEROE AND MORRIS beg to announce that their NEXT SPECIAL SALE will take place as above, for which they will be glad to RECEIVE NOTICE of ENTRIES by WEDNESDAY NEXT.

Hertford.

GREAT UNRESERVED CLEARANCE SALE of the whole of the well grown NURSERY STOCK, standing on the several grounds known as Campbells, Camp Hill, Lloyd's, Fisher's, Sandy Lane, Brandon's, Orchard, Brickfields, New Field, Lower Ground, Camp Hill Cottage, and Dimsey's Garden.
FIVE DAYS' SALE.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Francis Bros., to SELL by AUCTION, without reserve, at the several Nurseries as mentioned above, and all within a few minutes' walk of the Hertford Railway Stations, on MONDAY, February 21, and four following days, at 12 o'Clock punctually each day, the whole of the valuable NURSERY STOCK, comprising:—

50,000 Evergreen, Coniferæ, and Deciduous Shrubs, amongst which are splendid specimen Cupressus and Pinus, of sorts; 5000 Portugal and other Laurels, 1 to 4 feet; 7000 Pinus, Scotch, and Spruce Firs, 2 to 5 feet; 3000 green and variegated Hollies, 1 to 3 feet; 1000 Aucubas; 1000 English Yews.

75,000 Larch, 25,000 dwarf and standard Roses; 100,000 Manetti stocks and cuttings; 30,000 Rose stocks, all in dormant bud, worked with the newest and most approved varieties, and forming altogether one of the finest collections in the trade; 50,000 Ornamental and Forest Trees, including 25,000 Limes, Poplars, Beech, Birch, and Chestnuts; 12,000 Fruit Trees, 10,000 Gooseberries and Currants; some hundreds of Orchard Fruit Trees; 25,000 capital bricks, stack of Hay, &c.

May be viewed any day (Sundays excepted) prior to the sale. Catalogues may be had of Mr. THOMAS, the Foreman at the Nurseries; at the Salisbury Arms and Dimsdale Arms, Hertford; of E. K. FRANCIS, Esq., Solicitor, 4, Great Winchester Street, London, E. C.; and of the Auctioneers, Estate Agents, and Valuers, 67 and 68, Cheapside, London, E.C., and Leytonstone.

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LARCH, 1½ to 2, 2 to 3, 3 to 4, and 4 to 5 feet.
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OAKS, 1½ to 2, 2 to 3, and 3 to 4 feet.
BEECH, 1½ to 2, 2 to 3, 3 to 4, and 4 to 5 feet.
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ALDERS, 1½ to 2, 2 to 3, 3 to 4, and 4 to 5 feet.
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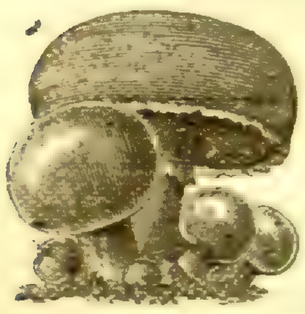

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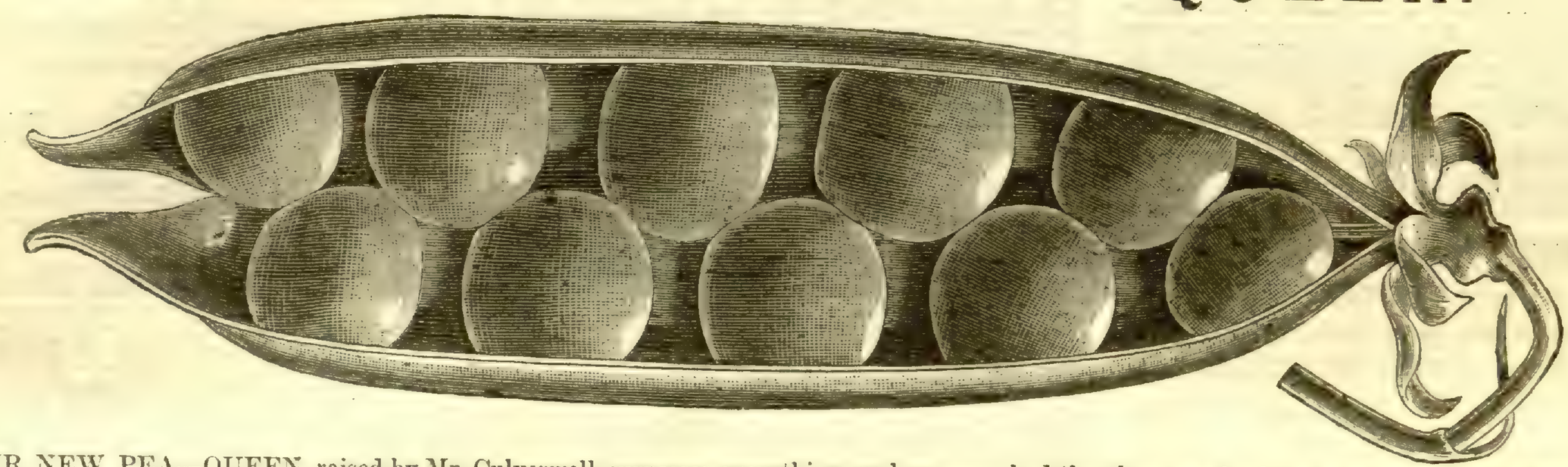

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ECONOMY and EXHIBITION. ABUNDANCE PEA: height 2 feet (9*d*. per pint, carriage paid). When harvesting I have counted over eighty pods on a single plant of Abundance.

DUKE of ALBANY PEA, for Exhibition (1*s*. per pint, carriage paid).

EVOLUTION PEA, for Exhibition (1*s*. per pint, carriage paid). From their introduction till now the above have been so carefully selected that they cannot be surpassed.

W. G. HOLMES, Seed Grower, Tain, N.B.

Special Offer.

ISAAC MATTHEWS AND SON have for Sale 500,000 RHODODENDRONS, varying in size from 4 to 6 inches up to 2 to 3 feet—Cunningham's White, Jacksoni, caucasicum, pictum, Seedling Hybrids, Hybrid ponticum, and named varieties; good bushy plants. HOLLIES, CONIFERS, FOREST TREES in large quantities; AUCUBAS, YEWS, and other Nursery Stock. CATALOGUES now ready, and may be had, gratis and post-free, on application to the Nurseries, Milton, Stoke-on-Trent.

Our Nurseries are 110 acres.

ALDER, 3 to 4 feet, 22*s*. per 1000; ASH, 2 to 3 feet, 17*s*. per 1000; ditto, 1½ to 2 feet, 12*s*. 6*d*. per 1000. BIRCH, 2 to 3 feet, 20*s*. per 1000. SPANISH CHESTNUT, 2 feet, 18*s*. per 1000. ELM, 2 to 3 feet, 16*s*. per 1000; ditto, 3 to 4 feet, 20*s*. per 1000. LARCH, 1 to 1½ foot, 12*s*. 6*d*. per 1000; ditto, 1½ to 2 feet, 14*s*. per 1000; ditto, 2 to 2½ feet, 16*s*. per 1000; ditto, 2½ to 3 feet, 18*s*. per 1000; ditto, 3 to 4 feet, 22*s*. per 1000; ditto, 5 to 6 feet, 35*s*. per 1000. SPRUCE FIR, 1 to 1½ foot, 10*s*. per 1000; ditto, 1½ to 2 feet, 12*s*. per 1000; ditto, 2 to 2½ feet, 16*s*. per 1000; ditto, 3 feet, bushy, 10*s*. per 100. SCOTCH FIR, 1 to 1½ foot, 13*s*. per 1000; ditto, 2 to 2½ feet, 18*s*. per 1000. HAZELS, 3 feet, 20*s*. per 1000. OAKS, 2 to 3 feet, 17*s*. 6*d*. per 1000. SYCAMORE, 2 to 3 feet, 16*s*. per 1000; ditto, 3 to 4 feet, 20*s*. per 1000. THORNS, 1½ to 2 feet, 14*s*. per 1000. ditto, 2 to 2½ feet, 16*s*. per 1000; ditto, 3 feet, 20*s*. per 1000. PRIVETS, 2 to 3 feet, 16*s*. per 1000. PRIVETS, OVALIFOLIUM, 2 to 2½ feet, 30*s*. per 1000; ditto, 4 feet, extra bushy, 12*s*. per 100. BEECH, 1½ to 2 feet, 16*s*. per 1000; ditto, 2 to 2½ feet, 18*s*. per 1000. MYROBALAN PLUM, 2 feet, 25*s*. per 1000. Special offer by 50,000 and 100,000.

GARLIES MITCHELL, Nurseryman, Stranraer.

BEGONIA SEED.—Box's Jubilee varieties, choicest from latest prize singles, per packet, 1*s*. and 2*s*. 6*d*; double, the most reliable, very special, per packet, 2*s*. 6*d*. and 5*s*; very extra pure double white, per packet, 5*s*. and 10*s*. Sow now. See other Advertisement of Tubers.

J. R. BOX (for last ten years J. Laing's partner), Surrey Seed Warehouse, Croydon.

CHEAP CLEARANCE OFFER.—LAUREL, CAUCASICUM, 12 to 18 inches, 5*s*.; 2 to 3 feet, 12*s*. COLCHIC, 1½ to 2 feet, 8*s*.; 3 to 4 feet, 16*s*.; 4 to 5 feet, 20*s*. COMMON, 12 to 18 inches, 4*s*. LATIFOLIA, 12 to 18 inches, 9*s*; 2 to 3 feet, 14*s*. ROTUNDIFOLIA, 12 to 18 inches, 7*s*.; 2 to 3 feet, 15*s*. PRIVET, oval-leaved, 2 to 3 feet, 4*s*. IVY, Irish, 2 to 3 feet, 7*s*. All per 100. ALDER, 2 to 3 feet, 18*s*. ASH, common, 20*s*. BIRCH, 2 to 3 feet, 18*s*. LARCH, 1½ to 2 feet, 15*s*.; 2 to 2½ feet, 18*s*. QUICK, 2 to 2½ feet, 18*s*. SYCAMORE, 2 to 2½ feet, 17*s*. 6*d*. All per 1000. Samples on application.

J. J. MARRIOTT, Walsall, Staffordshire.

RHODODENDRONS.—Well budded, choice named kinds, 21*s*., 24*s*., and 30*s*. per dozen. Thousands to select from.

JOHN STANDISH AND CO., Royal Nurseries, Ascot.

YES; YOU MAY SAFELY PLANT WILSON JUNIOR BLACKBERRY, or any sort of Raspberries, between now and April. A correspondent writing to Messrs. Viccars Collyer & Co., Leicester, asks for advice, as his Blackberries had grown 20 feet long. This should not have been permitted, as, if they had been cut down to three feet, all that strength would have gone into lateral. Viccars Collyer & Co. have a good stock of 2-yr. old plants at their Nurseries, which they are now sending out at 7*s*. per doz., carriage paid.

Address, VICCARS COLLYER AND CO., Central Hall, Leicester.

VERBENAS—VERBENAS—VERBENAS.—Eleven First-class Certificates have been awarded by the Royal Horticultural Society for this strain. Seed, now ready, 1*s*. 6*d*. per packet.

LIST of the new varieties sent free on application to W. STACEY, The Nurseries, Dunmow.

NEW PLANT AND BULB COMPANY, Colchester.

No. 81. Our SPECIAL LIST of ORCHIDS.
No. 84. Our GENERAL LIST of LILIES, NARCISSI, &c.
No. 85. Our SPECIAL LIST of IRIS.
No. 86. Our SPECIAL SPRING LISTS of LILIES, GLADIOLI.

Triumph Pea.

E. PLOWMAN AND SON are offering this grand BLUE WRINKLED MARROW PEA to the Public at a greatly reduced price. After two years careful trial against 18 older varieties, they have no hesitation in pronouncing it as very far advanced over other varieties which have borne good characters. It has strong constitution, quality A1, and produces 50 to 70 pods from one plant, averaging 9 to 11 Peas; height, 3 to 4 feet. Per pint, 1*s*. 6*d*.; per quart, 2*s*. 9*d*. Sent carriage paid to any address upon receipt of P.O.O.

Nurserymen, Seedsmen, and Florists, High Street, Market Harborough.

The Largest and Best New Pea.

LAXTON'S "WALTON HERO," from Telephone, by British Queen. First-class Certificate, Chiswick. Half pint, 2*s*. Laxton's "Open-air" TOMATO, the only reliable outdoor Tomato, 1*s*. 6*d*. per packet. Laxton's "Sandy Prize" ONION, the finest and truest Onion, half ounce, 1*s*. The largest podded RUNNER BEAN in the world, Laxton's "Czar." First-class Certificate, Shrewsbury. Half pint, 2*s*. The best LONGPOD BEAN, Laxton's "John Harrison." First-class Certificate, Royal Horticultural Society. Pint, 2*s*. With other choice novelties, in sealed packets, from

T. LAXTON, Seed Grower, Bedford.

ANDRE LEROY'S Nurseries at Angers, France, the largest and richest in Europe in Collections of FRUIT and ORNAMENTAL TREES, SHRUBS, CAMELLIAS, ROSES, SEEDLINGS, STOCK FRUIT TREES, &c. CATALOGUES sent on application. Freight from Angers to London is very moderate. Medal of Honour at the Universal Exhibition at Paris in 1878.

Orders must be addressed to Messrs. WATSON AND SCULL, 90, Lower Thames Street, London, E.C.

W. H. ROGERS, Red Lodge Nursery, Southampton, offers at a low price, Hardy Scarlet and White RHODODENDRONS, dwarf, bushy plants, and Standards with straight stems and good heads; PINUS INSIGNIS and P. RADIATA, 1 to 2 feet, very fine; CUPRESSUS MACROCARPA, 3 to 5 feet, C. DENSA, 1½ to 2½ feet; RETINOSPORA PLUMOSA AUREA and THUIA LOBBI, 2 to 4 feet; and every other description of well grown NURSERY STOCK, extending over 60 acres.

SPECIAL OFFER.

GEE'S Superior BEDFORDSHIRE-GROWN

CABBAGE PLANTS

Can now be supplied in any quantities, as follows, for cash, for present orders:—

Early Enfield Market, Gee's fine selected; New Early Offenham, said to be the best early variety in cultivation; New Early Rainham, Nonpareil, York, New All Year Round, Nonsuch, Large Drumhead (extra fine), and Thousand Head Kale. All at 3*s*. per 1000 of 1200, on rails; 1*s*. 6*d*. per 100, post free. Red Pickling (extra fine), 5*s*. per 1000, on rails; 2*s*. per 100, post free.

LETTUCE PLANTS.

Gee's New Giant Brown Cos, and other kinds, 7*s*. 6*d*. per 1000, on rails; 1*s*. 6*d*. per 100, post free.

ASPARAGUS ROOTS.

True Giant, three years old, 2*s*. per 100, 15*s*. per 1000; four years old, 3*s*. 6*d*. per 100, 30*s*. per 1000.

QUICKS

(any quantity to offer, and F. Gee will not be undersold with these by any grower in England).—Fine planting stuff, two years old, 8*s*.; three years, 10*s*.; 5 years, for gap stopping, 20*s*. per 1000.

ONION SEED,

New and genuine (F. Gee's own growing):—White Spanish and Bedfordshire Champion, the best kinds, 1*s*. 9*d*. per pound, on rails; 2*s*. per pound post paid or carriage free.

POTATOS FOR SEED,

ALL THE BEST SORTS, CHEAP AND GOOD.

Special select CATALOGUES for Gardeners and Farmers; also special LIST to the Trade on application.

FREDK. GEE, Seed Grower, &c.,

RIVERFORD HOUSE, BIGGLESWADE, BEDFORDSHIRE.

RICHARD WALKER can supply the following for cash:—Early Rainham and Enfield Market, 3*s*. per 1000; Red Dutch, for pickling, 5*s*. per 1000; Connover's Colossal ASPARAGUS roots, splendid quality, 3-yr.-old, 20*s*. per 1000; SEAKALE, planting, 3*s*. per 100; White Spanish ONION Seed, 1*s*. 6*d*. per lb.; Nuneham Park Onion Seed, 1*s*. 9*d*. per lb.; Bedfordshire Champion, 2*s*. per lb. They are the very best stock. Splendid SEAKALE for forcing, 10*s*. per 100.

Market Gardens, Biggleswade, Beds.

"Imperator" Potato.

PETER LAWSON AND SON (Limited), Edinburgh, are prepared to Book Orders for the "IMPERATOR" POTATO, as sent out by them, also other leading kinds. Prices upon application.

GRAPE VINES.—Black Hamburgh and other Grape Vines suitable for fruiting in pots and planting vineries, unsurpassed for quality. Fruiting Canes, 7*s*. 6*d*. and 10*s*. 6*d*. each; planting Canes, 5*s*. each.

CATALOGUES, with full particulars, on application.

The LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, the Vineyard and Nurseries, Garston, near Liverpool.

Seed Peas.

FOR SALE, 80 Bushels of "DAY'S EARLY SUNRISE," true growth, at 7*s*. 6*d*. per bushel put on rail. Address, BAILIFF, Farm School, Redhill.

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VEGETABLE and AGRICULTURAL SEEDS.

H. AND F. SHARPE will be pleased to give special quotations for all their fine selected stocks of the above-named Seeds of 1886 growth. Their prices will be found very advantageous to purchasers.

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CALADIUM ARGYRITIS.—Sound dry bulbs, 6*s*. per dozen. Trade price on application.

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COCOA-NUT FIBRE REFUSE.

4*d*. per bushel; 100 for 25*s*.; truck (loose, about 2 tons), 40*s*.; 4-bushel bags, 4*d*. each.

LIGHT BROWN FIBROUS PEAT, 5*s*. 6*d*. per sack; 5 sacks, 25*s*.; sacks, 4*d*. each.

BLACK FIBROUS PEAT, 5*s*. per sack, 5 sacks, 22*s*.; sacks, 4*d*. each.

COARSE SILVER SAND, 1*s*. 9*d*. per bushel; 15*s*. per half ton; 26*s*. per ton, in 2-bushel bags, 4*d*. each.

YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1*s*. per bushel

SPHAGNUM MOSS, 8*s*. 6*d*. per sack.

MANURES, GARDEN STICKS, VIRGIN CORK, TOBACCO CLOTH, RUSSIA MATS, &c. Write for Price LIST.—

H. G. SMYTH, F.R.H.S., 21, Goldsmith's Street, Drury Lane (lately called 17A, Coal Yard), W.C.

COCOA-NUT FIBRE REFUSE, newly made. Truckload (2 tons), 15*s*.; 40 bags, 25*s*. Free on to Rail. L. B. and S. C. and S. E. Ry., 17*s*. 6*d*. Cash with order.

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SEEDS,

VEGETABLE, FLOWER, AND FARM,

Carefully Selected,

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THE BEST RESULTS

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THOMAS S. WARE,

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CUTBUSH'S MILL-TRACK MUSHROOM SPAWN.—Too well known to require description. Price, 6*s*. per bushel (1*s*. extra per bushel for package), or 6*d*. per cake; free by parcel post, 1*s*.

None genuine unless in sealed packages and printed cultural directions enclosed, with our signature attached.

WM. CUTBUSH AND SON (Limited), Nurserymen and Seed Merchants, Highgate Nurseries, N.

SPECIAL CULTURE.

RHODODENDRONS AND HOLLIES

Grown in Sandy Loam.

WHOLESALE AND RETAIL.

20,000 RHODODENDRON PONTICUM, 1, 2, 3, to 3½ feet.

10,000 RHODODENDRON HYBRIDUM CATAWBIENSE, 1, 2, 3, to 3½ feet.

5,000 RHODODENDRONS, Choice Named sorts. Upwards of 100 varieties—all fine bushy plants, well set with buds.

20,000 GREEN HOLLIES (for Hedges), &c., 1, 2, to 3 feet.

GOLDEN and SILVER QUEEN HOLLIES, Specimens, 2 to 4 feet.

Descriptive Priced Catalogue and Special Quotations for large quantities on application to

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KING'S ACRE NURSERIES,

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SUTTON'S POTATOS

For Forcing.

All who want the best Early Potatos for Table use should send at once to

SUTTON & SONS

For the following varieties:—

SUTTON'S EARLY ECLIPSE (Round).

Per 14 *lb.* 4/-
Per ½ *cwt.* 14/-

Especially valuable for forcing; white-fleshed, good shape, and, as regards quality, a decided advance on any other round variety.

"Your Early Eclipse is a great acquisition for frame work."—Mr. H. HARRIS, *Gardener to Mrs. Eversfield, Denne Park,*

SUTTON'S RINGLEADER (Kidney).

Per 14 *lb.* 4/-
Per ½ *cwt.* 14/-

A white-fleshed early Kidney Potato, and a really distinct and first-class variety.

"A grand cropper, splendid cooker, and will prove the best early Kidney ever offered to the public."—Mr. J. TEGG, *The Gardens, Bearwood.*

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Per 14 *lb.* 4/-
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Earlier, a heavier cropper, and shorter in the haulm than any other of the Ashleaf class.

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Per 14 *lb.* 3/-
Per ½ *cwt.* 10/6

Comes in at the same time as the Ashleaf class of Kidneys, and is an abundant cropper.

"Your Early Eclipse and First and Best have been the earliest and best round Potatos in the parish."—Mr. J. H. TRUAN, *Blackwater, Scorrier.*

SUTTON'S SEED POTATOS.

A Leading Article in the *Gardeners' Magazine* of February 10, 1883, contained the following remark:—Messrs. Sutton & Sons have a vantage-ground of their own, for they have sent out a series of varieties that have become renowned as 'disease-resisters.' As a matter of fact, Messrs. Sutton & Sons stand alone as the distributors of original and high-class varieties."

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ROYAL BERKS SEED ESTABLISHMENT,

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ROSES 20 ACRES.

Well-rooted, many shooted, truly named, of matured vigorous growth, and of the best kinds. BUSHES, R. S. & Co.'s selection, 8*s*. per dozen, 60*s*. per 100. STANDARDS, 15*s*. per dozen, 105*s*. per 100. Packing and Carriage Free for cash with order.

These World-famed ROSES cannot fail to give the greatest satisfaction.

ROSES IN POTS;

all the best New and Old English and Foreign sorts, from 18*s*. to 36*s*. per dozen.

Descriptive List free on application.

RICHARD SMITH & CO.,

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Hertford Nurseries.

Established upwards of 100 years.

E. W. AND J. O. FRANCIS beg to announce that, having PURCHASED the above well-known BUSINESS (lately conducted by Francis Bros.) these old-established Nurseries will on and after JANUARY 28, 1887, be carried on by them under the old style of

E. P. FRANCIS AND CO.

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"Planting Season."

"Unequalled for quality, Variety & Extent."

FOREST, FRUIT

& ALL OTHER

TREES & PLANTS.

ROSES EVERGREENS VINES &c

Descriptive Catalogues Post Free.

"James Dickson & Sons"

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TELEGRAPHIC ADDRESS CONFIDENCE CHESTER.

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FRUIT TREES,

SEVENTY-FOUR ACRES.

APPLES, PEARS, PLUMS, CHERRIES, PEACHES, NECTARINES, APRICOTS, and other FRUIT TREES, as Standards, Dwarfs, Pyramids, Bushes, Cordon, and Trained Trees in great variety.

VINES, excellent Canes, 3*s*. 6*d*. to 10*s*. 6*d*. Orchard House Trees in pots, PEACHES, APRICOTS, NECTARINES, &c., from 5*s*. FIGS from 3*s*. 6*d*.

DESCRIPTIVE LIST, containing a sketch of the various forms of Trees, with Directions for Cultivation, Soil, Drainage, Manure, Pruning, Lifting, Cropping, Treatment under Glass; also their Synonyms, Quality, Size, Form, Skin, Colour, Flesh, Flavour, Use, Growth, Duration, Season, Price, &c., free by post.

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HAVE THE BEST AND CHEAPEST STOCK OF HARDY

ORNAMENTAL TREES, FOREST TREES, AND FRUIT TREES,

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300,000 FRUIT TREES—true to name.

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THE OLD NURSERIES, MAIDSTONE,

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STRAWBERRIES.

Strong Roots, 4*s*. per 100. Plants in small pots, 16*s*. per 100; ditto in large pots, 25*s*. per 100. Descriptive LIST free.

RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

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SUTTON'S MAGNUM BONUM CAULIFLOWER, per packet, 3s. 6d., post-free.

NEW CAULIFLOWER FOR 1887.
SUTTON'S MAGNUM BONUM.

We have great pleasure in introducing this Cauliflower to our Customers as the finest and most delicately-flavoured variety we have grown. The heads, which are very large, are firmer than other Cauliflowers, of snowy whiteness, and the broad leaves are serviceable for shading the heads until ready for table. We recommend Sutton's Magnum Bonum as a succession to our First Crop, as it will produce an abundant supply from the time First Crop is over until Sutton's Favourite and Sutton's King are ready for use. The illustration fails to convey a true idea of the beautiful pure white solid appearance of the heads. Seed scarce, and early orders are advised.

Per packet, 3s. 6d., post-free.

SUTTON'S FIRST CROP CAULIFLOWER.

"Your First Crop Cauliflower is a beauty. I sowed it on the 27th January, and by the 27th May I was cutting beautiful white close heads from under hand-lights, and from the 7th to the end of June it was splendid out-of-doors," — Mr. H. Harris, *Gardener to* Mrs. Eversfield, *Denne Park.*

Per packet, 2s. 6d., post-free.

SUTTON'S FAVOURITE CAULIFLOWER.

A remarkably fine and distinct Cauliflower of level and compact habit, fit for use from seven to twelve days before Early London. It comes in as a good sucession to our Magnum Bonum, and should be grown by all who value a constant supply of Cauliflower. The heads are well set, firm, and delicately white.

Per packet, 1s. 6d. and 2s. 6d., post-free.

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SUTTON'S CHOICE NOVELTIES IN VEGETABLES, POTATOS, AND FLOWERS,
SEE
SUTTON'S AMATEURS' GUIDE.
The Largest and most Complete Seed Catalogue issued. Beautifully Illustrated. Price 1s., post-free. Gratis to Customers.

SUTTON & SONS, *Seedsmen by Royal Warrants to H M. the Queen and H.R.H. the Prince of Wales,* **READING.**

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CYCLAMEN PERSICUM "PRINCESS IDA."

CYCLAMEN PERSICUM "PRINCESS IDA."

First-class Certificate Royal Horticultural Society.

Referring to this splendid variety, the *Gardeners' Magazine* says:—"Mr. C. Edmonds sent three new Cyclamen, alike remarkable for their distinct colour, great beauty, and high-class quality, one of which, called Princess Ida, an exquisitely beautiful variety, the flowers of large size and splendid form, and of a delicate pink with rose base, received the distinction of a First-class Certificate."

Price, 2s. 6d. per Packet.

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A new and distinct variety, of great merit. As its name implies, it is of the Hearting type, but instead of the almost plain leaves of the old variety this is as closely curled as the finest Parsley; in addition to which the heart is much larger, more compact, and in every way superior. As the result of many years careful selection the character is quite fixed, and we feel sure that it only needs to be once grown to be highly appreciated.

Price, 1s. per Ounce.

WAITE'S JUBILEE CABBAGE.

A distinct dwarf growing variety, of exceptional merit, with *solid, heavy,* flat-topped heart, which is surrounded with *merely a fringe of loose outer leaves.* It is ready to cut about the same time as Early Rainham, but remains fit for use for a much longer time. As a Market Gardener's Cabbage it will be simply invaluable.

Price, 2s. per Ounce.

To be obtained from any respectable Seedsmen.

79, SOUTHWARK STREET, LONDON, S.E.

SEEDSMEN by ROYAL WARRANTS

To Her Majesty the Queen, and H.R.H the Prince of Wales.

WEBBS' SEEDS OF SUPERB FLOWERS

WEBBS' PREMIER DAHLIA

The Best Strain in Cultivation, 2s. 6d. per packet.

WEBBS' NEW PRIMULAS.

These are the most beautiful colours ever offered.

Webbs' Modesty	2s. 6d. and 5s.	per packet
Webbs' Purity	2s. 6d. and 5s.	,,
Webbs' Rosy Morn... ...	2s. 6d. and 5s.	,,
Webbs' Scarlet Emperor...	2s. 6d. and 5s.	,,
Webbs' Exquisite (Mixed)	1s. 6d. and 2s. 6d.	,,

From Mr. W. W. CRUMP, Gardener to the Right. Hon. the Earl Beauchamp.

"Webbs' New Primula 'Modesty' is a real gem, most floriferous, of good habit, and chaste in colour, as its appropriate name suggests."

	s.	d.	
Webbs' Superb Calceolaria ...	2	6	per packet
Webbs' Superb Cineraria	2	6	,,
Webbs' Double Cineraria	5	0	,,
Webbs' Perfection Cyclamen ...	2	6	,,
Webbs' Excelsior Gloxinia... ...	2	6	,,
Webbs' Show Pansy	2	6	,,
Webbs' New Hybrid Primrose ...	2	6	,,
Webbs' Bluebeard Lobelia... ...	1	0	,,
Webbs' Defiance Auricula	2	6	,,

☞ *All Seeds Free by Post or Rail.*

See WEBBS' SPRING CATALOGUE.

Post-free, 1s. Abridged Edition Gratis and Post-free.

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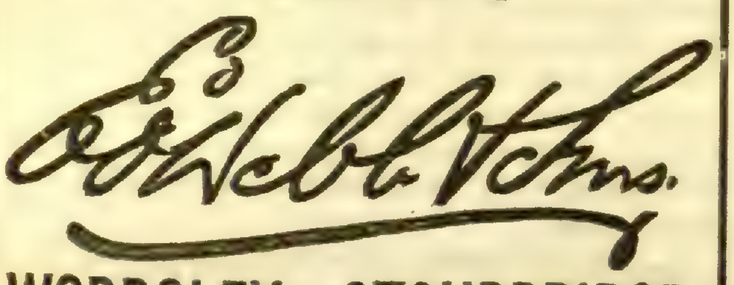

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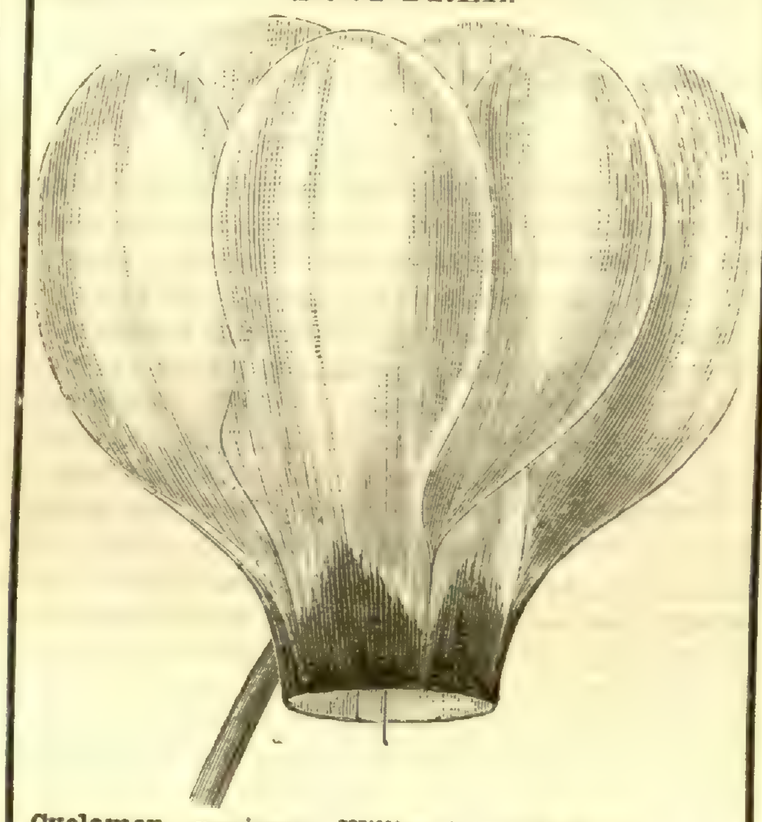
B.S.WILLIAMS'

GOLD MEDAL

CYCLAMEN AND PRIMULA,

POST-FREE.



Cyclamen persicum, Williams' Superb Strain, 1s. 6d., 2s. 6d., 3s. 6d., &	5	0
Cyclamen persicum, Albert Victor 2s. 6d. &	5	0
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As a Supplement to the "GARDENERS' CHRONICLE" for next week, Feb. 19, will be published an Ink-Photograph of THE TERRACE GARDENS at ALTON TOWERS.

THE

Gardeners' Chronicle.

SATURDAY, FEBRUARY 12, 1887.

GRAPES IN THE OPEN AIR.

IT is still a matter of controversy whether these fruits can be made to ripen profitably in the open in this country. That it was done in southern England away from the moist air of the coast, and especially on warm gravels, and with less success on clay soil, is proved by the experience of the last generation of gardeners, who succeeded in getting fair crops from open walls. Two important points were observed, namely, a warm rich soil, uncropped by anything else, and a wall or roof due south in aspect, to which to fasten them. The writer has a distinct recollection of seeing whilst in fruit and tasting the Sweetwater Grape at two places in the western suburbs of London. The one was in the garden of Stanley House, now St. Mark's Training College, Chelsea; and the other on an old house standing at the southern end of Park Lane, Kensington Gore, the site of which is now included in the gardens recently occupied by the Colonial Exhibition. In the first place named the then gardener grew his Vines, and Figs also, on an old wall built of a deep red-coloured brick, now less and less seen in the London district. Chelsea was then a suburban village, with stretches of market ground and open nursery gardens between it and London, so that the smoke-pall was not so dense as now. These red-brick walls are excellent heat stores, and well adapted for out-of-doors fruit culture, and for tender creepers and early flowering plants. The bunches of these Sweetwaters would measure from 9 inches to a foot in length, and full-sized berries, having been doubtless thinned; for these old craftsmen did not disdain to thin their outdoor Grapes and other things, and begrudged themselves no labour when such would assist to obtain fine products from their walls.

In the average of years the Grapes ripened thoroughly, assuming when ripe a greenish-yellow tint, pleasantly suggestive of lusciousness within. In hot years the greatest enemies to their preservation were the wasps, who are not bad judges of ripe and sugary fruits. At the other spot mentioned previously the Vines were

planted at the foot of the wall on the south side of the house, but had for many years left that part and become the umbrageous covering of the red-tiled roof of the dwelling, being trained to a rough latticework of wood.

Perhaps owing to the difficulty of pruning, thinning, and other needful operations, the Grapes were never fine in either bunch or berry, but still they got ripe and fit for table, and were much better eating than the Almeira Grapes of the shops of the present day.

It may be contended that, foreign Grapes being so cheap in price, there is no need to revert to these old methods, but that is not the point. There are many possessors of gardens who, holding only short leases of their houses, would be pleased to take up the cultivation of Grapes for their own pleasure and profit, where it can be done without the expensive additions of glass-houses and the rest. With the exception of the wasps, the only other enemy of which we need to take account is mildew. This invariably attacks the Vine in summers and autumns of unusual coolness, and is difficult of prevention or eradication, but the danger may be averted in a large degree by not attempting Grape growing in clayey districts, damp valleys, or in such sites as favour the development of the fungus, by reason of the moisture held in the air. Should the attack of mildew be a mild one remedies can be used to check its progress, the best of which are flowers of sulphur, but especially sulphide of potassium (see *Gardeners' Chronicle*, p. 246, August 21, 1886). Of sorts to plant, the best are the common Sweetwater, and its variety, the Ciotat, or Parsley-leaved; and Miller's Burgundy, the Chasselas, especially C. musque, and C. Gros Coulard, a large golden-yellow Grape. The kinds not commonly met with in this country, but which are grown in the vineyards near the northern limit of the Vine on the Continent, would most likely prove the best suited for out-of-doors cultivation, viz., Franc Riesling, early from Sahn; Blanc, from Notre Dames; Jacobs, from Champagne; Orleans Grapes, from Rudesheim. The Burgundy, which is of a purplish-blue, makes a compact bunch, being a good setter, and if thinning is practised the work must be taken in hand as soon as the berries are the size of small Peas.

The border for the Vines, which should be raised above the general level, should consist of the usual components of a Vine border, be well drained, and be made piecemeal up to a width of 6 feet; and so that the soil composing it might obtain all the heat possible, it should slope towards the sun. Every effort should be made to keep the Vine roots near the surface, and with this intent a border not more than 18 inches deep should be made, and the bottom should be formed of coal-ashes or chalk rammed hard. As regards pruning, the long-rod system gives the best results. *M. W.*

THE GEOGRAPHICAL DISTRIBUTION OF CORBULARIA.

Corbularias (Hoop-petticoat Varcissi) of late years having become popular decorative plants, the whole of the known forms being now introduced to cultivation, I think that a few notes on their characters and geographical distribution, derived from my own observations, may be acceptable to the Scientific Committee.

Although the greater number of the species of Narcissus have a wide geographical range, many of them spreading over the whole area occupied by the genus, the subsection Corbularia presents a contrast in the limited and compact area it occupies compared with the wide ranging of the entire genus Narcissus.

The Spanish peninsula is its metropolis, and beyond this its extension is very limited. It has a range of about 10° in latitude, from 35° to 45° N., and 12° in longitude, from 9° W. to 3° east. Forms of Corbularia are to be found throughout almost the entire Spanish peninsula, and they extend sparingly beyond the Spanish frontier into France, and along the North African coast, from Tangier, to the longitude of Algiers. The most northern recorded habitat is near Bordeaux, and the most south-eastern at Guelt-es-Stel, 150 miles south of Algiers, where I gathered Corbularia monophylla in the spring of 1873. Corbularias do not occur in the Balearic Islands.

The general impression left by the careful study of all the forms is that they are merely connecting links of one variable species which is indivisable by any well-marked boundary lines; and however different the extreme forms may appear, they are connected by insensible gradations between which there is no definite demarcation.

Flower Colouring.

Every form of Corbularia is self-coloured, and however much the forms and species vary in shade, the segments are invariably of the same colour as the corona, except that they are externally green; and the bicolor forms, such as occur in almost every other section of Narcissus, are never found in Corbularia. The filament is also invariably of the same colour as the corona and segments.

We find, however, two or three distinct sets of colouring, viz., white, primrose-yellow, and orange. I say sets of colouring, because, excepting the white, the other two colourings, primrose-yellow and orange, run through, as it were, in duplicate the entire series of forms, however variable they may be in stature; *e.g.*, we have large primrose-yellow forms and large orange forms, small primrose-yellow forms and small orange forms, and the same colour duplicates of every size. I have felt inclined to give the white Corbularia monophylla from North Africa, a separate sort of specific rank, from its invariable colouring of a kind that I was not aware occurred in any other form; but I have been somewhat shaken in this conviction by Mr. Tait's discovery near Oporto of a white form of Corbularia nivalis, the flowers of which are normally orange.

Habitats, Altitude, and Distribution.

The range in altitude is from near the sea-level to heights of from 6000 to 7000 feet, and my observations show that there are no strikingly prevalent highland or lowland forms; many of them having wide ranges of altitude. The habitats are generally moist, boggy places. The several forms are never intermixed, each occupying a distinct habitat; indeed I have only met with one case in which two different forms grow in proximity, and in this instance they were not associated, but occupied separate portions of the mountain pasture.

I shall, perhaps, be able to more clearly express the facts I have generalised by describing as an itinerary through Western France, Spain, Portugal, Morocco, and Algeria, mostly from my own observations, the successive forms of Corbularia that would be met with in such a tour.

French.

Commencing at Bordeaux: soon after leaving Bordeaux station, the moist healthy places in the Landes are at frequent intervals bespangled with the large sulphur-yellow form, which is also seen occasionally by the sides of the railway as Bayonne is approached; and the same large pale form is frequent near the sea-level in the neighbourhood of Biarritz. The following localities in France on the borders of the western Pyrenees may also be enumerated:—Gradignan and Teste, near Bordeaux, Agen, Dax, heathy places on Mount Olivet, and the Palombiers above Bagnères de Bigorre; Tarbes, between Bagnères de Bigorre: sandy places; Tiplo, near Fumel, Prades, Villefranche, Norlass, Pau, and between Biarritz and Cambo. It is also abundant on Monte de la Haya, at altitudes of from 2000 to 2400 feet, and on the other mountains on the Spanish frontier near Irun.

Spanish.

A small pale yellow form has recently been found near Biarritz. Passing into Spain we find, on the limestone hills of Pancarbo, at a height of 3000 feet, a form somewhat different to that prevailing in western France, with small bright yellow flowers on a long scape. Turning northwards towards Leon, the moist places within sight of the railway are golden-yellow in April with a small orange form, and a still smaller orange form approaching nivalis in character is abundant near Busdongo, at an altitude of from 4000 to 5000 feet on the pass over the Asturias.

Descending the north side of the Asturias the same large pale yellow form which prevails on the north side of the Pyrenees in western France again presents itself in moist meadows near Oviedo, near Lugones, and between Oviedo and Gijon, and in the immediate neighbourhood of Gijon a large orange form occurs sparingly. In passing by rail from Leon to Coruña small orange Corbularias were abundant between Leon and Astarga, and west of Astarga the large orange form similar to that at Gijon occurred sparingly at intervals.

Passing southwards two forms, C. nivalis, with small orange flowers—the smallest known form, and C. Graellsii, with pale primrose-yellow flowers, occur abundantly on the Sierra Guadarrama at altitudes of from 2000 to 5000 feet: in a meadow near the naval penal station they were growing in proximity, though not intermixed—nivalis occurring in a boggy part of the field, and Graellsii on the drier ground at an elevation of about 4000 feet.

Descending the southern side of the Sierra towards the Escorial C. Graellsii bespangled like Primroses the moist pastures with tens of thousands of its pretty pale yellow flowers.

Portuguese.

I gather from Mr. A. W. Tait's *Notes on the Narcissi of Portugal* that the same kinds of variations occur in the Portuguese as in the Spanish forms of Corbularia. The following particulars are mainly derived from Mr. Tait's notes, and partly from my own observations.

In several parts of Portugal the form obesa occurs: it is of low stature, orange in colour, and departs somewhat in shape from the other forms in the corona being inflated or balloon-shaped, with a convex instead of a concave outline. I found this in the neighbourhood of Cintra in 1871. It grows at Coimbra, intermixed with the ordinary C. bulbocodium, and on the Berlengas Islands off the coast of Portugal all the Corbularias are of the obesa type. Mr. Tait's enumeration of the Portuguese Corbularias is as follows:—

1. With short-stemmed rich orange flowers, produced in February and March; found in the neighbourhood of Oporto within 100 feet of the sea, level.

2. With a much longer scape and longer flower than No. 1, and an exceptionally large bulb, from hot marshes near the sea at Ovar, 20 miles south of Oporto; flowering in March and April.

3. Somewhat similar to No. 2, but of the obesa type; from Cantantrede, 40 miles south of Oporto; flowering about April 18, at an elevation of 30 feet above the sea-level.

4. Corbularia nivalis, the smallest known form, was found abundantly by Mr. Tait at elevations ranging from 1500 to 4600 feet on the hills near Povoa de Lannozo and on the Geriz Mountains; flowering from the beginning of March to the middle of May, according to elevation, but much paler in colour, varying to white, than the form I found on the Spanish Sierra Guadarama.

5. A double variety, of a form resembling No. 1; found at Ovar, flowering on April 17.

6. One of Mr. Tait's most interesting discoveries, is a supposed hybrid between Corbularia nivalis

and Narcissus triandrus; flowering from the end of April to the middle of May, at an elevation of about 3500 feet on the Geriz Mountains. The corona resembled that of Corbularia nivalis, but the segments were broader and reflexed like those of Narcissus triandrus. The four specimens obtained in the years 1885 and 1886 were growing intermixed with the supposed parents. This is, I believe, the only known hybrid Corbularia.

Africa.

Now, crossing to North Africa, two west European forms occur on the Barbary coast opposite the narrow Straits of Gibraltar, viz., the typical C. Bulbocodium and the inflated form C. obesa, in the neighbourhood of Tangier, but how far these extend east in the direction of Algiers has not been ascertained.

In the province of Oran, as at Beniza, near Sidi-bel-Abbès, at Saida and Djebel Santo and other localities, the nearly white Corbularia monophylla takes their place, and there is no record of the occurrence of any orange Corbularia in Algeria. C. monophylla appears to extend as far to the east as the longitude of Algiers, or a little further east than the eastern limit of Corbularias in Europe. It grows abundantly near the Cedar forest at Teniet-el-Ahd, and in the spring of 1873 I observed it in flower at Boghar, 70 miles south of Algiers, and again at Guelt-es-Stel, 150 miles south of Algiers; but the last is the most south-eastern point from which it has been recorded, and is probably nearly the south-eastern limit of the range of the genus.

It will be gathered from these records that, with the exception of C. monophylla, there is no definite line of demarcation between the various forms of the genus which pass into each other by invisible gradations, and that even in their geographical distribution they are scattered through the region they occupy in a very irregular way, both as regards altitude and locality. *George Maw, F.L.S.*

Plants New or Noteworthy.

LÆLIA ELEGANS MEASURESIANA, *nov. var.*

In the midst of the seventh decade of our century it was quite proverbial that those who liked to admire Lælia elegans had to make a pilgrimage to Mr. J. Day, who had expanded his loving hands over the whole bulk of a most lucky importation of Messrs. H. Low & Co. And we may say that for nearly forty years this rare plant has been seen frequently, though generally sparingly. And after such an interval there now appears an enjoyable surprise—a very fine Lælia elegans with sulphur-coloured sepals and petals. Sepals washed outside with the lightest brown-purple, leaving, however, innumerable light spots on their surface. Petals bordered with purple at the top on both sides. Broad central lacinia of the lip of the warmest darkest purple, as in the best Cattleya superba. Disc between the triangular side laciniæ purple, side areas white, top of the angles purple. Column white with some purple lines and streaks and spots. I learn that only two such phenomenal plants have appeared at Mr. F. Sander's. One passed into the hands of Mr. R. J. Measures, of Streatham, who, by-the-bye, appears on the scene as a keen rival of the best orchidists. *H. G. Rchb. f.*

Ornithidium ochraceum, *n. sp.**

This is an interesting plant, much in the way of Ornithidium Tafallæ, also of parviflorum and vestitum. Its bulbs stand alone near one another, generally at wide distances, on an ascending stem. They are elliptical, ancipitous on both sides, with a few very obscure ribs nearly as large as those of Oncidium flexuosum, but thicker, with a cuneate oblong unequally acuminate cartilaginous, leaf and side one under the bulb half a span long, nearly 2 inches in breadth. The flowers are very small; sepals and petals ligulate acute, ochre-coloured, with a few mauve-purple spots. Lip white, with the disc of the anterior lacinia ochre, dotted with mauve spots. The flower is really modest, as it is not larger than that of Ornithidium vestitum. The bulbs become more and more greyish-ochre, and are the meritorious part of the plant with unusually strong, remarkably unequally acute leaves. It comes from New Grenada. It was kindly sent by Herr Oberhofgärtner Wendland, of Herrenhausen. *H. G. Rchb. f.*

* *Ornithidium ochraceum*, n. sp.—Aff. Ornithidio Tafallæ, Rchb. f.: caulescens; pseudobulbis nunc parce, vulgo multum inter se remotis ellipticis ancipitibus obsolete obscureque costatis, demum griseo ochraceis, monophyllis; folio cuneato-oblongo inæqualiter acuto cartilagineo, folio stipante æquali vagina late cartilagineo-marginata; floribus ex vaginis fultientibus paucis; sepalis tepalisque ligulatis acutiusculis, mento obscure obtusangulo, labelli ungue canaliculato in lacinias parvas triangulas excurrente, lacinia mediana multo latiori triangula crenulata crispula, callo transverso retuso in basi, sc. inter apices laciniarum lateralium. Ex N. Gran. Mis. ex H. Wendland. *H. G. Rchb. f.*

Dendrobium × Schneiderianum, *n. hyb. art.*

This new hybrid is a lucky one, inasmuch as it is combined from two species which may well be found growing wild together—Dendrobium aureum and Findleyanum, the last one being the seed-bearer. It was sown in the garden of one of my most enthusiastic correspondents, of Mr. Oscar Schneider, Cromwell Range, Fallowfield, Manchester, now of Charlottenhöhe, Braunschweig. Mr. William Holmes, now gardener of Mr. C. Moseley, Grange Thorpe, Rusholme, Manchester, has been always the grower of the plants, which having been the pride of Mr. Oscar Schneider are recommended to be named in his honour, which I do with great pleasure. Decidedly Mr. C. Moseley, the actual possessor, has the good merit of having given fair play to the elucidation of origin.

I learn from Mr. Holmes that the plant is like that of the Rev. C. S. Parish's Dendrobium Findleyanum, but much stronger in its growth. The bulb is 6 inches high, 2 inches thick, and has but three leaves. The flower is sweet-scented, making one think a moment of that of Dendrobium Falconeri itself. Sepals and broader petals white, tinged with fine lilac-purple in the upper half. Lip shortly cuneate, oblong acute, very wavy, orange with a thick oblong area of light short velvet at the base, wherefrom reddish dark radiating lines emanate, which are longest in front—a whitish area around this, washed with lightest sulphur. Apex of lip lilac-purple. Column painted with some purple lines in front, and a purple dash on white anther. *H. G. Rchb. f.*

Dendrobium Fytchianum var. rosea, *new variety.*

Mr. B. S. Williams, Victoria and Paradise Nurseries, Upper Holloway, has this plant in flower; it being the first time it has flowered in England. It was found in Burmah by Colonel (now Major-General) Berkeley in 1886, who sends the following notes, taken at the time he discovered the plant:—

Stems terete. Flowers loosely corymbose, individually about 1½ inch in diameter. Sepals linear, oblong, recurved; petals broad, obovate; labellum 3-lobed, lateral lobes small, completely rolled over one another; middle lobe linear, oblong, large, broad at the apex, villous at the base. Sepals and petals rose, lateral lobes and base of middle lobe of labellum deep crimson-purple; the villous processes at the base deep purple tipped with orange.

This plant is allied to Dendrobium barbatulum, Lindley.

The original D. barbatulum of Lindley is a native of the Bombay hills, and has very robust pseudobulbs; the small lateral lobes of the labellum of D. barbatulum are small, acute, and not rolled over one another, as in its Burman allies, the base of the labellum being pea-green. Thus we have a regular progression of colour in these plants, which is very interesting, viz.:—

D. barbatulum.—Flowers white, the hairy processes on the labellum being green.

D. Fytchianum.—Flowers white, with occasionally a few rosy spots on the sepals and petals. Hairy processes on the labellum yellow.

D. Fytchianum var. rosea.—Flowers rose-coloured, hairy processes on the labellum rich purple.

All these are probably forms of an original type, isolation for centuries accounting for specific characters. The two Burman forms are 200 miles apart, while the Indian form is separated from them more than 1000 miles. *Emeric S. Berkeley.*

Roses.

THE CLASSIFICATION OF EXHIBITION ROSES.

The Results of Small Things.—I know that there are a great many people who consider florists to be a very troublesome and fidgetty lot, that we make a great fuss over little matters, that we are very dogmatic, and, as a necessary consequence, very quarrelsome over little things; yet on looking back one cannot but see that good results have followed from these very points of peculiarity, and although in the eyes of scientific men our dissensions seem absurd, I do not find that they themselves are quite free from those little weaknesses with which they charge us; so I suppose we may lay them to the score of our poor frail human nature. We have fought stoutly for our opinions, and we are not at all ashamed of the results which have followed in the wake of our efforts. If Nature abhors a vacuum, so it seems do botanists a circle, and the worst description we can give of a flower is that it has a circular outline. "Look at the wild flowers; see," we are told, "how elegant and beautiful they are, and how they abhor your torturings and twistings!" Well, let it be so; if they are content, so are we.

Amongst the flowers beloved by all florists and town florists especially must be classed the Rose, though I have seen a scientist turn up his virtuous nose at the *bonne* charms of a Marie Baumann; and it is with regard to the classification of these that I wish to have a word to say. It is not easy, for there are some people who at one word of dissatisfaction immediately fly off at a tangent, and imagine you are trying to injure them. All very well as long as you praise, but woe to you if you venture to criticise. They remind me of an exhibitor of bygone days, whom many will recollect: if he were successful champagne was freely offered to everybody—if, on the other hand, he failed, the most unparliamentary language was equally freely uncorked. If, then, in writing on the subject of the classification of exhibition Roses, I may tread upon some people's corns, I shall be very sorry, but I write nothing in *malice prepense*. Even the people with tender feet and thin skins can hardly believe it.

The Exhibition Roses.

What are exhibition Roses? I think we must entirely dismiss from our ideas of them all of what are called summer Roses, however beautiful many of them may be in form and colour, &c. No one finds fault with such flowers as Coupe d'Hebe, Charles Lawson, Chenedole, &c., yet all these hybrid Chinas, hybrid Bourbons, Provins, Moss, &c., are out of the running, for the simple reason that they are all over before the exhibitions begin, except in some backward localities, and it is for this reason that the stands for garden Roses brought forward at the National shows are not so comprehensive of garden Roses as they ought to be: they contain a good many of second-class hybrids or Teas, in order to make up the number required. Then, however beautiful a Moss Rose is in bud—and I think there are few more exquisite things—yet in full bloom it is the very reverse of beautiful; so that one never seeks for any of these classes of flowers on the exhibition stands—they have always been found amongst either hybrid perpetuals, Teas, Noisettes, and Bourbon, but mostly amongst the last two flowers. Some of the Noisettes, such as Maréchal Niel, are always to the fore, and occasionally a Souvenir de la Malmaison is found there, but never, I think, to the advantage of the stand; and lately Madame Isaac Periere has been with some a favourite notwithstanding its coarseness. Virtually, however, the two classes—hybrid perpetuals and Teas—have furnished the greater number of flowers.

Hybrid Teas.

There has, however, of late years been an attempt to establish another class—what are called hybrid Teas; and this has tended to create no little confusion—a confusion which I can but think is liikely to make "confusion worse confounded." The hybrid perpetual Roses originated from the hybrid China crossed with varieties of China and Bourbon Roses. "The hybrid China itself owes its origin," says Mr. Rivers (than whom there is no higher authority), "to the Tea-scented Noisette and Bourbon Roses, fertilised with the French Provins and other summer Roses, and also to the latter crossed with the former;" so that if we take any hybrid perpetual and seek for its parentage, it would be very difficult to determine it. In some there is a manifest evidence of Tea blood, so that when any one commences to hybridise them with Teas, or *vice versâ*, it is not the same as hybridising two distinct species—the blood is already mixed up, and the term pedigree as applied to them is a misnomer [not necessarily. Ed.]. The first of the so-called hybrid Teas was Cheshunt Hybrid, a chance seedling raised by Messrs. Paul & Son; it is by them supposed to be a seedling between Madame de Tartas and Camille de Rohan; it has been and is a most useful Rose of a colour not beloved by the fair sex, but most free-flowering, and as a climbing Rose valued in all parts of the world. La France evidently had a good deal of Tea blood in it, but had always been classed as a hybrid perpetual till of late years Guillot has placed it with Reine Marie Henriette, Camoens, &c., amongst the hybrid Teas.

The confusion created by attempting to make this a separate class led to the matter being brought before the committee of the National Rose Society, which had already decided that they were not to be exhibited amongst Teas; and it was by them decided that, however called, hybrid Teas or pedigrees, they must be regarded as hybrid perpetuals, and shown with them. This arose mainly from one instance of the results of the attempt to make a new class. At one show a stand for hybrid perpetuals was disqualified because it contained a bloom of Lady Mary Fitzwilliam, while a few days after the Silver Medal for the best hybrid perpetual at the provincial show of the National Rose Society at Manchester had been awarded to it. *Wild Rose.*

(To be continued.)

CYPRIPEDIUM BOXALLI VAR. ATRATA.

The fine variety of this acaulescent Burman species was shown by Mr. F. G. Tautz, of Studley House, at the meeting of the Royal Horticultural Society's Floral Committee on Tuesday the 8th inst. The habit of the plant is dwarf, as seen in the specimen exhibited, the dark green foliage not exceeding 8 inches in height, the flower-stems topping these by about 2 inches. The colours of the lip and lateral petals consist of reddish-purple, associated with light green; the dorsal sepal is green, black-brown speckled. The upper margin being white. The whole flower has the waxed appearance seen in C. villosum. Our illustration (fig. 47) was taken from Mr. Tautz's plant.

Fruit Register.

PEACH "SURPASSE BON OUVRIER."

The name indicates an improvement upon the "Good Workman" Peach. It is a variety described and figured in the *Revue Horticole* as having small globular glands and small campanulate flowers. The fruits are large, spherical, furrowed on one side, velvety, deep ruddy scarlet on the exposed side, flesh not adhering to the stone, yellowish-white, red around the stone, melting sugary, acidulated. It ripens at the end of September. As a market variety its deep colour will render it acceptable.

IRIS GERMANICA.

To grow what will really flourish in his particular garden, instead of breaking his heart over plants that are quite unsuited to his soil and climate, is advice which old gardeners continually find themselves impressing upon the beginner. I am induced to say a few words upon the so-called German Irises, because they are plants so good-natured as to do well in most places—even in town gardens—if treated with a moderate amount of kindness, and, when once planted, left undisturbed. I was told when I began to cultivate these Irises that they were fond of damp, and though I doubted the truth of the statement then, I have no doubt as to its untruth now; mine, at any rate, do best in the dry part of the garden.

Fig. 47.—Cypripedium Boxalli var. atrata.

In damp places the so-called germanica frequently waste away (that may of course be due to something peculiar in the soil), and are very much disfigured by slugs. I was told, too, that they would grow anywhere, and this is, roughly speaking, true; but they will not flower well unless they are satisfied with their home. I should say they would do well anywhere, provided the drainage was good and they were not too much shaded by trees. I was also instructed never to divide them. This is very good advice on the whole, but judgment of character is as necessary in Iris growing as in most other things. I have some clumps—especially in rather shady places—which grow proportionately less floriferous as they increase in size, and distinctly require breaking up.

These plants seem to me to vary very much in floriferousness. I have a clump of I. De Berghii which has never yet flowered, though when it does flower I expect to be rewarded. Such a clump of it as I have seen in blossom at the York Nurseries is a sight worth looking at. I. Gracchus was some time before it bloomed; but now that it has grown into a clump it is very floriferous. Both of these, by-the-way, are, I suppose, varieties of I. variegata. Of I. Florentina I may say the same as of Gracchus. Some kinds, on the other hand—*e.g.*, Mme. Chereau, —will bloom in qnite small pieces. Some again increase in size much more quickly than others. I find Victorine and Jacquesiana, for example, increase slowly: possibly in a better climate the case may be different.

Opinions may differ as to particular plants, but I think the following list includes not more than three or four (and these have some other special recommendations of their own), that are not first-rate. It would be very easy to enlarge the catalogue (I ought to say that I mention no variety which I have not flowered except De Berghii):—

Afghan Prince (Barr), rich bronze and crimson; flowers freely.

Arnoldi, violet-bronze and purple.

Atropurpurea, rich dark purple.

Attraction (Backhouse), apparently identical with Princess of Wales, white, large flower.

Aurea, yellow, very distinct, but not a strong grower.

Bridesmaid, white and reddish-lilac, distinct.

De Berghi, yellow and crimson, very rich.

Flavescens, primrose.

Florentina, white.

Fontarabie (Backhouse), purple-blue, rich veining: very distinct, plant dwarf and free.

Ganymede, yellow, splashed with purple.

Gracchus (Ware), lemon and purple. Plant compact, floriferous when established; very good.

Jacquesiana, red-bronze and crimson.

Leopoldine, creamy-yellow and purple; very good.

L'Innocenza, white, very delicate and lovely.

Madame Chereau, white, barred and edged with violet.

Madame Pacquitte, red-purple.

Pallida dalmatica, lavender; splendid.

P. odoratissima (Backhouse), splendid; heavily scented.

P. racemosa (Ware), lavender-blue; charming; very distinct. This plant has a branching habit, and nothing clustering about it. Ought it not to be called ramosa?

Pluvialis, bluish-lilac.

Queen of May, rosy-lilac (charming), almost pink.

Victorine, white, splashed with purple, falls violet-purple,

Victory (Veitch), like Victorine, but without the splashes on the standards.

Virgile, clouded bronze and reddish-lilac; free.

Virginie, silvery-grey or mauve and reddish-violet.

The colours are but roughly indicated to describe them in detail is impossible. Any one who is curious in colours should look at the inside of the flowers: in less brilliant forms, such as pluvialis, the tints of the petaloid stigmas are often very beautiful.

There is a wasting disease which these Irises are liable to (of its scientific name I am unfortunately ignorant, but probably most Iris growers know the disease) which I have sometimes cured by dividing the suffering plant, cutting out the diseased part, and replanting in light dry soil; sometimes by taking up, cleaning with a knife, and replanting in ashes. This remedy will not always answer, but in case a valuable plant is attacked it is worth a trial.

I occasionally water my plants when coming into blossom if they look as if they lacked moisture, but never after they have bloomed. The plants may be moved in spring, though I prefer to lift them when the blossom stems have begun to decay. *North-Easter.*

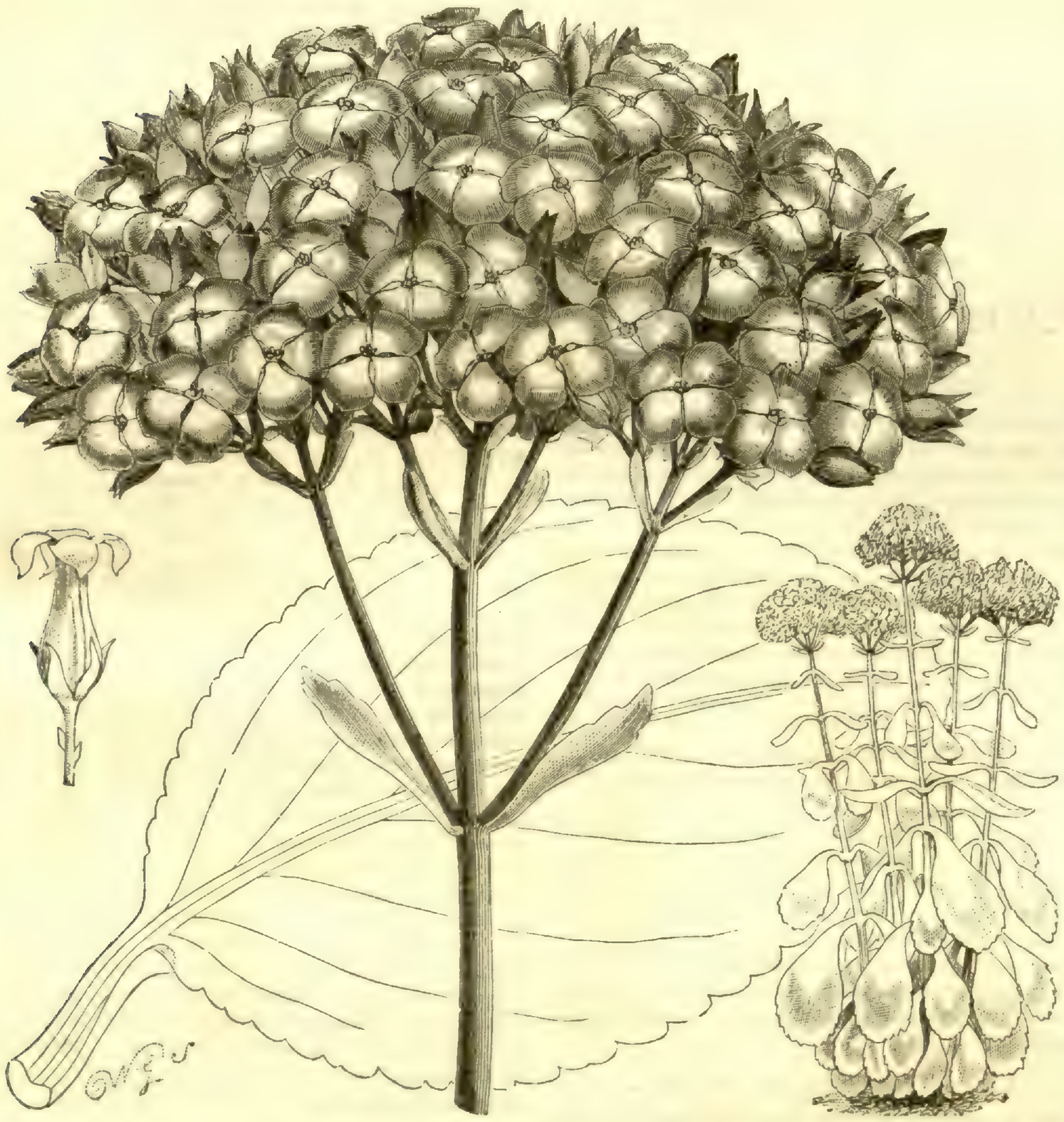

Fig. 48.—KALANCHOE CARNEA: FLOWERS ROSY-LILAC, TWENTY INCHES HIGH.

FORESTRY.

RENOVATING GAME PRESERVES.

Besides layering, as recommended at p. 19, January 1, seeds of the Broom and Blackberry may be sown in worn-out game coverts, but this necessitates ground preparation and fencing for two or three years—at least, the patches of ground where the seeds are sown.

Fuchsia Riccartoni, so readily raised from cuttings, so soon forms large bushes that in districts where it flourishes I strongly advocate its extended use in the formation of game coverts. I have just been examining a number of large clumps of it that were six years ago planted along the margins of several of our woods, but particularly such as were visible from drives and walks, and must confess that not only as one of our most ornamental plants, but likewise as a dry, thick shelter for ground game, this Fuchsia is very suitable. Any soil of ordinary quality would seem to suit its wants well, for here in dampish loam—a peaty compost—and in almost pure gravel, it thrives well, and attains a great size. In planting place the pits pretty close together, not further apart than a yard, and if possible a couple of feet, in large, irregular-shaped patches of, say, from sixty to over a hundred in each. When the plants attain to a large size every alternate one can be removed, and they will be in as good trim for planting out in a new position as if they had been kept in the nursery borders. Some plants I examined to-day, that had been put in eight years ago as rooted cuttings, have now large crowns of fully a foot in diameter, and send out annually about a score of stout stems. This sending out annually of stems from the Fuchsia stools sounds a little like Willow culture, and, in truth, the very method that we successfully enough practise with the Osier is the one we have found well suited for Fuchsia Riccartoni. During unusually severe winters these Fuchsia stems are cut by the frost, but, whether or not, we usually make a practice of cutting over in early spring all the stems, close back to the root. This induces the formation of young fresh shoots in abundance, that in the same season not at all unfrequently attain to 4 feet and 5 feet in height, and flower profusely. By allowing the plants to grow unpruned, they form large bare stems fully 12 feet in height, and which, although ornamental enough, are not so well suited for the double purpose of beauty and use for game preserves. I fancy from the hard frosts through which this Fuchsia has passed unscathed here, that it might be more commonly cultivated further north than it is at the present time.

Hydrangea hortensis is as hardy as the above, and for ornamental and useful purposes it is not one whit behind it. Planted in good, bold, irregular-shaped masses in the more open portions of the woodland outskirts it is a grand sight during the blooming season. Being readily enough propagated—for cuttings root freely, while by division of the roots a speedily got up batch of a hundred or two plants is easy enough—it may be planted in quantity in the woodland, where underwood as well as an ornamental appearance is desirable. Only plant the Hydrangea in open places, for it is about as unsightly looking a shrub when covered overhead by trees as I know of, and in such situations will never do credit either to itself as a free-flowering subject or to the planter.

Game have no particular fancy, of which I am aware, for the shade of the Hydrangea, but this I do know, that they do not dislike it, for I have seen a couple of pheasants as cosily ensconced beneath its shade as ever I did a hare or rabbit on a dry, gorsey bank, or amongst tussocks of the driest and warmest of woodland grasses. *A. D. Webster, Penrhyn Castle, Bangor.*

KALANCHOE CARNEA.

We are now enabled to lay before our readers an illustration (fig. 48) of this newly introduced South African species. Messrs. J. Veitch & Sons, Chelsea, introduced the plant and exhibited it for the first time at the Royal Horticultural Society's Floral Committee meeting, on January 11 last, when a First-class Certificate was awarded to it. The plant is said to be of easy culture, and has, moreover, the decided advantage of being a free-flowerer. The flowers themselves are pink and sweetly scented, and the plant will probably become a favourite for general cultivation and for market use, especially so as it is in full flower in the winter season.

The flower-heads shown by Messrs. Veitch were by some mistaken for the plant itself, and owing to that circumstance the growth was assumed to be of a dwarf character. We believe we are right in stating the average height of the shrub to be under two feet, and of corresponding bushiness.

ORCHIDS AT LYTHE HILL, HASLEMERE,

The Seat of J. Stewart Hodgson, Esq.

This time of the year (January 27) is not at all the gay season for Orchids, neither is it anything like the growing season; but whenever I pay a visit to the above gardens there is always a treat in store; the last one was exceptionally so, each of the houses being quite gay, and arranged with great taste and lightness. The first to note was the flowering department, where every Orchid was in full bloom, standing on a groundwork of Adiantum gracillimum, with a drapery of Myrsophyllum asparagoides reaching to the floor. Although the Calanthe season is nearly over they were quite gay here—C. Veitchii with thirty spikes, 3 feet 6 inches long, with forty-four blooms, and C. vestita, C lutea, and C. Turneri, with seventy spikes. Lycaste Skinneri in various forms, one having a very dark lip, another with much white ground and delicate pink spots. Cypripediums were flowering well. Some spikes of Harrisianum had three blooms each, the plants being nearly a yard across; C. Sedeni, the same dimensions. There was also perfect culture shown in plants of C. venustum, C. barbatum, C. insigne, and C. Maulei. A plant of Cœlogyne cristata was nearly a yard in diameter, and was very telling, with its thirty spikes of very large blooms. A fine Dendrobium nobile would in a few days be a perfect picture. Zygopetalum Mackayi majus had fine individual blooms; it is delicately scented, and deserves to be more generally grown. Of Odontoglossum pulchellum (the Lily of the Valley Orchid) there were nice plants in pans, flowering freely, as was also the old O. Halli.

East Indian-house.

Next to these came the East Indian-house. Here Vanda and Aërides had fine robust leaves from bottom to top, which is rarely seen on such large plants. Vanda suavis and V. tricolor superba were throwing fine spikes. In this house there were several Cypripediums, C. Lawrenceanum, with a spike over 2 feet long, bearing three blooms, measuring fully 6 inches in diameter; Phalænopsis were in robust health; P. Schilleriana had blooms of extra size and substance; and grandiflora, amabilis, aurea, Sanderiana, violacea, and Luddemanniana, were in the same good condition.

In the Dendrobium-house were fine examples of good culture in D. nobile, D. chrysanthum, D. thyrsiflorum, D. densiflorum, D. Dalhousieanum, D. devonianum, D. fimbriatum, D. superbiens, &c., which will be a lovely sight a little later. On a good plant of D. Wardianum was the finest growth I have ever seen, over 4 feet long, with forty-six blooms.

Cattleya-house.

In this house the recently introduced winter bloomer, C. Percivaliana, was in fine form; C. exoniensis, C. Trianæ, Lælia anceps, and the variety, L. anceps Dawsoni and L. harpophylla; and Oncidium macranthum, just opening; also Maxillaria grandiflora and M. maculata, Epidendrum vitellinum majus: E. ciliare, is grown for its scent. There are some good plants of C. Mossiæ, and C. Skinneri, and C. Mendelii, C. gigas, C. Warneri, and many other good forms. At one end were a dozen plants of Odontoglossum vexillarium, including the one which gained for Mr. Evans a medal at South Kensington two years ago; all in excellent health. These plants are always kept with the Cattleyas, except when in bloom; Cymbidium eburneum, and C. Mastersi were throwing up freely. In this house some Calanthes were added to make it brighter than the Cattleyas could by themselves; also some beautifully grown Poinsettias in 48-inch pots, having very brilliant bracts 14 inches in diameter. Small Adiantums are used as a margin to the stages.

Odontoglossum-house.

Where Odontoglossums are grown in quantity and variety, there is at all times a nice display. Here are some very good varieties of O. Alexandræ, one in particular having a spike over 2 feet long, with fifteen blooms of extra substance, the bloom being nearly a circle, heavily spotted; this, with some others, were of Messrs. Veitch & Son's introduction in 1870; also some other good forms of O. Pescatorei and O. Pescatorei splendens with ninety blooms; O. Rossi majus in pans hung up; O. gloriosum, O. Halli are very good: many others of this section are throwing up strong spikes. Masdevallias are grown on the north side of this house, and are doing very well; M. tovarensis is a picture in itself, being nearly 2 feet through, with 104 spikes, a good percentage of these having four blooms each, the plant bearing 273 expanded blooms. M. Veitchii and M. Davisii were also in bloom; nice specimens of M. Lindeni, M. amabilis, M. Harryana, M. polysticta were in perfect health; in fact I have not seen more perfect health and vigour in a collection of Orchids so large and varied as this one under Mr. Evans' skilful treatment. Want of time prevented a longer stay with the Orchids, and a hurried run through the great number of plant and fruit houses (of which I hope to speak at some future time) brought a very pleasant visit to a close. That some of these fine Orchids do not find their way to our great shows is accounted for by the fact that the plants are grown specially for cutting from and for decorative purposes. *A Lover of Orchids.*

PLANTS AND THEIR CULTURE.

POTTING OPERATIONS.

In resuming my notes upon potting stove plants it may be remarked that it will be advisable, until the plants recover the check necessarily caused by the operation, to keep them occasionally dewed overhead with tepid water, and but sparingly watered, as not only is free watering unnecessary before perfect vitality is restored, but it causes the compost to become sour, consequently unfitted to the wants of the roots of the plants generally. The ventilation should likewise be carefully attended to, to prevent draughts, and in some cases shading may be found expedient.

Palms.

Many kinds of these have become commonly cultivated, their graceful appearance in a young state, and the grand character of large specimens causing them to be much appreciated for decorative purposes. They should be firmly potted in comparatively small pots, but when treated in this way they should be assisted with some kind of concentrated manure, such as Clay's or Standen's. The robust varieties succeed satisfactorily in moderately light fibry loam, such as suits the Camellia, which, however, for the weaker growers, should be mixed with some peat and sand.

Crotons, Dracænas, and Pandanus.

For a compost, all that these and many similar subjects require is the ordinary mixture of peat, loam, and sand. The narrow-leaved section of Dracænas may be grown to good sized specimens in tolerably small pots; the strong varieties, however, will need more root space. The best plants are obtained when they are grown on quickly, and in potting the roots must not be much disturbed, or the bottom leaves will be sacrificed. Varieties of the ordinary type are now numerous; Goldieana and Lindeni are distinct somewhat new species, while D. fragrans and D. umbraculifera are older ones, deserving to be more generally grown. The pots for Crotons, like those for most firm-wooded plants, should be well drained, and the soil fairly well rammed.

Marantas and Dieffenbachias.

In repotting Marantas most of the old soil may be shaken from them, when, if an increase of plants is desired, they can be readily divided, and as they are shallow-rooting plants, needing copious supplies of water, ample drainage should be afforded them. They grow freely in peat and sand, but we like to add some fibry loam. Large specimens of Dieffenbachias may be formed by cutting down young plants and thus causing them to branch, or by striking several cuttings in a pot, and shifting them on together. They are easily managed ornamental plants, and are not particular as to soil. The following are good sorts:—Bausei, Weiri superba, Jamaini, Baraquiniana. *Thomas Coomber, The Hendre Gardens.*

FRUITS UNDER GLASS.

POT VINES.

Where the early supply of Grapes is obtained from pot Vines the bunches will now require to be thinned. From four to seven bunches may be considered a sufficient crop, according as they are weak or strong, and as the size to which these bunches and berries attain depends very much upon the roots being kept liberally supplied with diluted liquid manure in a tepid state up to the time of colouring, it will be advisable to place pieces of turf round the rims of the pots, so as to afford additional room for holding water. Maintain a growing atmosphere by distributing water over the pathway, &c., morning and afternoon on bright days, and close the house when at 85°. The same remarks apply to permanent Vines at the same stage of growth. Keep a minimum temperature of 60° to 65°. Pot Vines—if the object is to secure ripe Grapes from them as soon as possible—should have 5° more heat at night, and the same by day.

Succession Houses.

The Vines in these will require almost daily attention in the way of disbudding. This is an operation that should be performed as soon as the buds have burst, when all weak ones and those not needed should be rubbed off, leaving most promising shoots at 15 inches to 18 inches apart on either side the rod diagonally. The temperatures at this stage should be kept at 55° to 56° (according as the weather is cold or mild) at night, 65° by day with fire-heat, and 75° with sun-heat, air being given. Damp the house more or less morning and afternoon at closing time. If the vineries are air-tight it will be advisable to open the ventilators a little at night during mild weather, to cause a circulation of air in the house. Remove all bunches from each shoot except that one nearest the main stem as soon as they appear; the number left on each Vine to be further reduced after the berries are set. As soon as the flowering period is reached the temperatures should be raised 5° night and day; and a somewhat dry and airy atmosphere be maintained in the house until the berries are set, and with a view to effecting a good set the rods should be tapped with the hand two or three times a day to distribute the pollen, or, what is better still for the purpose, a rabbit-tail tied to the end of a stick should be passed over the bunches about mid-day until the berries are set.

The Melon-house.

A suitable house for the production of early Melons is a low span-roofed structure, running east and west, and having narrow borders, about 18 inches wide and 15 inches deep, with hot-water pipes underneath for supplying bottom-heat, and screw-valves for regulating it, on either side the pathway. If such a house be available the 3 inches or 4 inches thick of brick-rubble forming the drainage over the pipes should be seen to, and, if necessary, re-arranged. This done, place over it about 2 inches thick of short dung, and on this form the mounds, 3 feet apart, 10 inches high, and about 15 inches in diameter at the base. And after the plants that have been shifted into 6-inch pots have made 10 or 12 inches of growth, and before they become pot-bound at the roots, they should be set one plant on each mound, taking care not to bury the stems any deeper in the soil than they were in the pots, and make the soil firm about the roots. Should the weather be bright and sunshiny at the time the plants should be shaded from its effects for a few

days until the roots have pushed into the soil, when it should be discontinued. Damp the plants overhead, and the walls and paths generally, morning and afternoon on bright days, to promote a genial atmosphere in the house, and at the same time to prevent red-spider from attacking the plants. Ventilate freely during favourable weather, to secure short-jointed consolidated growth in the plants. *H. W. Ward, Longford Castle.*

Trees and Shrubs.

HAMAMELIS ARBOREA.

In the Arboretum at Kew there is a fine plant of this handsome Japanese tree in full flower, and we have also received fine sprays from Messveitch. The clear rich primrose-yellow petals form a striking contrast with the deep claret-coloured calyces. In habit this species differs markedly from its American congener, H. virginica (the common Witch Hazel), the latter being a shrub, and the subject of this note a small tree. The periods of flowering, too, are different, H. virginica producing its paler coloured flowers in autumn, frequently before the leaves have fallen. H. arborea has been figured in these columns in February, 1874, and again in February, 1881. In the *Botanical Magazine*, tab. 6659, it is figured under the name of H. japonica; but whatever the plant may be botanically, for garden purposes it is quite distinct from that species.

Azalea linearifolia.

This very interesting and pretty Japanese shrub has withstood the severe frosts at the end of last year and beginning of this without apparent injury in the open air. The long narrow leaves and long strap-like rosy-pink petals of this species render it a very distinct plant, very different in aspect from any other species. It probably only requires to be better known to be much more widely cultivated.

The Whahoo, or Winged Elm.

One of the most striking of the deciduous trees at the present moment in the Kew Arboretum is Ulmus alata, the Whahoo or Winged Elm of the Southern United States. The tree when in leaf is not particularly conspicuous, but during the winter months the curious corky-winged branches arrest the attention of the least observant. For winter effect a group of these trees would form a feature in any park or place of public resort. Ulmus alata, in its native habitats, forms a small tree from 30 to 40 feet in height, and furnishes fine-grained, hard, unwedgeable and valuable timber. *G. N.*

Forsythia viridissima.

Several large standard specimens of this rarely seen shrub are at present very attractive in our home nursery grounds. The pale golden blossoms that spring singly from the axils of the previous year's leaves are rendered particularly attractive by the slender sweeping nature of the branches. With this plant the best effect is produced by clumping—say, half-a-dozen plants in front of some dark-foliaged evergreen, when the peculiarly distinct flowers and light-coloured bark are shown off to perfection. No soil of even ordinary quality comes amiss to this plant, although we have on more than one occasion noticed perhaps a slight preference for good fibrous loam that is neither excessively dry nor damp.

Ribes aureum.

One of the most pronounced types of the flowering Currant is this distinct and just now highly attractive shrub. For variety's sake it is well worth growing, the bright yellow flowers contrasting so well with those of the common R. sanguineum. The orange-red flowers of R. Gordonianum—which, by-the-bye, is supposed to be a hybrid between the two above-named—are likewise handsome and attractive; indeed, this plant is by not a few considered the finest of the genus. In R. speciosum the red Fuchsia-like blossoms are well shown off when trained against a wall, and being a remarkably floriferous plant, it has a peculiarly imposing effect when seen from a distance. This plant differs from most of the others, inasmuch as the foliage is usually fully developed at flowering time. For distant effect and where planted in good bold masses, few spring-flowering shrubs are more suitable for open airy situations, and at respectable distances from drives and walks. *A. D. W.*

Cultural Memoranda.

URGINEA MARITIMA

is now the correct name for the plant, which is perhaps more widely known as Scilla maritima. It is only in warm spots in favoured localities that this produces its large pyramidal inflorescences in the open air in this country, but in a greenhouse there is not much difficulty in getting it to produce its pretty bluish flowers. The bulbs attain a considerable size, and along the Mediterranean coasts, where it is found wild, these are collected and sold by weight for medicinal purposes. In Algeria the scales are pounded in a mortar and mixed with flour or cheese, and then used as a poison for rats and mice; besides they are also used for tanning leather. *G. N.*

Nicotiana affinis.

This sweetly-scented annual is of very easy culture, and is alike useful for planting in mixed borders and beds in the flower garden, and the embellishment of the conservatory. For the latter purpose three sowings should be made in the year—in February, April, and the first or second week in June; plants from the first sowing for flowering in June, from the second in August, September, and October, and those from the third supplying flowers in winter and early spring. The seed should be sown in well-drained pots in light sandy soil, and be covered lightly with a sprinkling of the same, and then watered through a fine rose and placed in a warm pit or frame. When the seedlings are large enough to handle they should be pricked out in pans or boxes at 2 inches apart, subsequently potting them singly into 3-inch pots, shifting them into 6-inch pots (those destined for pot culture) as soon as they are established.

Spiræa japonica.

The Fern-like foliage of this Spiræa, surmounted by white feathery flowers, renders it a very attractive and useful plant for the conservatory, rooms, &c., the flowers and foliage being also useful in a cut state. We grow the plants in pots varying from 9 to 3 inches in diameter in a mixture of sandy loam and leaf-soil, about three parts of the former to one of the latter. Those in 6-inch, 4-inch, and 3-inch pots are the most useful for decorative purposes. The plants should be put into vineries or Peach-houses in small batches at intervals of a couple of weeks, so as to maintain a good succession of fresh plants; they should have liberal supplies of weak liquid manure at the roots from the time the plants start into growth until they open their flowers, when water only should be given.

Calceolarias.

Many of these showy and popular spring-flowering plants will now be requiring more room at the roots, for if they are allowed to become pot-bound before being put into their flowing pots they seldom do well afterwards. Hence the advisability of the plants being shifted into pots about 1½ inch larger in diameter than the ones they were in at the proper time. Other points in their culture being attended to, the plants will do well in a compost consisting of three parts light turfy loam and one of sweet leaf-mould (free from worms), with a good dash of drift or coarse river sand added. In potting do not bury the stems deeper in the soil than they were before, and make the compost moderately firm about the roots. A position near the glass in a watertight pit having a south aspect, and in which a temperature ranging from 40° to 50° can be maintained at night, and 10° or 15° higher by day, will be congenial to the requirements of the plants. The plants will require very little water at the roots until after the latter have pushed well into the soil, when it must be given with care and judgment, as, indeed, it should at all times. Greenfly must be kept down by fumigating with tobacco-paper in the evening on its first appearing, and fresh air should be admitted freely on all favourable opportunities. *H. W. W.*

The Tuberose.

Having procured good solid bulbs, remove all side growths, and pot up singly in 3-inch pots. Old potting soil sifted will suit very well at this stage, as only a small quantity is required for this size of pot; then place them in a cool dry position, plunging the pots in cocoa-nut fibre refuse or some such material to prevent the necessity of giving much water till root-action commences. As soon as the roots have reached the edge of the pots prepare a sufficient quantity of soil, such as is recommended for Hyacinths, and shift them singly into 5-inch pots, or if accommodation be limited they may be selected in threes and put into 6 or 7-inch pots—the latter being the better size, perhaps—then returned to their former quarters, getting water only sparingly till they have taken possession of the soil, when a little weak liquid manure may be given with good results; they may then be removed to warmer quarters in batches sufficient to meet requirements. Large pots are by no means advantageous; I have had them flower well in the original 3-inch. The best way to insure succession is to preserve the bulbs carefully in the dry state as long as possible, potting only as many as may be deemed necessary — say once a month. I have at present the remains of what was a grand lot, bearing from eight to eighteen blooms on each spike, which were potted about the end of June; and I have no doubt they may be kept later even than that—in fact, I am of opinion that they may be had in flower nearly all the year round. In conclusion, I would deprecate a too free use of the water-pot till such time as they have made plenty of roots. *J. A.*

The Kitchen Garden.

RHUBARB.

Fresh plantations can be formed at almost any time now, when the ground has been prepared and is in a fit state for planting; almost any kind of soil will suffice, providing it be deeply trenched and liberally manured with good stable manure. A well drained position, facing the sun, should, if possible, be selected. In planting, single divisions of the clumps should be used, and preference given to good strong plump buds, which should be arranged at a distance of from 4 to 5 feet apart. If an increase of stock be required, small offsets from these, and also from clumps that have been forced can be utilised, and planted into nursery beds, for permanent planting next year. During the summer weeds should be kept under and all flower-stalks removed on their appearance. Each season a proportionate number of clumps sufficient for early forcing, whether for lifting or otherwise, should be selected, and allowed to fully develope, by having none of the leaves removed the current year.

Horseradish

will grow almost anywhere, and, generally speaking, does so, but to have it as it should be—tender, juicy, and white—good cultivation is necessary. A deep sandy loam, and a rather damp situation, suit it best, but, before planting, the ground should be deeply trenched, and if poor, a good layer of rotten dung should be placed at the bottom of the trench only. Any portion of the fleshy roots will grow, but the best cuttings are the long straight pieces, in size the thickness of a black-lead pencil, and from 8 to 12 inches in length; these should be inserted in holes made with a dibber to their entire length, and an inch or so underneath the surface. During the growing season the ground should be kept clear of weeds, and the plants confined as much as possible to one growth, surplus ones being removed. Any time from now till the end of March will be a good time to plant. *John Austen, Witley Court.*

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APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

MONDAY, Feb. 14—Horticultural Benefit Society: Annual Meeting, at the Caledonian Hotel.

WEDNESDAY, Feb. 16—Society of Arts, at 8 P.M.

THURSDAY, Feb. 17—Linnean Society, at 8 P.M.

FRIDAY, Feb. 18—North of Scotland Horticultural Association.

SALES.

TUESDAY, Feb. 15—Collection of Established Orchids, at Protheroe & Morris' Rooms. Nursery Stock at the Lowfield Nurseries, Crawley, by Protheroe & Morris (two days).

WEDNESDAY, Feb. 16—Lilies, Iris, Roses, Greenhouse Plants, &c., at Protheroe & Morris' Rooms. Orchids in Flower, Lilium auratum, Roses, Fruit Trees, Shrubs, &c., at Stevens' Rooms.

THURSDAY, Feb. 17—Imported Orchids from Mr. F. Sander Lilium auratum, &c., at Stevens' Rooms,

FRIDAY, Feb. 18—1500 Cattleya Mendelii and other Orchids, at Protheroe & Morris Rooms.

SATURDAY, Feb. 19—Roses, Lilies, Iris, Greenhouse Plants, &c., at Protheroe & Morris' Rooms. Roses, Fruit Trees, Shrubs, &c., at Stevens' Rooms.

Royal Horticultural Society's Meetings.

The meetings of the Royal Horticultural Society on Tuesday last were of a very interesting character, and were well attended, the room, indeed, being inconveniently crowded. A feeling of good-will to the Society, and an earnest desire to rehabilitate it, were generally expressed. At the Floral Committee there was a brave display of Orchids, Baron Schrœder, Mr. Bull, Mr. Tautz, and others, braving the frosty weather, and sending interesting collections. The Narcissus fever showed signs of vigorous recurrence. Chinese Primulas from Messrs. Carter & Co., and Hellebores, Irises, and various other interesting plants from Messrs. Ware, Collins Brothers & Gabriel, Barr, and others, were shown. These are alluded to in detail in another column, so that here it must suffice to say that the collections afforded a striking testimony to the interest felt in the old Society, and the special value of these fortnightly meetings.

The labours of the Fruit Committee were very light, while at the Scientific Committee the interest centred in Mr. Maw's paper on Hoop Petticoat Narcissi (see p. 208), and in the exhibition of various species including N. cyclamineus, N. Johnstoni, and others. Further remarks on the objects exhibited are given in another place.

The general meeting was crowded and good humoured, the greatest interest being taken in the proceedings, a very decided and absolutely unanimous impression prevailing that the Society must have an independent home of its own somewhere, and that no effort must be left untried to secure such a consummation. With this view a committee of outsiders was appointed to confer with and advise the Council. This committee was hastily formed, so that it is open to question whether some of the gentlemen proposed might not, with advantage be replaced by others, whose special qualifications for the work are greater. As it is the list comprises Messrs. Geo. Maw, Harry Veitch, H. J. Elwes, Major Lendy, and Mr. Pollett. It was considered that if a freehold site could be obtained from the Commissioners of 1851, as mentioned in our last issue, money would soon be forthcoming to provide the building and other accommodation.

It is hardly necessary to give a full report of the proceedings, but with our own shorthand reporter's notes before us we may indicate the points touched on by the various speakers. Sir Trevor Lawrence, the President, occupied the chair, supported by the Council, and by a larger and more enthusiastic body of Fellows than we have seen of late years.

Sir Trevor, in moving the adoption of the report, as printed in full in our last issue, alluded to an informality in the nomination of proposed new members of the Council, as a consequence of which no change could now be made consistently with the charter and bye-laws, and hence Messrs. Boscawen, Haughton, and Mitford still remain members of Council, and the gentlemen proposed in their stead could not now be elected. The loss of Mr. Maw's services, which would have been specially valuable, are in a measure compensated for by the inclusion of that gentleman in the committee before mentioned, as well as in the Floral and Scientific Committees. No ballot and no scrutiny were necessary on this occasion, as the Council and officers remain as before. The President then alluded in appropriate terms to the recent death of one of the auditors, Mr. West, whose office was subsequently filled up by the appointment of Mr. Harry Turner. Commenting on the statements in the Report, the President regretted that he could lay no definite scheme before the meeting, the negotiations with the Albert Hall Corporation having fallen through in consequence of a disagreement between that body and the Commissioners. Negotiations on another basis were in course of discussion, and it was understood that the Commissioners of the 1851 Exhibition would, under certain circumstances, be prepared to enter into direct negotiations with the Society. In the course of his remarks the President said that "the Council were not prepared to sacrifice the horticultural work of the Society, the real objects for which the Society existed, to any exigencies of the neighbourhood where it happened to be situated; but," he continued, "that he was afraid they had come to the period of their existence when there was some danger of their being homeless. The Commissioners had in these latter days shown great consideration to the Society, but there was a difficulty in regard to the use of the conservatory in that, if it were used for shows, it might become liable to the payment of rates and taxes, which would be a serious item. Negotiations were in progress with the parochial authorities by which it was hoped that this difficulty might be met."

The unfortunate Liverpool show then formed the subject of comment, but over this bowl of spilt milk it is not necessary now to waste time; sufficient to say that the guarantors at Liverpool have amply fulfilled their obligations in the matter.

The work done at Chiswick was then alluded to, and especially in its connection with the Indo-Colonial Exhibition, and an intimation was given of reforms to be carried out in the distribution of plants or other matters connected with the garden. A well-deserved compliment was paid to Mr. Barron and to Mr. Dick, whose work met with special praise from the auditors. Sir Trevor then alluded to the recent meeting of the Horticultural Club, which he seemed to think consisted exclusively of members of the trade, which is by no means the case. Be that as it may, the President availed himself of the opportunity to acknowledge, in terms of cordial appreciation, the value of the co-operation afforded by the trade exhibitors, as also by enthusiastic amateurs. Sir Trevor alluded to the universal feeling of the necessity for the Society avoiding entangling obligations with any other body, and to the imperative necessity for an independent home. This secured, he thought there would be no great difficulty in obtaining the necessary funds—a statement evidently endorsed by the meeting, one gentleman subsequently promising to head the list with a donation of £100.

Mr. Guedalla seconded the adoption of the report. Mr. Shirley Hibberd elicited a statement from the President that in any case the fortnightly meetings and the shows of the special societies would be held, as usual, in the conservatory, or if that should be impracticable that it would be the imperative duty of the Council to make other arrangements.

Mr. Hodges alluded to the certificates of the Society, on which latter point the President stated that arrangements were in progress to secure some modification of the present system. After various other speakers had commented on the state of affairs, all expressing a desire for an independent home for the Society, Mr. Veitch said some very valuable suggestions had been made, but they ought to come to the point, which was, how was the Society to withdraw from its present position? They had a Council that any Society might be proud of, and yet the report was not a creditable one, and might have been more explanatory. Since 1859 or 1860 they had been knocked about from pillar to post, since, indeed, they had the misfortune of losing their President, the late Prince Consort. Her Majesty was applied to to appoint a successor to the Prince Consort, and she appointed the Duke of Buccleuch, and subsequently, Lord Aberdare. He mentioned this to show that Her Majesty had interested herself in the Society, and he thought if they went straight to Her Majety, she would help them through their difficulties. They wanted a home of their own, and if the School of Music and the Imperial Institute were to have their freeholds, he did not see why this Society should not have its freehold also. If they wanted funds they had only to go to the flower-loving people of this country. He thought a small committee should be appointed to obtain a freehold site upon which they might erect buildings and conduct the Society as it ought to be conducted.

Mr. Elwes urged the necessity for the appointment of a well-paid, highly qualified Secretary, and pointed to the Zoological and Agricultural Societies, whose success, he said, was largely due to their having had for many years highly trained and efficient gentlemen to manage their business. He should be

PALMS IN BRITISH GUIANA (MAXIMILIANA REGIA.)

glad to second any proposition for the appointment of a committee as proposed by Mr. Veitch. He criticised the proceedings of the Council, especially with reference to the delay in the publication of the Frost Report.

Mr. Smee proposed as an amendment that a temporary home should be established at Chiswick, which would give the Council time to look round for a suitable place for a permanent home. He would head any subscription list for the purpose with one hundred guineas.

This amendment was withdrawn in response to the wish of the Chairman, who said that the details must be left to the Council.

The report was then adopted unanimously.

Mr. Hibberd complained that the Council was a self-elected body, and said that the whole of the Fellows should have an interest in such elections. He suggested that the annual meeting should be held in May, when the attendance would be greater.

A long list of "defaulting rats" was then read, in connection with which the President expressed a doubt as to where the rats went to, the inference being that many of them would return when an adequate store of provisions was supplied for them.

Dr. Masters proposed a vote of thanks to the President and Council for their labours in the management of the Society, which was seconded, carried by acclamation, and duly acknowledged.

Maximiliana regia. — In our supplementary sheet we give an illustration of some young plants of this noble Palm as growing wild in British Guiana. The illustration was taken from a fine photograph obligingly furnished us by Mr. Im Thurn. This Palm, which is a native of the Amazon district of Brazil and of British Guiana, attains a height of a hundred feet or more. The spathes are so hard that they are used by the Indians as cooking utensils, and also for baskets. Mr. Watson, in speaking of this Palm recently in our columns, says it requires stove treatment and plenty of water. For further particulars we refer our readers to that note (October 16, 1886, p. 491).

Linnean Society of London. — The next meeting of this Society will be held on Thursday, February 17, at 8 p.m., when the following papers will be read: — 1. "Phytobiological Observations, part ii.: Forms of Seedlings and Leaf of Liriodendron," by Sir John Lubbock; 2, "On Disclaspis pellucida from Scales of Hydrophid," by Dr. P. C. Hoek; and, 3, "Observations on the Genus Ficus," by Dr. Geo. King.

Birmingham Gardeners' Mutual Improvement Society.—At a meeting held on February 2, on the conclusion of his paper on "The Rise and Progress of the Association," Mr. John Hughes, Hon. Secretary of the same, was presented by Mr. Latham, the Chairman, on behalf of ninety-six subscribing members, with a valuable gold English lever watch, bearing an appropriate inscription. Mr. Hughes, in acknowledging the gift, alluded particularly to the success attending his efforts to establish a library in connection with the Society, and to the generous gifts in aid that it had been his happy lot to receive from gentlemen in the neighbourhood. The good work which the Society was doing among members of the profession must be patent to every one, and its future welfare was also confidently predicted. On the 16th, a discussion on the cultivation of the Grape Vine, introduced by Mr. Harris, is the chief item in the programme.

Agricultural Returns of Great Britain. —The returns giving the areas under cultivation which we noticed in our columns has been supplemented by a similar publication containing estimates of the average produce per acre of the principal crops. The gross produce of Wheat in 1886 shows a decrease of 16,119,768 bushels. Ireland also shows a falling off. With regard to Potatos the disease is referred to as having shown itself to a greater degree the last year, and the rate of yield was below the ordinary average by about ·51 a ton per acre for England, ·13 for Wales, ·17 for Scotland; Ireland's crop has also decreased.

Jubilee Memorial.—One enterprising firm commemorates the occasion by circulating a treatise on gardening in general, and of some manures in particular, which are the object of special recommendation by the firm in question—"simply as a commemoration of Her Gracious Majesty's year of Jubilee." Such patriotism demands sympathy, accordingly one of our contributors sends us a letter from the firm in which the recipient is told that "we should take it as a personal favour from yourself if you will in your valued contributions to the Press kindly commend our book." The "contributor" very naturally brought the matter under the notice of the Editor.

The Embankment Gardens. — There are some curious instances of the gardening art practised in the enclosure by Charing Cross railway station. If we may judge by the way in which the borders are being dug over the person in charge must suppose that all roots near the surface are very detrimental to the well-being of shrubs and trees. Recently, some men with spades were to be seen digging amongst the unlucky vegetation of the borders, driving the tool into the ground to the full depth of the plate, and close up to the rootstock or stem, as the case might be. With this barbarous treatment, is it any wonder that the poor things become permanently stunted—that there is always much dead wood in them, and that a short spell of dry weather causes them to flag sadly? Much of the tree pruning done there is on a par with this ignorant treatment of the roots, the knife and the saw being used with cheerful disregard of the rules of the art. An attempt has also been made to spoil the broad foreground of turf—none too much in any part—by planting solitary specimens of evergreen Euonymus. This little innovation might be pardoned if the shrubs had not been planted almost in a line and at regular distances apart, but lightly grouped in threes or fives at suitable points, so that diversity could have been obtained without formality.

Dresden International Exhibition.—Our valued correspondent, Herr Professor H. G. Reichenbach, of the Botanic Garden, Hamburg, sends us the following:—"Mr. J. G. Seidel, Striesen, Dresden, kindly informs me that the German Government has given all facilities for the importation of plants from England which are destined for this Exhibition. There will only be an investigation at the frontier in search of Vines or parts of Vines—no other formality. No demand at the 'Reichsamt des Innern,' Berlin, Wilhelmstrasse, is necessary; hence any address should contain the indication, 'International Exhibition of Dresden.'"

Scottish Auricula and Primula Society. —A meeting of Auricula growers and others interested in the formation of a Scottish Auricula and Primula Society will be held at 5, St. Andrew's Square, Edinburgh, on the 12th inst., to take into consideration the desirability of holding an Auricula exhibition.

Tecoma Ricasoliana.—Signor E. Tanfani describes and figures in the last number of the *Bulletin of the Royal Tuscan Horticultural Society* a very pretty species of Tecoma with Rose-like, pinnate foliage, and a terminal panicle of rosy-lilac tubular flowers, each about 1½ inch long, with a flattish 5-lobed limb of about the same diameter.

Roses.—M. Crépin has recently published a short treatise on those Roses like the R. arvensis from which our Ayrshire has been derived, and in which the numerous styles are more or less consolidated into one mass projecting beyond the mouth of the lip. M. Crépin lays great stress on the inflorescence, that is, the number, and the arrangement of the flowers in umbels, or in pyramidal groups. In his group of Synstylæ M. Crépin includes R. multiflora (syn. polyantha), moschata (syn. Brunonis, Lindley), sempervirens, and arvensis.

Manipur.—Dr. Watt, writing in *Nature*, says that Manipur is a small valley surrounded by mountain ranges, and in this valley the rainfall was found to be only about 39 inches; but seventeen miles off, in the mountains which formed the north-east ranges, the rainfall was as much as 120 inches, and towards the Naga country to the north it became greater and greater in certain limited tracts. In the Khasia Hills 600 inches might fall in one place, and twenty miles off only 50 inches. Nothing in Manipur struck Dr. Watt so much, as a botanist, as the remarkable transitions of vegetation in that small region. Dr. Watt gathered twelve or more species of Oaks, many of which were new to science, and ten or twelve species of Rhododendrons, in Manipur alone. The Rhododendron Falconeri found in the Naga Hills by Sir Joseph Hooker is nowhere met with in the immense tract between the Naga Hills and Sikkim. This and the epiphytic R. Dalhousiæ, which grows on a hill thirty miles north of Darjeeling, Dr. Watt found in the Naga Hills at an altitude of 6000 to 8000 feet, but these Rhododendrons never occur in Sikkim below 10,000 to 13,000 feet. There were many instances of plants falling in their altitude as the traveller passed to the east and south-east from Sikkim, until at Moulmein a Rhododendron was found growing near the sea—a circumstance which was not met with in any other part of Asia.

Seed Lists.—We have received the exchange lists issued by the authorities of the Jardin des Plantes (27, Rue Cuvier, Paris), and by those of the Palermo Botanic Garden. Both are remarkably full lists.

Fruit Show at Chester.—It is proposed to have an exhibition of hardy fruits (Apples and Pears) at the Grosvenor Museum, Chester, on March 3, 4, and 5 next, and to make it an occasion for holding a Fruit Conference, when papers on various subjects relating to the question of fruit growing will be read, and opportunity for free discussion will be given at the close of each paper. A special object is to see what late keeping kinds of Pears and Apples may be got together in the district, and by means of addresses and discussion at these meetings, to elicit information upon a subject, not only of local interest, but of national importance. Mr. E. J. Baillie is the Hon. Sec.

"Album Benary."—The last issued part contains quarto coloured plates, devoted to the illustration of various forms of Onions, Cucumbers, Savoy Cabbages, and various herbs, such as Basil, Chervil, Purslane, and Sage, of which latter the leaves are represented too large. The plates are excellent, but there is no accompanying text.

Formation of Dew.—From a paper read before the American Association for the Advancement of Science, in August, 1886, by Prof. H. E. Alvord, on the "Formation of Dew," we learn that the facts established by repeated observations are, that the lower stratum of air rapidly increases in cold as we descend towards the ground, until checked by the radiation of heat stored up there during the day. The height of this critical stratum, where the two temperatures just counteract each other, varies under different conditions. On bare soil it is usually very near the surface, and even may be slightly below it. Grass or other thick growths of vegetation behaves like the soil in retaining a considerable degree of heat in the air entangled among its foliage, so that its presence restrains the cold stratum of air at a still greater height. There is, therefore, on the occasions when dew is formed most copiously a stratum of air of markedly low temperature lying close down to the surface of the ground, with its

lower limit sharply defined, but above gradually increasing in heat. Above this stratum is the comparatively warm atmosphere, bearing watery vapour; below it a thin layer of air supplied with heat and moisture from the soil. The result is the formation of dew by condensation of watery vapour within the cold stratum. Most of the moisture seen upon many plants in the morning, in the course of a season, is transpired by the plants themselves, and this transpiration is sufficient in quantity to supply an appreciable portion of the atmospheric vapour subsequently deposited as dew.

A Manual of Orchidaceous Plants.—The first part of Messrs. James Veitch & Son's *Manual of Cultivated Orchids*, devoted to the genus Odontoglossum, has just been issued. It is uniform in size with their *Manual of Conifers*. We shall revert to it on a future occasion. In the meantime we may say it is illustrated with maps and woodcuts, and that the sensible Centigrade thermometric figures are given as well as the stupid Fahrenheit degrees.

Exhibition Fixtures.—The annual exhibition of the Tunbridge Horticultural Society will take place on August 17, and that of the Maidenhead Horticultural Society on August 18.

Reading Horticultural Society. — The usual spring exhibition of this Society will this year be extended over two days, and take place on June 22 and 23—a little later than usual. The summer show is fixed for August 25.

Moore Memorial Fund.—The Editor has to acknowledge the receipt of subscriptions, varying from 2*s.* 6*d.* to £1 1*s.*, from M. Louis van Houtte, Ghent; B. S. Williams, J. Laing, and W. Holmes. Further subscriptions should be sent to Dr. Masters, at the office of this Journal, or to Harry Veitch, Esq., King's Road, Chelsea.

The Burridge Fund.—The following contributions to this fund (see p. 220) have been received by Mr. R. Dean:—Messrs. Carter & Co., Holborn, £5 5*s.*; Messrs. Hooper & Co., Covent Garden, £1 1*s.*; Messrs. Watkins & Simpson, Exeter Street, Strand, 10*s.* 6*d.*; Messrs. Hurst & Son, Houndsditch, 10*s.* 6*d.*

Magnolia acuminata. — Professor Sargent has contributed to the *American Journal of Science* an interesting account of his recent journey to the mountain districts of North Carolina, originally explored by Michaux nearly a hundred years ago, and not visited by any botanists since that time, though other parts of the same country were explored by Asa Gray in 1841. The principal object of Michaux was to get living plants of Magnolia cordata. This form, it appears, though commonly distributed in gardens, has never been found wild since Michaux's time, hence it was one of the aims of Professor Sargent's journey to rediscover the plant. Following in Michaux's tracks Professor Sargent visited the mountains, which are still covered with Magnolia auriculata, and hereabouts also is found the curious Shortia, to which such interest attaches, and which was figured in the *Gardeners' Chronicle*, vol. xv., 1881, p. 596. The true Magnolia cordata of gardens was, however, not discovered, although here and there in the mountains of Carolina and Alabama trees are found intermediate between M. cordata and acuminata. The conclusion to which Professor Sargent arrives is that M. cordata is only a variety of M. acuminata. It is not generally known, we may remark incidentally, that M. acuminata (the so-called Cucumber tree) is a good town tree, being not only distict and handsome in character, but able to resist the injurious effects of smoke.

Maize Products.—An interesting feature of the forthcoming American Exhibition at Earl's Court, Kensington, will be the display of Indian corn in all its phases, from grain on the stalk to the last refinement of manufacture in table delicacies: and the purpose of this exhibit is to illustrate the wide variety of food products obtained from it, and also to afford instruction as to the methods of preparing starch, corn, sugar, or glucose, paper-pulp, and other products.

Publications Received.—*Handbook of the British Flora.* By G. Bentham, F.R.S. Fifth edition, by Sir J. D. Hooker, F.R.S. (London: L. Reeve & Co., 5, Henrietta Street, Covent Garden.)—*Agricultural Produce Statistics of Great Britain: Tables showing the Extent in Acres, and the estimated Average Produce per Acre for* 1886. (London: Eyre & Spottiswoode).—*Observations on a Disease Affecting the Eyes of Sheep.* (Bulletin No. 32, Agricultural College of Michigan).—*Annual Report of the Arnold Arboretum.* By the Director. (Cambridge, Mass).

Notices of Books.

A Dictionary of English Plant Names. By James Britten and Robert Holland. (Trübner & Co.)

We are glad to be able to announce the publication of the third and concluding part of this most useful publication. In it are gathered together from all available sources, the genuine popular names of plants, names which our ancestors bestowed, names which have in many instances found a place in literature, names endeared to us by many an association; names, moreover, still in use by the peasantry, though fast dying out. Their fate is sealed: such books as the present may prolong their tenure, but not avert their ultimate doom. On literary and ethnological grounds this is to be deplored. On scientific grounds it might at first sight seem a matter for regret also, but when we find that what we have been in the habit of calling a Primrose is by right of priority a Daisy, while a Daisy is sometimes a Daisy and sometimes a Primrose, and when we daily experience the intolerable nuisance of so-called popular names, we cannot, in the interests of science, pretend to lament the disappearance of such misleading and unauthorised epithets. Popular nomenclature is based upon uncontrolled imagination, upon sympathy without knowledge, upon casual impressions unsupported by fact; it is a chaotic confusion of words without clue or index. Scientific nomenclature is bad enough and barbarous enough no doubt, uncouth to the eye and embarassing to the tongue, but these are obstacles that are only felt by those who have not sufficient interest in the subject to take the small amount of pains necessary to overcome them. Scientific nomenclature at least implies system, order, and registration.

"Publicans and sinners," according to the book before us, are "Marsh Marigolds" and "Buttercups" growing together, but which is the "Publican" and which the "Sinner" is not stated. In any case we venture to think that the words Caltha and Ranunculus, by which the plants in question are known throughout the civilised world, are in all ways preferable.

That a register of all such popular names as those alluded to should be drawn up is, however, of very great importance from a literary point of view. The very next entry to the one already cited shows this clearly. How many of us meeting with the name Puckfist would think of a Puffball? How few of us, let us hope, are there who would not be interested in the playful fancy the name indicates?

"Puckfist, Lycoperdon Bovista, L.—Frequently used by early writers as a term of contempt, as in Ben Jonson's *Alchemist*, act i., sc. 1, l. 63; Vicars' Coleman Street Conclave visited London (1648), p. 13, &c. Cfr. Fuzz-ball. In Glou[cestershire], Puckfoust (*Cotswold Glossary*). An Irish name for it is 'Cos a Phooka,' or 'Pooka's foot,' *i.e.*, 'Puck's foot;' Keightley's *Fairy Mythology*, p. 317; Prior, p. 189."

This citation may serve also to show the care and diligence of the compilers.

The work of Messrs. Britten and Holland differs from the standard work of Dr. Prior, in taking cognizance not only of literary names that have found their way into books, but also of provincialisms which have not found their way into literature. It is prefaced by a very interesting Introduction, showing the principles on which the authors have worked, the probable sources of some of the names in various languages, the perversions and mutations they have undergone; and, lastly, a very full bibliography and excellent index.

Tobacco: Growing, Curing, and Manufacturing: *a Handbook for Planters in all Parts of the World.* Edited by C. G. Warnford Lock. (Spon, 125, Strand.)

Those who are thinking of carrying out further experiments in Tobacco culture will do well to read this little treatise devoted to an explanation of the several processes of cultivation and manufacture. The experience upon which the cultural notes are based has been gained chiefly in Cuba, India, and the United States; for our own climate the experience of farmers in Holland, Northern France, and Belgium, would be preferable. The great difference in this country results from our relatively defective sun-heat and light, which not only spreads the ripening period over a much longer time, but necessarily exposes it to much greater risk from storms or insect injury. Add to this the excise regulations, and it will be seen that the British farmer cannot hope to compete with the foreigner, and will be wise not to embark too heavily in a crop so exacting and exposed to so many risks. On a small scale, as an adjunct to other crops, it may, if the Government permit, be grown to profit here in favourable seasons, as well as in Holland or Northern France. In many of our colonies, however, there is no reason why Tobacco should not be as well grown and manufactured as it is in Cuba or Manilla; and if Mr. Lock's book succeed in stimulating our colonial brethren in this matter he will have done excellent service.

Mr. Lock's book contains a large amount of information relating to the fiscal regulations in other countries than our own, and much of statistical detail, not otherwise easily accessible, and which will be valuable to those concerned.

Life Histories of Plants. By Professor D. McAlpine. (Swan, Sonnenschein, Lowrey & Co.)

An elementary introduction to the study of natural history, based upon modern teaching, and treating of the organs of plants morphologically according as they are elemental, typical, reduced, or metamorphosed, and ranging them physiologically according to the purpose they serve as organs of protection, support, nutrition, digestion, absorption, circulation, respiration, excretion, motion, sensibility, or reproduction. The several main groups are then treated of, and the principal features of their life-history concisely summed up by the aid of ingeniously contrived diagrams. The book may be recommended as an excellent introduction to physiological botany.

Album of Indian Ferns. By C. E. Baynes. (London: W. Day, 21a, Berners' Street.)

This book consists of a series of quarto plates, executed in chromo-lithography from water-colour drawings by Mrs. (?) C. E. Baynes. The species figured number thirty-three. Detached fronds are depicted only, with little or no attempt to show mode of growth, venation, or details of fructification. The fragments depicted are faithfully and well drawn, and had they been supplemented by other details might have been of value. As it is they form a pretty book for the drawing-room table, which is perhaps all that the author intended.

Amateurs' Notes.

Odontoglossum Hrubyana and Cattleya Percivaliana alba.

It may interest Orchid *connoisseurs* to learn that my plant of Odontoglossum Hrubyana is once more in flower here, this time with a spike of fifty-one flowers of the purest white, and, as usual, without spots; thus again proving the distinctive character of the variety.

I have also in flower Cattleya Percivaliana alba, for the first time here—a flower perfectly distinct from Cattleya crocata, upon which point I am able to bear testimony, as I have also flowered the latter plant, which is allied to the Eldorado section, and flowers at the same time with them. *William Lee, Downside, Leatherhead.*

Orchid Notes and Gleanings.

PHAIUS GRANDIFOLIUS.

I have a plant of this in full bloom in the conservatory which has been in bloom for six weeks, and which appears as if it will last six weeks longer in perfection. It is in a 9-inch pot, has six spikes of bloom, and on each spike there are twenty-four blooms—twelve fully opened flowers and twelve to open. The flower-stalks are 3 feet in height. This good old plant is not so much grown in gardens as its beauty and long continuance in bloom and easy culture would commend it, and it is a most convenient plant to arrange with other plants, and is very effective. After the plants have done blooming they should be rested by being kept dry in a house of about 50° of heat till growths begin to push from the base of the stem, and when the young shoots are about 1 inch in length the plants should be repotted into well drained pots into good rough peat soil liberally mixed with sand and broken potsherds well mixed together, then place them in a house where they can have 60° to 65° of heat, and syringe them once a day till they have made their full growth, then place them in a temperature of 50° to 60° till they are required to bloom. If required early they should be put into more heat, as they force well. They are easily increased by dividing the offsets, and potted into small pots and treated as above recommended. *W. Smythe, Basing Park, Alton, Hants.*

Lælia anceps, Five Blooms on a Spike.

In reply to the question put by "An Amateur," on p. 114, I can inform him that we have often had spikes carrying five fine blooms. I think it was in the spring of 1880 that our largest specimen had three such spikes, but the three following years it produced one or more spikes with that number of blooms: and had four blooms each at the flowering period last spring, but neither then nor at the present time can we boast of a spike with five blooms. The specimen has eight spikes, two of which have four blooms each, five have three each, and one (a late weak growth) has but two. It may be mentioned, however, that this plant is much weaker than last year, on account of a check it received a year ago when it was sent up to the Royal Horticultural Society's meeting in very cold weather. It is now showing signs of rapid recovery and may again be vigorous enough to throw five blooms on a shoot. As we do not possess a plant of L. anceps Dawsoni I cannot say if that variety will produce five blooms, but four is a number to be proud of. *N. Blandford, The Gardens, Moor Hill, West End, Southampton.*

Sophronitis violacea.

An elegant and beautiful little plant, possessing the additional merit of flowering during the dull season. The flowers are bright rosy-purple, and from 1 to 1½ inch in diameter. It was discovered by Gardner, in 1837, in Brazil, that collector remarking that he found it only once, and then as a single small tuft, on the trunk of a large tree. Regnell, however, says it is common in the Organ Mountains. It is a very neat, compact little plant, from 3 to 4 inches high, and may be seen flowering in the cool Orchid-house at Kew at the present time.

Cypripedium elegans.

A note as to the colour of the flowers of this interesting species (mentioned on p. 145) has been found which seems to me to be desirable to have record here. It runs: "Flowers green-yellow, with red stripes." *R. A. R.*

Eria Fordii.

This was described at p. 584 of last volume, and said to have been sent from Hong Kong, by Mr. Ford. Since then information has come from the garden that the plant was sent by Mr. Elwes, and was collected in the Himalaya. I take an early opportunity of correcting the error, though I am in no way responsible for it, as I simply copied the information from the garden label when the plants came for determination. But I now see that E. Fordii is simply a form of the Himalayan E. carinata. Assuming the locality given to be correct, and not identifying the garden plant with wild Himalayan species (which are not well dried), I concluded it to be new. Of course I ought to have identified the two, having them before me; but a vigorous living plant does not always look exactly like a shrivelled herbarium mummy. E. rosea, the only other species of the group, is a genuine Hong Kong plant. *R. A. R.*

Florists' Flowers.

THE AURICULA.

It is now the second week in February, and the whole collections of plants sheltered by frames or glass-houses have, under the influence of mild weather, started into growth. There is not much work required to look after them, as we have discontinued the old-established custom of removing a portion of soil from the surface and top-dressing afterwards with rich loam and manure. They do not require a very large supply of water at first, but none of them should be allowed to become dusty dry. This is the best time to take off and to propagate offsets. Very few of them fail to form roots, and do well subsequently when put in at this season. The largest proportion of plants will now appear aboveground, the produce of seeds sown in July last. If seeds were not sown in July they ought to be sown now without delay. As soon as the plants have formed the first leaf they may be pricked out, as has been advised in previous numbers.

The Carnation and Picotee.

I have had a very much larger number of diseased specimens of these sent to me this season than in any previous one. I have now before me a bunch of plants with half of the leaves quite dried up, and those that are green will soon be like the dried ones, as they are in various stages of decay. These and other specimens that have been sent have really no disease caused by fungoid growth or any insect pests injurious to them. I have no doubt that the injuries are caused by the treatment they receive. [Probably the leaf worm. Ed.]. We grow a very large number of plants of all the sections, including yellow-ground Picotees, and Tree or perpetual-flowering Carnations, and I can say without hesitation that we have never had any "spot" on the leaves, gouty growths at the base of the stem, or had the leaves die off with damp. These are all derangements of the functions of the plants that may be prevented by a good system of culture. The plants are all quite hardy, but they must be kept from an excess of moisture, although this is perhaps not more injurious than erring on the side of over-dryness at the roots. I do not at any time like the plants to be dusty dry at the roots, but would water them at mid-winter, to prevent this over-dryness; they must not be watered in frosty weather.

Tree Carnations.

It is quite time that cuttings of Tree Carnations were put in, if strong early-flowering plants are required; the plants propagated from these early-struck cuttings will produce flowers in September; they require growing on in a heated house at first. All our compost for potting the Carnations and Picotees has been prepared, and they will be potted in three weeks. The plants are placed in cold frames until they are well established.

The Dahlia.

The tubers have now been placed in boxes, and have been placed in a house where they have some artificial heat, but not too much; as we do not require many cuttings there is ample time to obtain them without too much heat. The pot roots are started later. Seeds should be sown on a gentle hotbed about the end of this month, and when the plants are well up prick them out in boxes about 3 inches apart, to be subsequently potted off. These will produce strong flowering plants in the autumn, whether they have been saved from single or double flowers. It is necessary to grow the plants up with a vigorous sturdy habit, and they must not be crowded too closely together nor grown in an overheated place, especially in the later stages of their growth.

The Hollyhock.

We have kept the plants out in the open borders for three seasons now, and hope that the disease has disappeared. We have now put in a lot of cuttings taken from the plants out-of-doors. Planted at this time of the year, a single cutting in a small pot, they nearly all produce plants. The pots are plunged in a little bottom-heat in a forcing-house, and a close bell-glass is placed over them. Do not give any water for the first week or ten days, as water may cause some of them to rot off. Some persons are adepts at propagating them by root-grafting. A small portion of root is taken; the cutting is whip grafted on to it, and tied firmly with matting. It should then be potted in the same way as the cuttings are, covering the union with the potting soil. *J. Douglas.*

Foreign Correspondence.

Professor Beal, of the Agricultural College of Michigan, narrates in brief the results of his experiments in growing forest trees in the Arboretum under his charge, and alludes to the varying conditions regulating the hardihood of trees:—

Last winter, says the Professor, was as cold as any we have had in twenty years—33° Fahr. below zero—yet thrifty sprouts of Magnolia umbrella remained alive to the terminal bud, Perhaps this was owing to the fact that there was plenty of moisture in the soil, or little wind or no sunshine during the freezing period, or all of these combined, or for some other reason not yet understood. These Magnolias have usually, even in mild winters, died to the snow line.

For six years a number of trees of the American Persimmon (Diospyros) have died every winter near to the ground. From this I supposed I was warranted in pronouncing this well known tree as tender in Central Michigan. Two years ago I chanced to visit a garden on high clay land, less than ten miles distant, where young trees of the same kind were healthy and hardy, and had borne fruit two seasons in succession. Whether this difference was all owing to the difference in soil, or elevation, or cultivation, or the different location from which the seed was procured, or from other causes, I am still uncertain.

In starting the trees in the Arboretum the seeds were usually planted when freshly gathered, just where the trees were to remain. The rows are 4 feet apart and run north and south. For five or six years, and in some cases more, they were regularly cultivated like a field of corn [Maize] till about the middle of August, and again late in autumn. As the trees crowded some were cut out. A very little trimming has been done by way of removing dead limbs and preventing bad crotches.

After the trees had got a good start and shaded the ground pretty well, cultivation generally ceased, as it seemed as though they would take care of themselves, but grasses and weeds soon crept in and partially occupied the ground, apparently retarding considerably the growth of the trees. The grasses and weeds which seem to do the most harm are capable of growing late in autumn and early in spring, while there is no foliage on the trees to shade the ground or plants below.

The trees where slightly crowded show a marked difference in their habit of holding their lower leaves. The lower branches of Black Walnut. Butternut, and White Ash die young, because they do not carry their leaves. The tops are thin, allowing sunlight to pass through to the ground and light up grasses, weeds and other undergrowth. On the contrary, White Oak, White Swamp Oak, Beech, Sugar Maple, Dogwood, Hazel, Blue Beech, Choke Cherry, Poplars, and sprouts

and seedlings of many others hold their lower leaves well. Some of the evergreens, such as White Pine, Arbor-vitæ, Red Cedar, and Norway Spruce, also hold their lower leaves well. To save the expense of cultivation after a few years and to keep the grass out we need to know the best nurses—*i.e.*, the trees, shrubs, or herbs which hold their leaves well in the shade. Forest leaves where deep enough keep out the grass, but the wind drives most dead leaves out of the Arboretum.

THE HARDY FRUIT GARDEN.

PEACHES AND NECTARINES.

These should now receive attention by unnailing and cutting out the shoots that bore fruit last season, retaining as much of the young bearing wood as will properly furnish the trees for the present season, leaving the shoots the entire length if well ripened, and not shorten them in except where it is necessary to balance the trees and furnish wood to fill up blank spaces, taking care then to shorten back to a triple or well developed single wood-bud. Keep the branches unnailed and loose from the wall for the present till the forwardness of the buds calls for no further delay in nailing or tying in the shoots. Fasten the shoots and branches carefully to the wall. The fan-trained system is mostly practised in training stone fruits generally, and is the only one worthy of adoption. Preference is given here to the more hardy American varieties of Peaches for cultivation on the open walls, such as Alexander, Hale's Early, Condor, à Bec, and Sea Eagle; and amongst Nectarines to Stirling Castle, Lord Napier, Humboldt, Pine-apple, and Pitmaston Orange.

Protections.

There are various methods recommended to protect the trees at the time of blooming, but there is none that equals that of glass copings over the trees, with Frigi Domo suspended from it: but when this cannot be afforded the means as recommended for Apricots in a former Calendar will answer the purpose. Some gardeners use the protecting material to shade the blooms from direct sunlight and so assist to retard the blossoms, but many good cultivators believe the bloom is made more tender thereby, and more susceptible to injury by frosts. Of course during inclement weather, and as a safeguard against hailstorms, it should certainly be drawn down during the day, and also be drawn down almost every night, after the blooms are expanded, and should be drawn up on fine days. *E. Ward, Hewell Grange, Bromsgrove.*

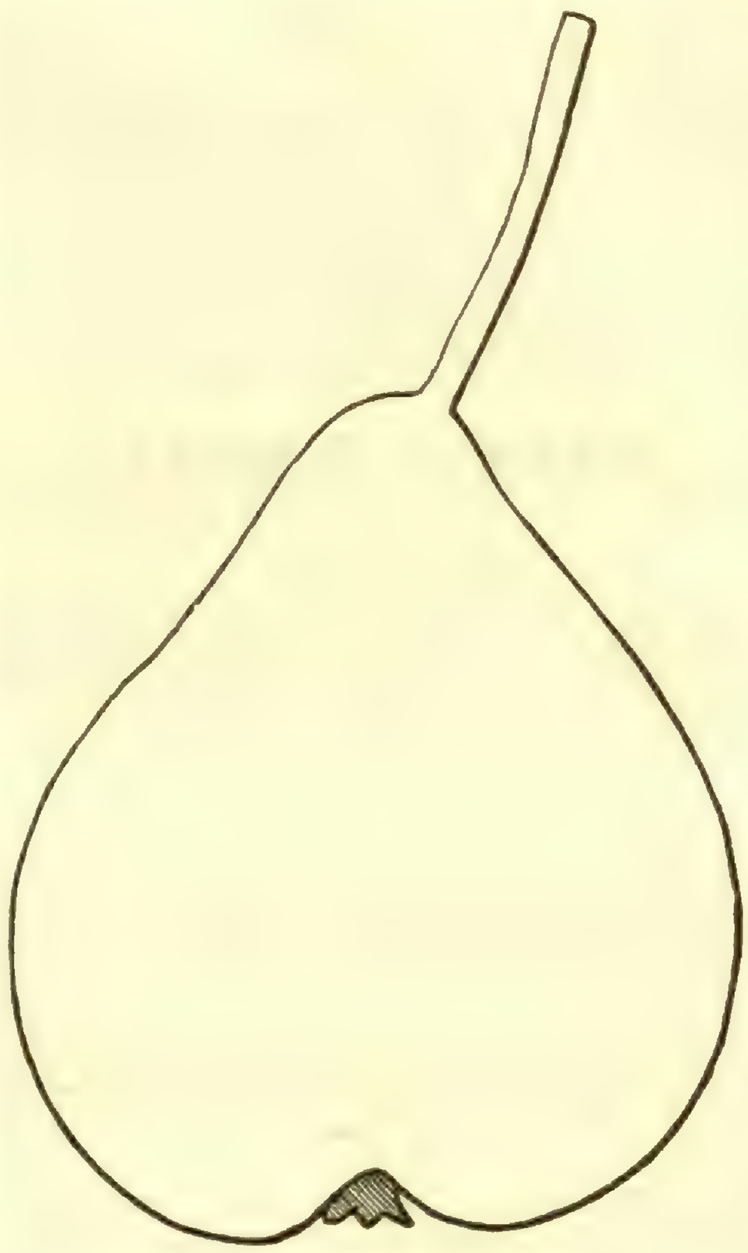
PEARS.

A SELECTED LIST OF ONE HUNDRED VARIETIES OF PEARS.

(Continued from p. 150.)

December.

1. Bergamotte Cadette (fig. 52).—Of medium size, moderately good, but always passable.
2. Beurré Alexander Lucas.—Medium, handsome; fair quality.
3. Beurré d'Aremberg (fig. 50, 2).—Of moderate size, fine brisk acid flavour; greatly relished by some.
4. Beurré Langelier.—Very handsome; moderately good quality.
5. Beurré Buisson.—A large long Pear, of excellent quality, and constant.
6. Beurré Bachelier.—Large, of moderate quality; great cropper.
7. Beurré Diel.—Large, of somewhat uncertain character, sometimes excellent; great cropper.
8. Chaumontel.—Large, of very uncertain character, excepting in warm situations.
9. Glou Morceau (fig. 50, 1).—Large, very fine in quality; generally a great cropper.
10. Huyshe's Bergamot.—Of medium size; moderately good quality.



G. 49.—PEAR PASSE COLMAR.

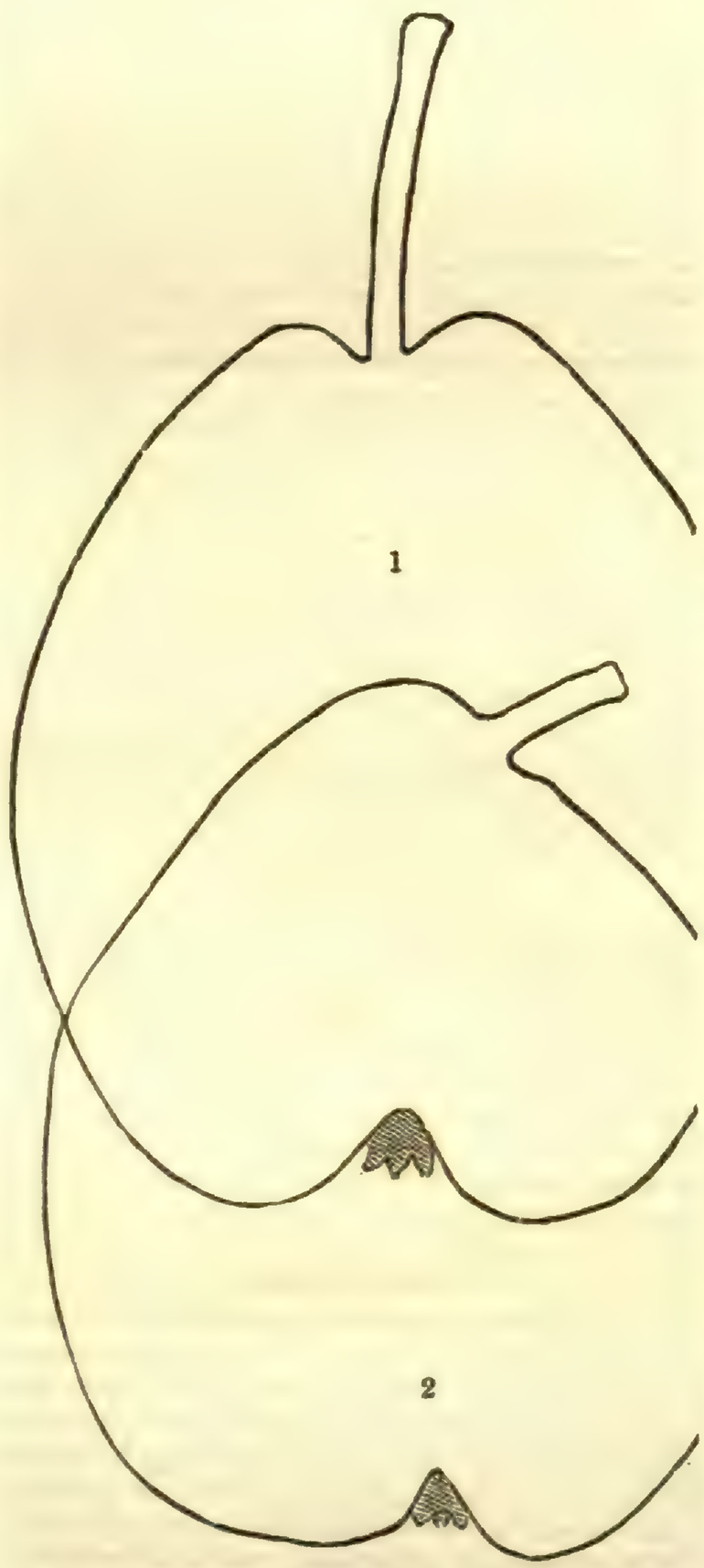


FIG. 50.—PEARS: 1, GLOU MORCEAU; 2, BEURRÉ D'AREMBERG.

11. Huyshe's Victoria.—Of medium size, sometimes very pretty; moderate quality.
12. Josephine de Malines.—Of medium size; excellent quality, always good.
13. Knight's Monarch.—Generally rather small; sometimes excellent, but very uncertain; often falls prematurely.
14. Marie Benoist.—Large, rather fine appearance; fairly good.
15. Passe Colmar (fig. 49).—Of medium size generally; fine crisp flesh, richly flavoured; good cropper.
16. Nouvelle Fulvie.—Large; fine, crisp flesh, and well flavoured; a good Pear.
17. Triomphe de Jodoigne.—Large and unshapely, sometimes of good quality.
18. Vicar of Winkfield.—Large and rather handsome, sometimes good, but uncertain.
19. Winter Nelis (fig. 51).—Small, very juicy and richly flavoured; always good; one of the best of Pears.
20. Zephirin Gregoire.—Medium size: generally good in quality.

In December the variety of Pears worthy of cultivation is limited. It would be difficult to extend the list. The quality of the Pears of this season is very variable; in good seasons, many are of first-class quality, in others quite inferior; for example, Beurré Diel and Glou Morçeau, Winter Nelis, and Josephine de Malines, on the other hand, being always of nearly uniform good quality. *A. F. B.*

(To be continued.)

THE FLOWER GARDEN.

GENERAL WORK.

Pot off bedding Pelargoniums as soon as space can be afforded them in Peach-houses or vineries newly started. Do not be over-lavish in the application of water to newly-potted plants. If the soil has been in a medium state when potting takes place, the withholding of water for a few days will do no harm.

Calceolarias may require to be transplanted to a turf-pit or other structure. Make a good hard bottom of ashes. On this place 2 or 3 inches of loam, leaf-mould, and charred soil (the Calceolaria is very partial to the latter). Place the young plants about 6 inches apart, and protect from heavy rains, frost, or strong winds. Give all the air possible, and when the plants begin to grow freely they should be pinched occasionally, to induce a dwarf stocky growth. The tops may be inserted as cuttings, but they will not make much of plants this year, only they may be useful to fill up blanks, should the disease attack the others in the beds. If Violas are growing freely and are likely to be too thick, they will be all the better of being similarly treated. The clipping of hedges should be pushed forward, as also the trimming of shrubs; climbers should be pruned and tied to their places. Use small twine in preference to shreds. The latter not only look clumsy, but they form capital hatching grounds for innumerable pests which are difficult to reach with appliance.

The rougher climbing Roses may be trimmed and tied. Cut out a good portion of the old wood and introduce the strongest and ripest of the last season's shoots. In order to have a succession of Clematis, some of the plants should be cut over now, another lot being reserved for a later period. Push forward the propagation of all carpet-bedding and other plants. Do not allow the cuttings to stand a day after they are fit for potting or boxing off. They are better when allowed to remain a few days in the same temperature in which they were rooted prior to removal to an intermediate one. Salvia Pitcheri is a capital free-flowering blue sort, and thrives well as a bedding plant in many parts, flowering in the autumn. I believe if it were struck early and not pinched it might be had in flower much earlier. If grown in good rich soil it will attain a height of 4 feet, but if the soil is of medium rich-

ness from 2½ to 3 feet it would do well for planting in a bed of Delphiniums, as it would be ready to take the place of the former when they were done flowering. *W. M. Baillie, Luton Hoo.*

Home Correspondence.

THE QUEEN'S JUBILEE: GARDENERS' ORPHAN HOMES. — In reference to the various proposals already suggested in your columns as to the best way for the gardening portion of the community to celebrate this remarkable epoch in our national life, permit me to suggest another one. In doing this I have no desire to derogate from any of the suggestions already brought before your readers. What I would suggest is, that a thoroughly strong effort be made to raise sufficient funds to establish homes for the orphan children of *bonâ-fide* gardeners and others in connection with the craft. I am careful to mention "homes," as I cannot help thinking, if the matter is gone into with spirit and enthusiasm, that two, at any rate, could be started in England—one in the North, and the other in the South. Now that the air is full, so to speak, of Local Government and Home Rule, doubtless our friends in Scotland and Ireland would prefer to establish one at least each in their own countries. There are few gardeners of any experience in life but have had cases of extreme hardship come under their notice through families of little children having been left helpless by the untimely death of their bread-winner. In some cases I have known both parents to have died. Now, while there may be some amongst us who do not altogether agree with the giving of pensions to disabled or aged gardeners, I do not think there can possibly be one true gardener in the country but would do something to help those to start in the battle of life who from no possible fault of their own are left penniless. I shall not attempt just now to give my ideas as to the way the matter might be worked, but in case the proposal is thought worthy of being gone into by some of the leading men in our profession, I will gladly give my ideas in sketching out a constitution as a basis to work on, and do what little I possibly can to help the matter on. *H. J. C.*

—— While all classes of society are looking about for some tangible mode of memorialising the Jubilee of our beloved Queen, the question will arise amongst the craft, What can gardeners themselves do? After hearing and reading many suggestions on the subject it occurs to me that a home for the orphans of gardeners is very badly wanted in the country. Almost every other craft has some similar benevolent institution, but the gardening fraternity has none. And when one sees earnest hard-working gardeners struck down in the very heyday of life, leaving their children totally unprovided for, it seems time that some such scheme should be set on foot. A hearty united effort must be made by all if this is to be effected. No difference of opinion, either religious or otherwise, must be suffered to break in and mar the harmony of the whole, but all should work together in one great universal effort to make it a success. In my humble opinion an orphanage with a good piece of land attached for cultivation, a school, &c., to hold fifty boys and girls, or more if the funds might permit, could be started if every gardener in the United Kingdom would contribute 5*s.* and every journeyman 2*s.* 6*d.* now, continuing the same as a yearly subscription. If any of the fraternity can improve on my suggestion I shall be happy to fall in with their views, but I trust the matter may have due consideration. *C. Penny, Sandringham.*

THE WEATHER IN YORKSHIRE.—A long cold wave of very wintry weather has just passed over us in the north of Yorkshire, and not without leaving its mark severely in the gardens here. Shrubs in general have not suffered so much as they have done in some past winters, but many of the fine old Hollies about the place have suffered terribly. The storm commenced on December 10, with more or less frost until the 19th, when we had 23° of frost; that was the greatest degree of cold we had in that month. On two occasions we had 16° in the month. January came in with less frost, but with very cold winds, cutting up the garden produce very much; fortunately we had a good cover of snow on January 5; next day we had bright sun and showers, followed on the 7th with 24° of frost. The next four days we had snow and rain, followed on the 12th and 13th with 15° and 18° of frost respectively. The frost was less severe until the 17th, when we again had 24° of frost; that appears to have been the greatest degree of cold we have had this winter. In the flower garden the spring bedding plants have suffered very much from the pressure of wet and frozen snow. The inhabitants of the kitchen garden, too, had their share of suffering, especially among the spring Broccoli. Some of the sorts have gone altogether; this, no doubt, would be caused by the weight of wet snow, and then followed by 24° of frost. The one sort that has come out scot-free is Veitch's Model Broccoli, and this sort I would recommend to be grown by all farmers and cottagers in our cold, wet district; the sturdy habit of this Broccoli saves it, it grows so close to the ground that the weight of snow does not break the leaves down. We suffer more at this place in winter than at any place I know. We are about 40 miles from the sea, with only an elevation of 170 feet above it, consequently, after a dull summer we suffer very much in a moderately cold winter. Most of the H.P. Roses are lost altogether if not taken up and potted, or otherwise protected. Many of the fine Hollies, with a stem of nearly 2 feet in diameter, are almost denuded of their leaves, and small branches die out, yet in the course of years, if left alone, these trees recover themselves. The winter of 1860—61 was too much for some of them—we had 46° of frost then; some were killed outright, others over 30 feet high are now struggling from the effects of that terrible winter. *William Culverwell, Thorpe Perrow.*

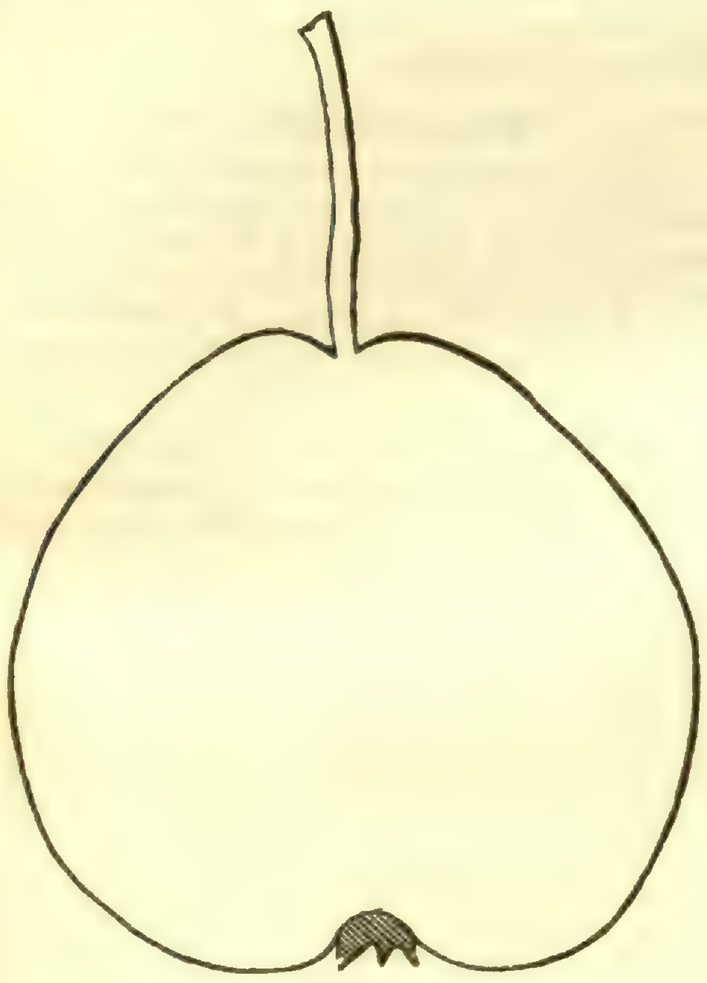


Fig. 51.—Pear Winter Nelis.

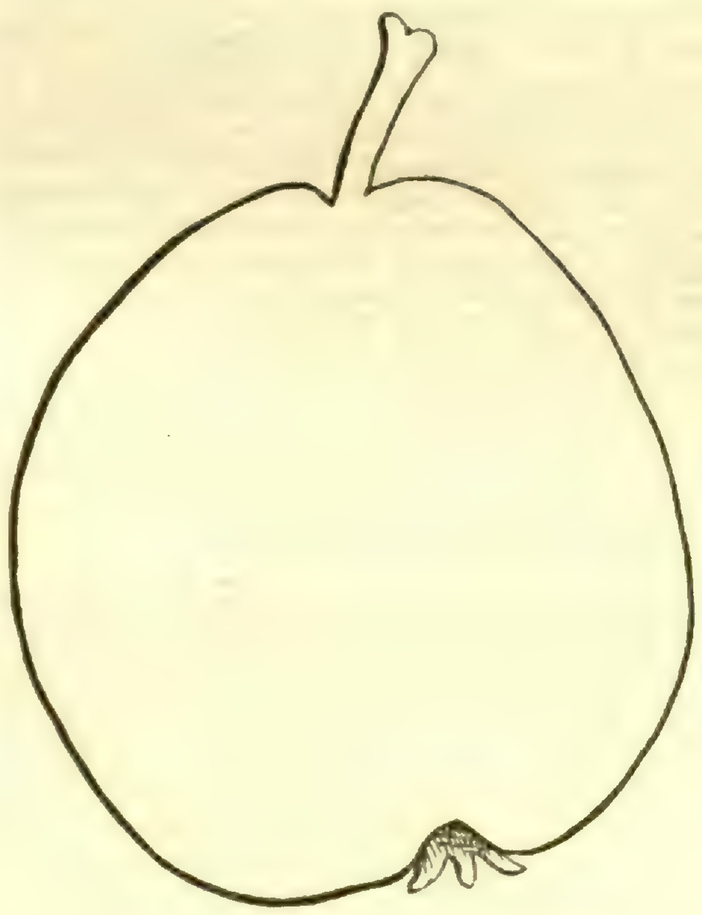


Fig. 52.—Pear Bergamotte Cadette.

FIREWOOD.—As a means of putting money into the pockets of landowners and others the supplying of bavins or pimps as the small bundles of twigs and brushwood are variously called in southern counties to the inhabitants of towns, especially London, seems either to have escaped notice or to be thought unworthy of consideration. The present supply is manufactured from timber of foreign growth, the price for which has gone mainly into the pocket of the foreign dealer, a portion only having remained with the importer and shipper. This wood, especially in winter, has very poor or scarcely any combustible qualities, and is a plague to all who have to do with fire lighting in the home. Bavins can be made from light brushwood and faggot materials, a good deal of which is burnt on the ground when clearing woods and coppices, as being of no commercial value. The best woods are Larch, Birch, Chestnut, Hazel, Hornbeam, and Ash, and if firewood in bundles of convenient length, say, 8 inches, and sufficient in quantity to light two small fires or one large one were supplied to the shops that now undertake the sale, the townspeople would soon forsake the sodden lifeless material now supplied to them at an exorbitant price. The cost of making will vary with the district, but with the present price of labour a man and a boy at 5*s.* 6*d.* per day could easily make 400 per day, to which 1*s.* 6*d.* must be added for material. The retail price in London of firewood is a halfpenny per bundle, and somewhat less per hundred. *W.*

IRISH DAFFODILS.—A box of bloom of a fine rich golden-coloured single Daffodil has come to hand from Mr. W. Baylor Hartland, of Patrick Street, Cork, which for vigour of growth, earliness, and brightness cannot have many equals. He has been gathering flowers from it in a cold house since December 20, and by February 10 it will be produced by thousands in the open. It is a purely Irish variety, said to have been in cultivation for 1500 years, and is known as Yellow King, or in the Irish vernacular, "Ard-Righ." Its earliness should result in its becoming extensively cultivated. It belongs to the magni-coronati section. *R. D.*

FEBRUARY FLOWERING CHRYSANTHEMUMS.—That in a season hostile in many respects to the late-blooming of naturally late Chrysanthemums there should be several in good condition during the first week in February shows that the efforts to secure a group of late winter-flowering varieties are meeting with marked success. At the present time Mr. William Owen has in his nurseries at Bourne End, Maidenhead, the following, among other varieties, in the best condition, despite the weather. The nursery is on the high ground west of Maidenhead, a mile from the river Thames, where there is a dry air, as compared with the lower portion of the town, and where also but little fog, comparatively, finds its way. Mention should be made of the following Japanese Chrysanthemums as valuable naturally late flowers, viz.:—Snowdrop, a charming pure white; Golden Gem, Nuit d'Automne, Ceres (also a white), and Melanie Robinet. Let it be noted that Golden Gem is the latest of all, a charming variety, wonderfully free, and extremely pleasing. Now, Mr. Owen's method of treating these late-flowering varieties is a very simple one, that any lover of the Chrysanthemum can follow. Cuttings are put in about the middle of April, three and four round a large 60-sized pot; they are placed in a frame, and kept as cool as possible, the lights being taken off at night, if it is necessary they be kept on by day. As soon as the plants have rooted and commence to grow, the tops are pinched out, and on breaking into growth they are shifted into 48-sized pots, keeping all the plants in one pot. When fully established

they are again stopped, and as soon as progress is renewed they are shifted into 32 or 24-sized pots, according to size, still keeping a trio or quartette of plants in a pot as the case may be. The final stopping is done about the middle of July. There is no secret in this method of treatment; it is what is done in the case of the October and November flowering varieties. As to stopping, it is difficult to lay down a rule that will apply to all the varieties, and in this respect experience is an excellent mentor, but it does not now appear to be difficult to have Chrysanthemums in bloom for nine months in the year at least, a proper use being made of the varieties according to their time of blooming. *R. D.*

ANGRÆCUM SESQUIPEDALE.—At p. 178, I see a correspondent writing of Angræcum sesquipedale as a plant not always to be relied on in developing its blooms. I may say I have never found this to be the case. I have a plant here growing with the Cattleyas and Dendrobes which has flowered annually for the last six years, averaging three spikes per year, with three and four flowers on a spike which last three weeks or more in perfection. The plant in question is a strong one, with seventeen leaves. Have any of our Orchid friends noticed the strong odour which the blooms send forth at night? *G. Lucas, Belmont, Taunton.*

AN APPEAL TO THE BENEVOLENT.—Permit me to call the attention of the horticultural fraternity to the case of Mr. F. K. Burridge, formerly of Colchester, and now of Emlen Street, Ipswich, who is unfortunately in very reduced circumstances, and in great distress. A quarter of a century ago he was well known in the London seed trade as a grower of seeds at Colchester, but the keen competition in the trade proved too much for him, and some years ago he removed to Ipswich, but fortune refrained from smiling upon his exertions. Mr. William Thompson, Tavern Street, Ipswich, assures me that the case is one of a *bonâ fide* character and urgent, and Mr. Burridge having written to me asking for assistance, I shall be happy to receive and send to him any sums that may be sent to me, and with your permission acknowledge the same in the columns of the *Gardeners' Chronicle.* Mr. Burridge will be known to many as the raiser of Calliopsis (Cosmidium) Burridgii, Chrysanthemum tricolor Burridgianum, &c. *Richard Dean, Ranelagh Road, Ealing, W.*

EARLY PEAS.—Referring to a paragraph under this heading on p. 153, it should be stated that Surpass William I., First Favourite, and Special Early, were all raised by Mr. Henry Eckford, Boreatton, Baschurch, and sent by him to Chiswick Gardens for trial. *R. Dean.*

AN EASY METHOD OF MEASURING THE HEIGHT OF A GROWING TREE.—Several methods of measuring growing trees have appeared in your colums at various times, but all requiring a more or less complicated calculation, and consequently can only be worked out by those who have a fairly good education, and in some cases, probably, expensive instruments. An accurate measurement may be quickly taken without either, as any one may make all necessary apparatus in a very short time, and at a cost of not more than sixpence. Take a straight piece of common slater's lath, say, for convenience in measuring, 10 feet long, plane smooth, and mark it in feet and inches; also a small piece of board, half an inch thick and 6 inches square will do very well (it must be perfectly square); draw a line diagonally across one side of the board, and on the other side screw two square staples sufficiently large to admit the lath to slide closely through; these must be exactly opposite each other. At from 5 feet to 6 inches above bore holes in the lath to admit a peg to hold the board in position, to suit the height of different persons (a stout wire nail makes a good peg); a yard of fine string, with a loop at one end and small weight at the other for a plumb-line, and that is all that is required. To measure the tree put the peg in a hole to suit your height, slide the board on to the lath to the peg, and hang the plumb-line on the peg, then walk to a distance from the tree, so that when holding the lath perfectly upright, which the plumb-line will show, on looking up the diagonal line across the board it is exactly straight to the top of the tree, the corner of the board nearest you will be exactly the same distance from the tree that the tree is high from that level, which can at once be measured by the 10 feet lath; add to that the height the board was from the ground, and you have the exact height of the tree. It is simply two sides of a square which must be equal. This can be done by any one, and certainly will not take five minutes. *Thos. Woodford, The Nurseries, Atherstone.* [This method is accurate enough if the ground be level, but it sometimes happens that it is not so, or the base line is inaccessible, owing to water or other trees or objects of some kind. Ed.]

BULLFINCHES AND FRUIT TREES.—I should like to ask the "member of the Selbourne Society" who so emphatically denounces Mr. Evans for suggesting a trap-cage for the destruction of bullfinches, what course I can pursue to save my Plum trees from the depredations of these birds, and not subject myself to the appellation he has applied to the proposer of the trap-cage. I am prepared to admit that the bullfinch is one of the handsomest, most intelligent and engaging of the finch tribe. I have had opportunities of indulging a fondness for birds, and my pets have ranged from finches to ravens, and I nourish a tender recolletion of a bullfinch that cheered many a lonely hour long years ago, so that in saying a word in defence of a gardener who has no doubt been a great sufferer from the peculiar taste bullfinches have for fruit-buds, and who would compass their destruction, I may be exonerated from undue prejudice against the feathered creation. The fault lies at the doors of that section of the community that has, by the indiscriminate destruction of rapacious birds, destroyed the due proportion and balance which a provident Nature has arranged, thus encouraging an undue increase in small birds, whose action in limited numbers was beneficent, but in excess brings serious loss to the fruit grower. I have spoken of the intelligence of the bullfinch, it is this ability of selection and a fine discriminating taste, that leads the families that frequent our wild woodlands, where Blackthorn and wild Cherry abound, to my orchards, and leaving the commoner kinds of Plum, such as Winesour and Damson, to clear the Green Gage Plum trees of every fruit-bud, year after year. Now I have a special demand for Green Gage Plums, consequently I am obliged to do violence to my feelings of regard for the bullfinch, and sanction the destruction of at least the most pertinaceous. If the tender-hearted member of the Selbourne Society will suggest a means by which this *ultima ratio regis* can be averted, he will confer a favour on a North Midland *Sufferer.*

CHRYSANTHEMUM GOLDEN GEM.—I forward for your inspection a head of bloom of my late-flowering Chrysanthemum Golden Gem, as a further proof of its qualities as a late flowering variety. This variety cannot be too highly recommended to all who want a good show of late kinds during January. It is free, and will open all its flower-buds, even if not formed until December. I may say it was struck in April, and received the same treatment as my general stock which I described to Mr. Dean; in fact this variety received worse treatment than most others, for want of room. *Robert Owen.* [The flower was fresh-looking, carrying healthy leaves. It should prove a useful late variety. Ed.]

TRADE NOTICES.

THE NURSERY AND SEED TRADE ASSOCIATION (LIMITED).

The annual meeting of this Association was held at the offices of the Association, 25, Old Jewry, on Monday last, Mr. N. N. Sherwood, the President, in the chair. From the report of the committee of management, which was read and adopted, it appeared that there had been collected in respect of debts which had been treated by the members as bad and handed to the Association for collection £2419 as against £1276 in 1885, and that the number of applications made by the members for information as to the *status* of intending customers had considerably increased. In addition to this it was also stated that several failures in the trade which had occurred during the year had been investigated by the Secretary on behalf of such members as were creditors and their interests protected. The balance-sheet compared favourably with that of the previous year, and showed a marked increase in the receipts. The number of members has steadily increased, and the interest in the Association has grown proportionately. At the suggestion of the President a committee was appointed for the purpose of considering any questions which might arise affecting nurserymen and seedsmen, with a view to taking combined action thereon, and the members were invited to communicate with the Secretary whenever any such questions arose.

In the evening the annual dinner took place at the "Guildhall" Tavern, when the President again presided, and in responding to the toast of "Success to the Nursery and Seed Trade Association," said that the report that day adopted showed that the operations of the Association had during the past year increased twofold over those of the first—an indication that the Association was recognised by its members to be of use to them, and he believed that when its advantages became more widely known many more members would join it. Mr. Johnson, in proposing the health of the officers and committee, said that from personal experience he could say that the report showed that the Association had during the past year made rapid strides. Mr. Veitch (J. Veitch & Son, Chelsea), Mr. Laing (Laing & Son, Forest Hill), Mr. C. A. Hooper (Hooper & Co, Limited, Covent Garden), Mr. Watkins (Watkins & Simpson, Exeter Street, Strand). Mr. Manning (Messrs. J. Veitch & Son), and several other prominent members of the trades, were present, and took part in the proceedings.

Messrs. Oakshott & Co.

Messrs. Oakshott & Co. announce that they have admitted into partnership Mr. James Henry Millard, and the firm will henceforth be known as Oakshott & Millard, of the Royal Counties Seed and Seed-Corn Establishment, Reading. Mr. Millard was for many years in the employ of Messrs. Sutton of Reading.

Foord's Annual Potato Report.

From Mr. W. Foord's annual Potato report we extract the following particulars:—

"We are experiencing an exceptional Potato season, and from my reports received from correspondents in all the Potato-growing districts in England, Ireland, Scotland, and the Continent, a careful analysis shows that the average crop is barely 4 tons to the statute acre. The disease has fortunately been conspicuous by its absence, except in isolated cases, but there is, and has been apparent for some time, a very serious element in the rapid deterioration in the quality of Potatos.

"It is a remarkable fact in the history of the trade that, although at the early part of the season Dunbar Magnums (Red Moulds) were offered in large quantities at almost nominal prices, ranging from 50*s.* to 52*s.* 6*d.* per ton, few, if any, speculators embraced the opportunity of realising enormous profits, and of thus securing a monopoly of the only superior Potatos to be had this season, knowing well that the facilities by water from the northern ports to London are so great as to render the risk at the prices named very inconsiderable indeed.

"Our arrivals at the Great Northern Market, as compared with recent years, have been very limited, which I attribute to the excessive railway charges with which we have to contend, in the face of the low freights by water.

"Twenty to thirty years ago it was almost impossible to meet with Potatos of inferior quality, and most of the sorts now almost totally extinct are, viz.:—Sweeps, Cups, Pink-eyes, Protestants, Rocks, Scotch Downs, Reds, Victorias, Regents, Flukes, Jersey Blues, Champions, Fortyfolds, and many others too numerous to mention, all of which were of superior quality and very prolific. What are now called Regents, Victorias, and Flukes have only a very small portion of affinity, and are utterly worthless as to quality in comparison to their ancestors. About seven years ago the present Magnum Bonum came into notice, and two years afterwards it became very popular with the community at large; owing to its excellent flavour and comparative good quality, they found much favour in every household, consequent upon the little loss in the peeling as compared with the trouble, time and waste necessary to prepare for dinner the Champion, its popular predecessor; but, alas! although only in its seventh year, it has long been manifest that this great good is doomed to a very brief existence, as is evidenced by

its present malformation and utter want of body; indeed, this season it is almost impossible to find any Magnums with quality in them. We have, long ago, had occasion to lament a continuation of the prolific crops of former years, and each successive season demonstrates the fact of a deterioration in the quality and apparently manifest early extinction of all eatable Potatos."

Partnership Dissolved.

Thomas Fletcher, Sen., and Thomas Fletcher, Jun., trading as Thomas Fletcher & Son, at Westfield Nursery, Ashgate Road, Newbold, and at New Square, Chesterfield, nurserymen, seedsmen, and florists. T. Fletcher, Sen., retires.

The Orchid Houses.

KINDS OF SHADING.

Glad as Orchid growers might be to see cloudless days and bright sunshine, they will soon find it necessary to reduce the amount of the latter in the cool and East Indian-houses, if the inmates are to be kept in health and the foliage green. I have been told by more than one person that we shall some day find out our mistake in shading so heavily, and that we shall allow all Orchids a much greater amount of bright sunshine. I have been leaning in that direction for years, but often found it wise to revert to the old methods. What is wanted in the East Indian houses at the commencement of spring is sun-heat without its shining too strong on the plants, therefore a shading that is necessary at midsummer is far too heavy now. If the day be bright with a cold wind, and a heavy shading is run down, the fires must be kept going, or the atmosphere will become more suitable for cool Odontoglossums than for East Indian subjects. I have endeavoured to remedy this by having a lighter shading to start with—one that will scarcely affect the light and in some houses I tack on the roof inside the thinnest tiffany. This lets the sun shine through the glass; in other houses I shall put on a thin wash of the "Eureka" shading. These fixed shadings can stay on after the roller-blind is used. It will act as a safeguard during summer if the blinds be not run down immediately the sun shines out, and the blinds can also be let down later in the morning and drawn up earlier in the afternoon.

Dendrobiums.

Those plants that are not required for exhibition purposes or for a succession of bloom will have the best season for growing and finishing; if induced to flower soon give them all the sunlight possible with plenty of moisture about the house on bright days, and very little top ventilation. The night temperatures in all the divisions might be kept a few degrees higher now, and on very mild evenings with a south wind the stoker should be guided more by the heat of the pipes than the thermometer, as it is not safe to let the fires get too low yet; if the temperature of the houses is high, leave the bottom ventilators a little open until late in the evening, otherwise if the wind changes suddenly northward during the night the temperature of the warmer houses in the morning will be found much too low. I consider a check in early spring is very injurious to East Indian Orchids. *C. Woolford, Downside, Leatherhead.*

Scotland.

SCOTTISH HORTICULTURAL ASSOCIATION.

The ordinary monthly meeting of this Association was held on the 1st inst. in the rooms, 5, St. Andrew Square, Edinburgh, Mr. Alex. Milne, President, in the chair. The ordinary business of the meeting having been transacted, the Chairman announced that neither of the two papers set down in the syllabus for that night could be read, owing to illness in the case of the author of one paper, and the non-appearance of the other from causes unexplained. The report of the Chrysanthemum show held under the auspices of the Association on the 7th and 8th December last, was read by Mr. Alex. McKenzie, Treasurer, who, in his remarks, commented gratefully on the enthusiastic support he and all members of the Council had received from growers and lovers of the Chrysanthemum generally in the neighbourhood of Edinbugh, which had enabled them in the space of five or six weeks to organise and carry out successfully the best show of the kind that has yet been held in Edinburgh. The financial result, in view of the impromptu character of the undertaking was very satisfactory—cash received being £59 19*s.* 6*d.*, and disbursements £58 3*s.* 9*d.* On the motion of Mr. Dunn, seconded by Mr. A. D. McKenzie, the report was unanimously adopted.

The President, on behalf of the Council, stated that they had resolved, subject to the approval of that meeting, to issue a circular immediately, announcing to all concerned their intention to hold a Chrysanthemum show some time in November next. Several members, while cordially approving of the suggestion of the Council, objected to the funds of the Association being involved in any way in connection with the proposed show. The Treasurer gave an assurance that the Council were fully alive to the importance of that point, and would do nothing to involve the Association financially in the affairs of the show. Mr. R. Munro, Secretary, explained that the view of the Council was not to identify the Association permanently with the fostering of the evident desire of gardeners and the public to have an annual Chrysanthemum show in Edinburgh. That, he considered, was not a function of the Association, but of the Caledonian Horticultural Society, and all the Council intended to do at present was to hold another show tentatively, in the hope that that Society would eventually take the matter up. The meeting then unanimously approved of the action of the Council in the matter.

There were exhibited by Messrs. Laird & Sons twenty-four trusses of Chrysanthemum blooms in admirable condition, which excited considerable and favourable comment. The most conspicuous among the varieties were Elaine, Fleur de Marie, Ethel, Meg Merrilies, Rosa Bonheur, and Jonathan. *W. S.*

FLORA OF THE AFGHAN BOUNDARY.

Brigade-Surgeon J. E. T. Aitchison laid an important communication on this subject before the Linnean Society on the 3d inst. He collected somewhere about 10,000 specimens, and about 800 species, whereof 100 are probably new to science. Referring to the Heri-rud Valley and the Badglais district, he stated:—With the existing climatic conditions the result is that, except under the ameliorating influence of a river, cultivation under an altitude of 3500 feet is impossible without the aid of irrigation; and until the dew-line is gained Afghanistan is a land totally devoid of trees or even shrubs. But as soon as this point is reached, Pistacia vera, Juniperus excelsa, and a Lonicera appear as forest trees, and Wheat and Barley no longer need irrigation. Dr. Aitchison's collections do not quite represent what is generally recognised as the Oriental flora, being chiefly comprised of North Persian and Mediterranean, with a very few South Persian and Arabian forms, augmented by Central Asian and Siberian types, a few Western Himalayan or Tibetan, and a very limited number from the Punjab and Scinde regions. The purely local flora comprises in all probability one-sixth of the whole collection. The tropical zone spoken of by Hooker and Thomson as skirting the Afghan region does not extend to the north-west, owing to the excessive fall in the winter temperature and the shortened summer, a conclusive proof of which is the absence of the Date Palm. Out of 75 natural orders, Compositæ and Leguminosæ greatly preponderate over the others, as might have been expected, the former containing 81 and the latter 80 species respectively. Dr. Aitchison had little opportunity afforded him for investigating the alpine flora of the country, as he was seldom able to collect in localities above 5000 feet in altitude; above this height in exposed positions he found that trees and shrubs had disappeared.

There are no indigenous trees in the Heri-rud valley except on the islands and low lands of the river, where in some instances dense forests of Populus euphratica occur, with several larger Tamarisks, T. tetragyna, T. tetrandra, and others, and Lycium barbarum, remarkable in early spring for its broad green foliage. Cultivation, as already stated, can only be carried out with the aid of irrigation, hence the villages and fields are situated in the vicinity of the river, unless as at Ghorian, which is at some distance, and to which great irrigation channels have been led. In the Heri-rud, as in the Harut, valley the orchards, are surrounded by high walls, a row of Mulberry trees running round the inner side, which are grown for the feeding of silkworms.

The other orchard trees are Apricots, Plums, Apples, Cherries, Quinces, Jujubes, Elæagnus, and Vines. The last are either permitted to trail on the trees in the orchard, or the soil, which is removed from deep trenches, is placed in the form of a sloping wall, with a northern exposure; in these trenches the Vines are planted, and on the sloping wall they are allowed either directly to trail, or a latticework is placed on the slope to keep the Vine from coming into contact with the ground. Occasionally Plums, Peaches, Almonds, Pomegranates, and Figs in the better class of orchards are grown. In these orchards it is very common to see both yellow and red Roses—the latter, Rosa damascena, cultivated for the distillation of Rose-water, and Rubia tinctorum for its roots as a dye-stuff; and usually under the trees Medicago and Trigonella are cultivated for fodder.

During two or three months of the hot weather the natives seem to live entirely upon Melons, with a little bread, and they contain so much saccharine matter that in Herat a syrup or sugar is extracted from them. Ordinary Melons are cultivated, but in much less quantity than the Water-Melon, and mixed with them a great variety of Pumpkins and other Cucurbitaceæ. In the Melon fields it is curious to see either sprinkled thinly through them, or growing in single lines along the outer margin of the field, the Castor-oil plant, cultivated, as it was in olden times, for its oil for burning, the inhabitants being still ignorant of its uses as a medicine,

As garden crops numerous vegetables are grown, of all which the Afghans are extremely fond, and some of these are excellent in quality. Even in England one scarcely expects to see finer Beetroot, Carrots, Turnips, or Cabbages than are grown here, besides Radishes, Tomatos, and Chillies, which are all fairly good, with numerous pot-herbs. Requiring more care than ordinary field crops, there are also grown opium, Tobacco, and some oil seeds. The field cultivation consists primarily of Wheat, which is fairly good, but in some localities it is overgrown with Rye, which is an indigenous weed; Barley of two kinds, the finer, Hordeum hexastichon, considered fit for human food, and this is said to take a month longer to ripen than the other.

The cultivated trees in the vicinity of villages and in orchards are an Ash, an Elm, the Lombardy Poplar, Pinus halepensis, and several large Willows, and rarely the Oriental Plane. As an introduced weed near dwellings Dr. Aitchison saw at Khusan Datura alba. Of Cannabis sativa he never saw a single plant, except a little cultivated in Khorasan. The weeds of field cultivation were Prosopis, Capparis, Rosa berberifolia, amongst growing Wheat only, and in some instances outnumbering the Wheat crop. Avena fatua, Adonis æstivalis, which was a much more luxuriant plant than when it grew in the adjoining plains. Isatis Boissieriana, Neslia, Sisymbrium, Arenaria holosteoides, Centaurea depressa, Cnicus, Anchusa italica, a splendid herb when in full blossom, having superb blue flowers; Orobanche ægyptiaca in many localities colouring the Melon and Tobacco fields with its bright purple flowers. In a few places he met with Cynomorium coccineum, a blood-red species of the Balanophoreæ, which altogether captivated his Indian followers, who collected portions

to take home for purposes of medicine, and Reseda, Saponaria, Carduus, besides a very handsome yellow Centaurea, which we have not yet identified. At Zindijan, one of the few Afghan villages which Dr. Aitchison visited, there was a considerable amount of cultivation, which, however, was much deteriorated by a continual deposit of sand blown across the river from the low hills on its right bank. To such an extent did this sand accumulate that portions of the village have been already submerged, and great drifts have formed on the weather side of all the walls. Where there was much of this sand spread over the level ground the turf consisted solely of Plantago maritima.

Dr. Aitchison mentioned several plants from which drugs are extracted, such as Galbanum, Ammoniacum, &c., and his paper contained a full technical list of all the plants collected, with descriptions of the new species.

SOCIETIES.

ROYAL HORTICULTURAL.

This meeting was held on Tuesday, February 8, in the cramped quarters of a crush-room in the Albert Hall. A considerable display was made by various nurserymen with Primula sinensis, forced Narcissus, Freezia refracta, Hellebores in variety, Chionodoxa Luciliæ, and some few diverse early flowering hardy subjects. Some rare and choice species of Orchids gave a welcome additional interest to a display, the preponderating part of which could be regarded as only of minor interest.

The Fruit Committee had but little on which to employ its time, some few dishes of seedling Apples being the only item.

Floral Committee.

Present: G. F. Wilson, Esq., in the chair; and Messrs. W. Wilks, M. T. Masters, G. Maw, H. Bennett, A. Perry, J. Walker, B. Wynne, R. Dean, W. Holmes, H. Herbst, A. F. Lendy, J. Fraser, C. Noble, J. Dominy, H. M. Pollett, C. Pilcher, G. Paul, T. Baines, G. Duffield, J. O'Brien, H. Ballantine, H. Turner, E. Hill, J. Hudson, and W. H. Low.

A group of Orchids came from the nursery of Mr. W. Bull, Chelsea, consisting of varieties of Cattleya Trianæ, viz.:—Vesta, a pale form, of fair size and substance, the lip a slightly deeper tinge of rose than the rest of the flower; Rosalind, also with pale pink sepals and petals, lip purple and rose margined; Carnea, a light purplish-rose coloured bloom, the well-frilled lip of a deeper tint, and the yellow stain peculiar to the section of a darker shade than in the preceding varieties. A fine variety of Lycaste Skinneri alba was shown, the colour being quite pure; Odontoglossum maculatum, handsomely spotted; O. Rossi majus, a very fine-flowered piece; Cypripedium Haynaldi, the waxy dark purple and green C. vernixium, C. callosum, C. Argus, Oncidium nubigenum, the narrow acute sepals and petals spotted with pale brown, and the lip, the most imposing part of the flower, white. There were two species of Dendrobium speciosum var. Hilli, with a few blooms; and D. amethystoglossa marmorata, carrying a densely set spike of purple tipped and spotted white flowers.

A collection of cut flowers of various species of Odontoglossum were sent by MM. Masurel Brothers, Ghent, amongst them being a fine handsome example of O. Wilckeanum atropurpureum, the brown parts of the flower distinct and large, and of a peculiar velvety appearance; O. Wilckeanum sulphureum and O. cuspidatum were notable flowers.

The Duke of Marlborough, Blenheim (gr., Mr. Bethel), showed the admired Lælia anceps Stella.

R. J. Measures, Esq., Cambridge House, Camberwell (gr., Mr. Simpkins), showed Odontoglossum maculatum Donianum, a flower of golden-yellow, with red-brown spots at the base of the petals; sepals long, and brown in colour, and lip spotted with great regularity. The plant carried nine spikes of flower. Several species and varieties of Cypripediums were observed, as C. Richardii, yellow and red-purple, with dorsal petal edged, as so many are, with white; C. Sallieri villosum × insigne; C. insigne grandis, C. Chloroneurum venustum × villosum.

H. M. Pollett, Esq., Bickley (gr., Mr. Parkes), exhibited Odontoglossum crispum leopardinum, a beautifully marked flower, borne on a large spike; the rich chocolate-brown spottings are disposed with great regularity over the white ground of almost all parts of the flower.

From the newest centre of Orchidic good things—Studley House, Shepherd's Bush, F. G. Tautz, Esq., came Cypripedium Boxalli atratum—a healthy well-grown example, a flower from which together with a description, will be found on p. 210 of this issue.

F. A. Philbrick, Esq. (gr., Mr. H. Heimes), Oldfield, Bickley, was the exhibitor of Phalænopsis Casta—a plant carrying a spray of three open flowers and three buds; P. Stuartiana, a fine plant with thirteen flowers on the solitary spike. The beautiful flowers were well developed, and of immaculate colour. The curious Saccolabium bellinum, bearing one short spike on an established plant.

Another rare and unique plant, Pachystoma Thomsoni, came from W. Vanner, Esq., Camden Wood, Chislehurst (gr., Mr. Robins). The intense purplish-crimson narrow-pointed lip, that seems out of proportion to the sepals and petals, constitutes a great contrast with the white of those. The plant is a weak one, and bore only one spike of two or three blooms. A specimen of Dendrobium Vannerianum came from the same gardens.

Mr. Allen, gr. to Lord Suffield, Gunton Park, Suffolk, showed two hampers of well-bloomed plants of Violets, Marie Louise, Comte de Brazza, and Parma, and received a Cultural Commendation.

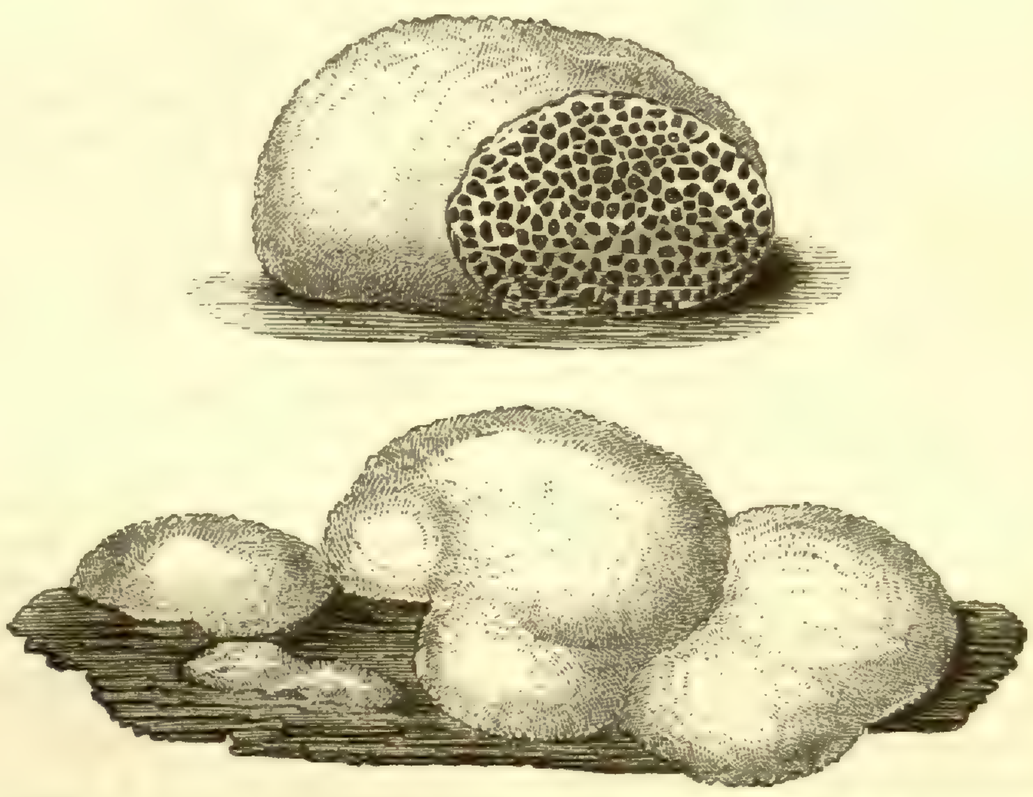


Fig. 53.—Æthalium vaporarium: a fungus destructive to plants in propagating houses and pine stoves. (see p. 223.)

A large number of Primula sinensis (500, in nineteen varieties) were sent by Messrs. James Carter & Co., High Holborn. The plants were of a uniform dwarf habit, and well bloomed, but owing to having been pushed on in time for the meeting, the foliage and flowers showed a trifle of flabbiness and want of substance. The best were Fern-leaf White, Prince of Wales, cerise and semi-double; Fern-leaf Vermilion, a good colour; Holborn White Improved, Double Carmine, with centre florets; Pearl, same colour as is implied by the name; Fern-leaf Red, a flower of large size, well frilled at the edge; Fern-leaf Elaine, an excellent white; Holborn Blue, a flower of the colour of Marie Louise Violet; and Magenta, a compact neat grower.

Messrs. H. Cannell & Sons, Swanley, showed a group of their robust Fern-leaf Primula White Perfection, previously certificated. Flowers and foliage are both massive, making the plant of much value in decorations.

Messrs. J. Veitch & Sons, Chelsea, showed their Primula Snowflake, a flower less frilled than some others, but carrying a large head well poised on a stout stalk. Some cut blooms of Cyclamen giganteum, backed up with the leaf of the plant to serve as a buttonhole bouquet, came from the same nurseries.

Mr. B. S. Williams, Victoria Nurseries, Upper Holloway, contributed Dendrobium Fytchianum roseum, full of flower: the strikingly handsome Lycaste plana Measuresiana, and Primula sinensis Magenta Queen, a very good variety.

From Mr. J. James, Woodside, Slough, came three new varieties of Primula sinensis, one of which—Brightness, a semi-double, of a crimson and lilac colour—found recognition from the committee.

Messrs. Paul & Son, Cheshunt, brought Iris histrio, in flower, as lifted from the open border, and which had grown without protection.

Mr. Darbyshire, gr. to A. Balstone, Esq., Timperley, Manchester, exhibited a flower-stalk and pseudobulb of Calanthe nivalis, of surpassing size.

Collections of Narcissi, Lachenalia pendula, and Freesias, were sent by Messrs. Collins Bros. & Gabriel, 39, Waterloo Road; P. Barr & Sons, King Street, Covent Garden; and T. Ware, Hale Farm, Tottenham. The last-named exhibitor had much the more varied collection, excellently bloomed Helleborus niger majus, Iris reticulata purpurea, Crocus nivalis, Ophrys tenthredinifera, O. fusca, and Aceras longibracteata—the three last-named species of terrestrial Orchids being healthy and floriferous.

Ireland was likewise represented by Mr. B. Hartland, Cork, who sent the early Daffodil Ard-Righ.

First-class Certificates.

For Lycaste plana Measuresiana, shown by Mr. B. S. Williams.

For Primula sinensis Snowflake, shown by Messrs. J. Veitch & Sons.

For Primula sinensis Brightness, shown by Mr. J. James.

For Primula sinensis Purity, shown by Mr. J. James.

For Odontoglossum leopardinum, shown by H. M. Pollett, Esq.

For Pachystoma Thomsoni, shown by W. Vanner, Esq.

For Primula sinensis White Perfection, shown by Messrs. Cannell & Sons.

Medals.

Silver-gilt Banksian to Mr. T. S. Ware, for group of Daffodils and hardy plants.

Silver-gilt Banksian to Mr. W. Bull, for group of Orchids.

Silver Banksian to Messrs. Collins Bros. & Gabriel, for collection of Daffodils.

Silver Banksian to Messrs. J. Carter & Co., for collection of Primulas.

Silver Banksian to Messrs. P. Barr & Son, for collection of Daffodils.

Fruit Committee.

Present: T. Francis Rivers, Esq., in the chair; and Messrs. G. Bunyard, J. Smith, W. Warren, W. Denning, J. Bennett, G. Norman, A. H. Pearson, J. Lee, S. Ford, C. Ross, T. J. Saltmarsh, T. B. Heywood, J. Fitt, H. J. Veitch, J. Woodbridge, R. D. Blackmore, R. Hogg, P. Crowley.

The Troughton Cucumber, a symmetrical fruit, 15 inches in length, was shown by Mr. Troughton, nurseryman, 4, Church Street, Preston.

Mr. W. Taylor, Osborne Nursery, Hampton, exhibited fruit trees in pots.

Messrs. Saltmarsh & Son, Chelmsford, showed a seedling Apple, Lord of the Manor, as did Mr. C. Ross, Welford Park, a fine-looking fruit, well kept, of Lady Alice Eyre.

The Permanent Enamel Company, Pelly Road, Plaistow, Essex, exhibited examples of their various sized labels, adapted for all the varied uses of the garden.

THE WEATHER.

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING FEBRUARY 19. (AVERAGE OF THIRTY-THREE YEARS.)

February 14	39°.0	February 18	39°.2
„ 15	39°.0	„ 19	39°.3
„ 16	39°.1	„ 20	39°.4
„ 17	39°.1	Mean for the week ...	39°.2

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 42° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature.				
		Accumulated.			
	Above or below the Mean for the week ending Feb. 7.	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 4, 1887.	Below 42° difference from Mean since Jan. 4, 1887.
Principal Wheat-producing Districts.		Day-deg.	Day-deg.	Day-deg.	Day-deg.
0. Scotland, N. ...	0 (aver).	4	33	+ 13	— 18
1. Scotland, E. ...	2 above	10	35	+ 25	— 15
2. England, N.E. ...	2 above	14	30	+ 20	+ 1
3. England, E. ...	3 above	18	29	+ 1	+ 24
4. Midland Cos. ...	2 above	17	32	+ 11	+ 18
5. England, S. ...	2 above	25	14	+ 13	— 3
Principal Grazing, &c., Districts.					
6. Scotland, W. ...	1 above	8	22	+ 18	— 15
7. England, N.W. ...	0 (aver.)	11	27	+ 8	+ 5
8. England, S.W. ...	2 above	25	4	0	— 13
9. Ireland, N. ...	1 above	16	27	+ 21	— 7
10. Ireland, S. ...	1 above	31	10	+ 21	— 12
— Channel Islands	2 above	29	0	— 6	— 11

Districts.	Rainfall.			Bright Sunshine.	
	More or less than the Mean for the Week.	No. of Rainy Days since Jan. 4, 1887.	Total Fall since Jan. 4, 1887.	Percentage of possible duration for the Week.	Percentage of possible Duration since Jan. 4, 1887.
Principal Wheat-producing Districts.	Tenths of Inch.		Ins.		
0. Scotland, N. ...	7 more	26	6.9	31	13
1. Scotland, E. ...	2 more	19	3.1	?	?
2. England, N.E. ...	2 less	17	1.8	33	22
3. England, E. ...	1 less	15	1.7	31	22
4. Midland Cos. ...	2 less	16	2.3	28	20
5. England, S. ...	3 less	15	2.1	25	18
Principal Grazing, &c., Districts.					
6. Scotland, W. ...	1 more	22	5.9	24	16
7. England, N.W. ...	3 less	19	3.0	27	18
8. England, S.W. ...	7 less	20	3.1	28	20
9. Ireland, N. ...	6 more	20	4.0	34	20
10. Ireland, S. ...	0 (aver).	21	4.8	30	25
— Channel Islands	5 less	20	2.8	39	38

THE PAST WEEK.

The following summary record of the weather for the week ending February 7, is furnished from the Meteorological Office:—

"The *weather* has continued rather unsettled in the extreme W. and N., but over England the conditions have remained generally fair, although in several places mist or fog has occasionally prevailed.

"*Temperature* has continued above the mean in nearly all districts, the excess varying between 1° and 3°. The highest of the maxima, which were registered on irregular dates, ranged from 50° or 51° in Scotland to between 54° and 57° in England and Ireland. The lowest of the minima, which were generally recorded either on the 6th or 7th, ranged from 22° in 'Scotland E.' and 'England N.E.' to 28° in 'England S.W.' and 36° in the 'Channel Islands.'

"The *Rainfall* has been more than the mean in Scotland and the N. of Ireland, but less over England and at most of the S. Irish stations.

"*Bright Sunshine* has been more prevalent in most places than it was last week, the percentages of the possible amount of duration ranging from 24 in 'Scotland W.' to 39 in the 'Channel Islands.'"

Obituary.

MRS. CATHERINE (KATINKA) STEVENS.—We regret to announce the death of Mrs. Stevens, in her 49th year. She was widow of Zadok Stevens, whose early death we were called on to chronicle but a short time since. At the inquest, which was held at the Trentham Hotel, it appeared that the unfortunate woman had been under the care of the local doctor for neuralgic pains, for which he prescribed medicine and an embrocation of Belladonna and soap liniment. The doctor had warned Mrs. Stevens that the lotion was poisonous. Early on Friday morning, February 4, Mrs. Stevens called up her daughter to give her her lotion, and shortly afterwards she called for a dose of medicine. The daughter poured her out a tablespoonful, and her mother then said she had given her the wrong medicine. After this Mrs. Stevens was taken ill. Two doctors were called in, and the usual remedies tried, which, however, proved unavailing, death supervening in the afternoon of Friday. A verdict of "Death from misadventure" was returned.

ENQUIRIES.

"*He that questioneth much shall learn much.*"—Bacon.

Mealy-bug, Scale, &c.—Mr. J. W. Douglas (8, Beaufort Gardens, Lewisham, S.E.), who is at present engaged in the investigation of Coccidæ (scale-insects and mealy-bugs) affecting plants grown in Britain, would feel obliged by any information respecting any of the species, and also by the receipt of examples. At this time he specially wishes to know of any authentic instance of the occurrence of Diaspis rosæ, Bouché, reputed to be British. The scale is small and white, and appears on the wood of Rose trees in the semblance of mouldiness. It is common in France, the Rhine provinces of Germany, and in the United States of America.

NOTICES TO CORRESPONDENTS.

TO THE TRADE.—Members of the Trade will oblige by sending notes of matters of Trade interest, Cultural or Commercial.

Intelligent Readers, do please Note.—*Letters relating to* Advertisements, *or to the supply of the Paper, should be addressed to the* Publisher, *and not to the Editor.*

*** All communications intended for publication should be addressed to the "*Editor.*" Such communications should be *written on one side only of the paper*, and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Photographs, &c.—The Editor will feel greatly obliged to any reader who will forward photographs or drawings of gardens, plants, or other subjects of interest.

Books: *G. P.* Henfrey's *Elementary Course*, 4th edition. (Van Voorst).

Bulbs and Lily of the Valley: *T. K.* The bulbs and roots will be examined and reported on shortly.

Double-flowered Arum: *R. B.* A not uncommon result of much vigour in the plant.

Eucharis Mite: *Wicklow.* There has been much correspondence in our columns recently on this subject, but unfortunately without any one having yet discovered any means by which the insect can be got rid of.

Fowls' Manure for Garden Use: *J. G. J.* If you have a considerable quantity place it in a heap in an open shed, and turn it over occasionally to prevent heating and to dry it somewhat. After having got it dry enough to be sifted, pass it through a ¼-inch sieve, when it will be fit to give as a very light top-dressing to growing crops. These dressings can be given (if possible, in showery weather) at intervals of a fortnight or three weeks; for long-standing crops choose the longer interval. For stimulating plants in pots a 3-inch potful to 3 gallons of water will be sufficient. Stir well, and allow the water to clear before decanting it for use; or place a larger quantity in a sack with some soot added, placing the sack in a cistern of water.

Fungus: *T. W.* The name of the fungus which you sent to us is Æthalium vaporarium, and which we illustrate at p. 222, fig. 53. It is an extremely rapid growing plant, and is best checked by having sulphur applied to it as soon as its appearance is noticed. It grows on tan.

Hellebores: *G. S.* sends a collection of these plants grown in the open air at Teignmouth, but unfortunately they arrived in very bad condition.

Insects: *L. B.* The insects infesting the roots of Adiantum cuneatum are subterranean aphides allied to the genus Rhizaphis, but probably nondescript. Fresh specimens in a moist condition, or in alcohol, are required.

Membership of the Royal Horticultural Society: *Titterington.* A subscription of 2 or of 4 guineas per annum, or a donation of 40 guineas, entitles any one accepted by the Fellows of the Society to attach the letters F.R.H.S. to his or her name.

Names of Fruit: *W. & J. B.* The Apple is too much bruised for us to identify it.—*Hants.* 1, Beurré Rance; 2, Beurré Clairgeau; 3, not recognised—exceptionally good quality for the season; 4, Ne Plus Meuris.

Names of Plants: *Old Subscriber.* 1, Pittospermum Colensoi; 2, cannot determine without flowers; certainly not a Cistus if the flowers are blue; 3, cannot ascertain from leaves only; 4, Clethra arborea.—*G. Carrol (for F. W. B.)* Ficus heterophylla, a common and very variable Indian species widely spread in India. All the receptacles examined contained female flowers.—*Mrs. Nicholson, Firenze.* The wild form of the common Marigold. —*Charles Noble.* Clematis glycinoides, Australia. —*A. Bott.* Acacia Riceana.—*W. H. M.* Pinus Pumilio, Central Europe.

Notice to Quit: *J. R. L.* A month's notice or a month's salary, in your case, there being no misconduct on your part.

Odontoglossum Rossi: *C. J. W.* An ordinary form, not majus.

Orchids: *Peter Walker.* Odontoglossum Cervantesi, Cypripedium villosum, Cattleya Percivaliana, all excellent flowers; Masdevallia chimæra is very fine, and has a close resemblance to Wallisii; Cattleya chocoensis alba and C. Trianæ are pretty pale forms.

Phaius and Nerines not Blooming: *H. F.* You do not rest your plants by the treatment given. Give them a rest in a cool-house of say 50°—55° night temperature, and but little water until there are signs of a renewal of growth, when repotting can take place, and a higher range of warmth be adopted. Your bulbs of Nerine will not flower if kept in warm growing houses all the year. Rest them in a cool dry place after the leaves are fully grown, and withhold water as the foliage dies away until none is needed.

Potato Bresee's Prolific Diseased: *G. M. K.* The tubers shall be investigated.

Rose Maréchal Niel: *A. Z.* As your plants have had a top-dressing of Clay's manure on being planted out, and show vigour, applications of the same manure, or Beeson's, at fortnightly intervals and in moderate quantities, will aid in developing strong bloom. The use of manures in large quantities, or at too frequent intervals, may result in a growth of wood only, so that considerable judgment in their use is required.

Twin-Flowered Lycaste Skinneri: *E. M.* It is not an unusual occurrence.

CATALOGUES RECEIVED.

Samuel Yates, 16 and 18, Old Millgate, Manchester—Vegetable and Flower Seeds.

W. Thompson, 34 and 36, Tavern Street, Ipswich—Flower Seeds.

Edmondson Brothers, 10, Dame Street, Dublin—Vegetable and Flower Seeds.

George Stamp, Bishop's Teignton, Teignmouth—Herbaceous and Greenhouse Plants.

James Yates, 29, Little Underbank, Stockport—Vegetable and Flower Seeds.

Pillinger & Co., Chepstow—Vegetable and Flower Seeds.

Robert Owen, Castle Hill, Maidenhead — Tuberous Begonias.

Robertson Munro, 33, St. Andrew Square, Edinburgh, N.B.—Garden Seeds.

R. H. Poynter, Castle Green, Taunton—Seed List.

Communications Received.—J. W. (many thanks).—W. W.—Mrs. Davidson.—F. W. B.—J. V. V., Brussels.—T. C., Sevenoaks, will oblige by sending further specimens of his diseased Carnations in a little damp moss.—G. H. (letter will follow).—Udo Dammer, Berlin (letter will follow).—W. Bridges, Croydon (send full address, not necessarily for publication).—W. J. M.—D.—W. C.—E, Beckett.—G. A.—J. A,—J. F. W., British Guiana.—J. W.—H. A. P.—R. Gilbert (sprouts very fine).—A. B.—W. W. E.—Edmund Touks.—H. E.—W. L.—A. H.—D.—Hogg & Wood.—N. W.—J. R. J.—Herbert Reeves (Tree Pæony, with many thanks).—R. Boniface (next week).—D. O.—T. Keetley—E. W. J.—W. P. H.

DIED, on December 24, 1886, at Clunes, Melbourne, Australia, where he had gone for the benefit of his health, Archibald Sinclair, aged forty-nine, for many years with Messrs. James Veitch & Sons, The Royal Exotic Nursery, Chelsea, and formerly at Patterdale Hall, Westmoreland.

MARKETS.

COVENT GARDEN, February 10.

The subjoined reports are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list weekly, and are responsible for the quotations. It must be remembered that these quotations are averages for the week preceding the date of our report. The prices fluctuate, not only from day to day, but often severol times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the prices at any particular date, still less can they be taken as guides to the price in the coming week. Ed.]

Business still keeps quiet, with supplies much the same. Good samples of Grapes coming shorter, at advanced rates. *James Webber, Wholesale Apple Market.*

Fruit.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Apple, ½-sieve	1 6– 5 0	Lemons, per case	12 0–21 0
— Nova Scotia, brl.	8 0–12 0	Pears, per dozen	2 0– 4 0
Grapes, per lb.	2 0– 4 0	Pine-apples, Eng., lb.	1 0– 1 6
Kent Cobs, 100 lb.	65 0 70 0	— St. Michael. each	1 6– 6 0

Vegetables—Average Retail Prices.

	s. d. s. d.		s. d. s. d.
Artichokes, per doz.	6 0– ...	Lettuce, per dozen	1 0– 1 6
Asparagus, French, per bundle	21 0– ...	Mushrooms, punnet	1 6– 2 6
— English, per 100	12 0– ...	Mustard and Cress, punnet	0 4– ...
Beans, Kidney, lb.	1 6– ...	Onions, per bushel	4 0– ...
Beet, red, per dozen	1 0– 2 0	Parsley, dozen bunch	4 0– ...
Brussels Sprouts, lb.	0 4– ...	Potatos, per cwt.	4 0– 5 0
Carrots, per bunch	0 6– ...	,, kidney, per cwt.	4 0– 5 0
Cauliflowers, per doz.	3 0– ...	Rhubarb, per bundle	0 6– ...
Celery, per bundle	1 6– 2 0	Seakale, per punnet	2 0– ...
Cucumbers, each	0 6– 1 0	Shallots, per lb.	0 3– ...
Endive, per dozen	1 0– 2 0	Spinach, per bushel	4 0– ...
Green Mint, bunch	1 0– ...	Sprue, bundle	1 0– ...
Herbs, per bunch	0 4– ...	Tomatos, pet lb.	1 0– 1 6
Leeks, per bunch	0 3– ...	Turnips, bunch	0 4– ...

Potatos.—Markets very heavy, at the following prices:—Regents, 80s. to 100s.; Magnums, 70s. to 110s. per ton.

Plants in Pots.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz.	6 0–18 0	Ficus elastica, each	1 6– 7 0
Arum Lilies, dozen	18 0–24 0	Ferns, in variety, per dozen	4 0–18 0
Azaleas, per dozen	24 0–42 0	Foliage plants, various, each	2 0–10 0
Begonias, per dozen	6 0–12 0	Genista, per doz.	10 0–12 0
Bouvardias, doz.	9 0–12 0	Hyacinths, 12 pots	6 0– 9 0
Cineraria, per doz.	9 0–12 0	Lily-of-Val., 12 pots	12 0–24 0
Cyclamens, dozen	12 0–24 0	Marguerite Daisy, per dozen	6 0–12 0
Cyperus, per dozen	4 0–12 0	Myrtles, per dozen	6 0–12 0
Daffodils, 12 pots	9 0–10 0	Palms, in var., each	2 6–21 0
Dracæna terminalis, per dozen	30 0–60 0	Pelargoniums, scarlet, per doz.	6 0– 9 0
— viridis, per doz.	12 0–24 0	Primula sinensis, per dozen	4 0– 6 0
Epiphyllum, dozen	18 0–30 0	Solanums, per dozen	9 0–12 0
Erica hyemalis, per dozen	12 0–24 0	Spiræa, per dozen	12 0–24 0
— various, dozen	9 0–24 0	Tulips, 12 pots	6 0– 8 0
Euonymus, in var., per dozen	6 0–18 0		
Evergreens, in var., per dozen	6 0–24 0		

Cut Flowers.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Arum Lilies, 12 blms.	3 0– 5 0	Pelargoniums, 12 spr.	1 0– 1 6
Azaleas, 12 sprays	0 6– 1 0	— scarlet, 12 sprays	0 9– 1 0
Bouvardias, per bun.	0 6– 1 0	Poinsettias, per 12 sprays	4 0– 8 0
Camellias, 12 blooms	2 0– 4 0	Primulas, single, 12 bunches	4 0– 6 0
Carnations, 12 blms.	1 0– 3 0	— double, 12 sprays	1 0– 1 6
Cyclamen, 12 blooms	0 4– 0 9	Roses, Tea, per doz.	2 0– 4 0
Daffodils, 12 blooms	0 6– 1 6	— coloured, dozen.	3 0– 6 0
Eucharis, per dozen	3 0– 6 0	— red, French, doz.	1 6– 2 0
Gardenias. 12 blooms	12 0–30 0	— Saffrano, Fr. doz.	1 0– 1 6
Hellebore, or Christmas Roses, 12 bls.	0 4– 1 0	Tropæolums, 12 bun.	1 0– 2 0
Heliotrope, 12 spr.	0 6– 1 0	Tuberoses, 12 blms.	2 6– 4 0
Jasmine, white, bun.	0 6– 0 9	Violets, 12 bunches	1 6– 2 0
Lilies of the Valley, 12 sprays	0 9– 1 6	— Parme, French, per bunch	3 0– 4 6
Marguerites, per 12 bunches	3 0– 6 0	— Czar, Fr., bunch	1 6– 2 0
Mignonette, 12 bun.	3 0– 6 0		

CORN.

Averages.—The following is an official statement showing the average price of British corn, imperial measure, as received from the inspectors and officers of Excise, in the week ended February 5:—Wheat, 34*s.* 3*d.*; Barley, 26*s.* 7*d.*; Oats, 17*s.* 1*d.* For the corresponding week in 1886:—Wheat, 29*s.* 9*d.*; Barley, 29*s.* 3*d.*; Oats, 18*s.* 10*d.*

FRUIT AND VEGETABLES.

Columbia (East London): *Feb.* 9.—Good supplies of fruit and vegetables; fair demand. Quotations:—Apples, 6*s.* 6*d.* to 8*s.* per bushel; American ditto. 10*s.* 6*d.* to 16*s.* 6*d.* per barrel; Sprouting Brocoli, 1*s.* 6*d.* to 2*s.* per sieve; Brussels Sprouts, 2*s.* to 3*s.* do.; Savoys, 2*s.* to 6*s.* per tally; Greens, 1*s.* 6*d.* to 2*s.* 6*d.* per dozen bunches; Turnips, 2*s.* to 2*s.* 6*d.* do.; Carrots, 1*s.* 6*d.* to 2*s.* do.; Celery, 4*d.* to 8*d.* per bundle; Onions (English), 4*s.* 6*d.* to 5*s.* 6*d.* per cwt.; foreign do., 3*s.* to 4*s.* 3*d.* per bag. of 116 lb.; Carrots, 14*s.* to 20*s.* per ton; Mangolds, 12*s.* 6*d.* to 14*s.* do.

Stratford: *Feb.* 8.—Supplies and trade during the past week have been good:—Savoys, 3*s.* to 6*s.* per tally; Green, 1*s.* 6*d.* to 2*s.* per dozen bunches; Cauliflowers, 10*s.* to 12*s.* per case; Turnips, 1*s.* 6*d.* to 2*s.* 6*d.* per dozen bunches; ditto, 20*s.* to 30*s.* per ton; Carrots, household, 20*s.* to 30*s.* do.; ditto, cattle feeding, 18*s.* to 20*s.* do.; Parsnips, 5*d.* to 6*d.* per score; Mangolds, 11*s.* to 15*s.* per ton; Swedes, 12*s.* to 16*s.* do.; Onions, English, 4*s.* 6*d.* to 5*s.* 6*d.* per cwt.; ditto. Dutch, 3*s.* 6*d.* to 4*s.* 6*d.* per bag; Watercress, 6*d.* per dozen; Celery, 9*s.* to 10*s.* per dozen rolls.

POTATOS.

Borough and Spitalfields: *Feb.* 8.—There was a quiet trade at the following quotations:—Regents, 60*s.* to 100*s.*; Magnum Bonums, 70*s.* to 100*s.*; and Champions, 55*s.* to 90*s.* per ton.

Columbia (East London): *Feb.* 9.—Quotations:—York and Lincoln Magnums, 55*s.* to 70*s.*; do. Regents, 60*s.* to 70*s.*; do. Champions, 55*s.* to 70*s.*: Kent and Surrey Regents, 55*s.* to 75*s.*; do. Magnum Bonums, 55*s.* to 75*s.*; do. Champions, 50*s.* to 70*s.*; Cambridgeshire Regents, 60*s.* to 75*s.*; do. Magnums, 55*s.* to 85; do. Champions, 55*s.* to 70*s.*: Scotch Regents, 60*s.* to 90*s.*: do. Magnums, 60*s.* to 100*s*; do. Champions, 55*s.* to 80*s.* per ton.

Stratford: *Feb.* 8.—Quotations:—Magnums, 87*s.* to 100*s.*; Regents, 70*s.* to 90*s.*; Beauty of Hebron, 80*s.* to 100*s.* per ton.

HAY.

The following are the average of the prices obtained at the Metropolitan markets during the past week:—Clover, prime, 80*s.* to 100*s.*; do. inferior, 70*s.* to 84*s.*; hay, prime, 70*s.* to 90*s.*; do. inferior, 30*s.* to 77*s.*; and straw, 28*s.* to 42*s.* per load.

1887.

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WRENCH'S GIGANTIC RUNNER.

Pod perfectly straight, and of extraordinary length. Unrivalled for exhibition purposes. Tender and delicious.

Per Quart, 2*s.*

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WRENCH'S VARIEGATED KALE.

Extra selected. *Per Packet,* 1*s.*

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A perfect stock of this unique variety.

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WRENCH'S "KING of the MARKET."

The largest, most prolific, and most delicate flavoured of all.

Per Ounce, 1*s.*

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WRENCH'S NEW DWARF, "THE PIGMY."

The earliest and dwarfest variety in cultivation. Admirable for private gardens. *Per Packet,* 1*s.* 3*d.*

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WRENCH'S NEW IMPROVED HORN.

A very quick grower, and very massive in shape. Flesh very delicate and without core. *Per Ounce,* 1*s.*

WRENCH'S NEW MAIN CROP.

This splendid intermediate variety is somewhat longer than Nantes, and thicker at the shoulder, producing an enormous weight per acre.

Per Ounce, 1*s.*; *less by the Pound.*

LEEK—

THE LYON.

A regular prizetaker. *Per Ounce,* 1*s.* 6*d.*

PARSLEY—

WRENCH'S CHAMPION.

The finest stock in the world.

Per Ounce, 6*d.*

To be had Retail of all respectable Seedsmen throughout the world,

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LONDON BRIDGE, LONDON, E.C.

THE EARLIEST PEA IN THE WORLD.

Carters.

LIGHTNING PEA.

TEN DAYS EARLIER

than First and Best.

FOUR DAYS EARLIER

than Ringleader.

After exhaustive trial, and as the result of careful selection, we offer for the first time what we consider to be the **EARLIEST PEA IN THE WORLD**; and this opinion is fully confirmed by the testimony given below as the result of trials made by some of the best-known gardeners in the country.

"Carters' Lightning is very distinct and early. We gathered it ten days before Dickson's First and Best, sown at the same time."—Mr. T. RABONE, Head Gardener to the Right Hon. the Earl of Shrewsbury.

"Carters' Lightning Pea is the earliest Pea I have ever grown; it came in three or four days before Ringleader."—Mr. E. WILSON, Head Gardener to the Most Noble the Marquis of Hartington.

"Carters' Lightning Pea, sown two months after William I., came into use before it."—Mr. W. COLEMAN, Head Gardener to the Right Hon. Earl Somers.

Price, in sealed packets, 2s. 6d. per pint.

SEEDSMEN by Royal Warrants to H.M. the QUEEN and H.R.H. the PRINCE of WALES,

237/238 HIGH HOLBORN, LONDON.

BEGONIAS, 6 and 7 inches.

IT IS WELL KNOWN and acknowledged in both Singles and Doubles that our collection and display is superior to any in existence, and awarded the Royal Horticultural Society's GOLD MEDAL, and more First-class Certificates than all other firms put together. For Doubles—full and invaluable particulars, see ours, very much the best ILLUSTRATED CULTURAL and DESCRIPTIVE CATALOGUE ever issued, with remarkable testimonials, sent post-free.

SEEDS.—Single, 6 and 7 inches, 2s. 6d. per packet: our Doubles, producing enormous blooms, more like Pæonies, 3s. per packet.

ATRO-RUBRA NANA, the darkest and richest flowering plant extant for bedding decoration, 2s. 6d. per packet.

WINTER-FLOWERING, now blooming most brilliantly, mixed, 2s. 6d. per packet.

COME AND SEE OUR SEEDLINGS JUST UP.

"Rev. S. GANARD, *The Vicarage, Salford Priory, near Evesham. February* 1, 1887.

"The Begonia seed I had from you last season brought fine flowers, some blooms were very close on 6 inches across. Send another packet."

H. CANNELL & SONS,

SWANLEY, KENT.

HERBACEOUS AND ALPINE PLANTS.

CATALOGUE of 64 pages, containing full information as to Colour, Height, Situation, time of Flowering, &c., free on application.

A CAPITAL COLLECTION for ROCKS, STUMPS, and BORDERS, from 25s. per 100, or 4s. per dozen.

Most of the Plants being in Pots may be despatched at any time, or by Parcel Post when fit.

RICHARD SMITH & CO.,

NURSERYMEN AND SEED MERCHANTS,

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NOVELTIES

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PHLOX DRUMMONDI ALBA, double.

ASTER, "COMET" (New Class).—The shape of the flowers resembles very closely a large flowered Japanese Chrysanthemum; the petals being long and somewhat twisted. Well grown produce from 25 to 30 perfectly double flowers, measuring from 3½ to 4½ inches in diameter. The colour is a lovely delicate pink, bordered with white. Per packet, 1s. 6d.

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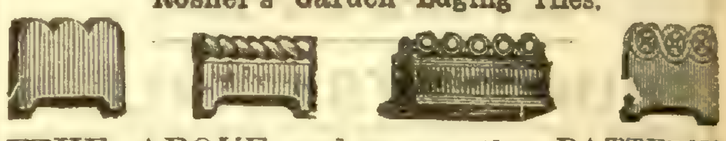

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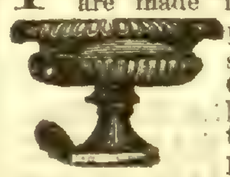

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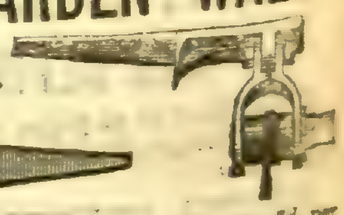

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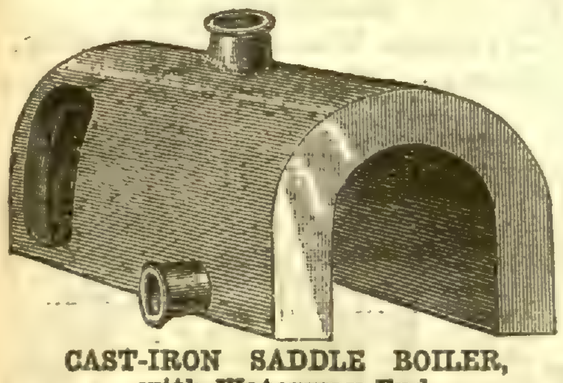

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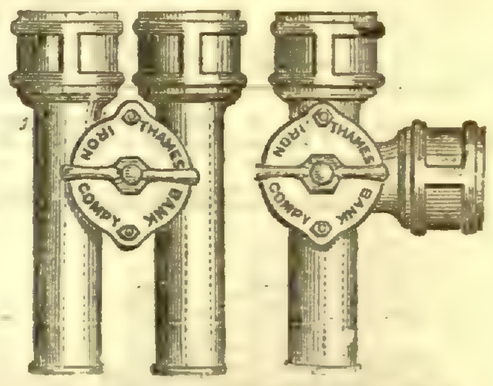

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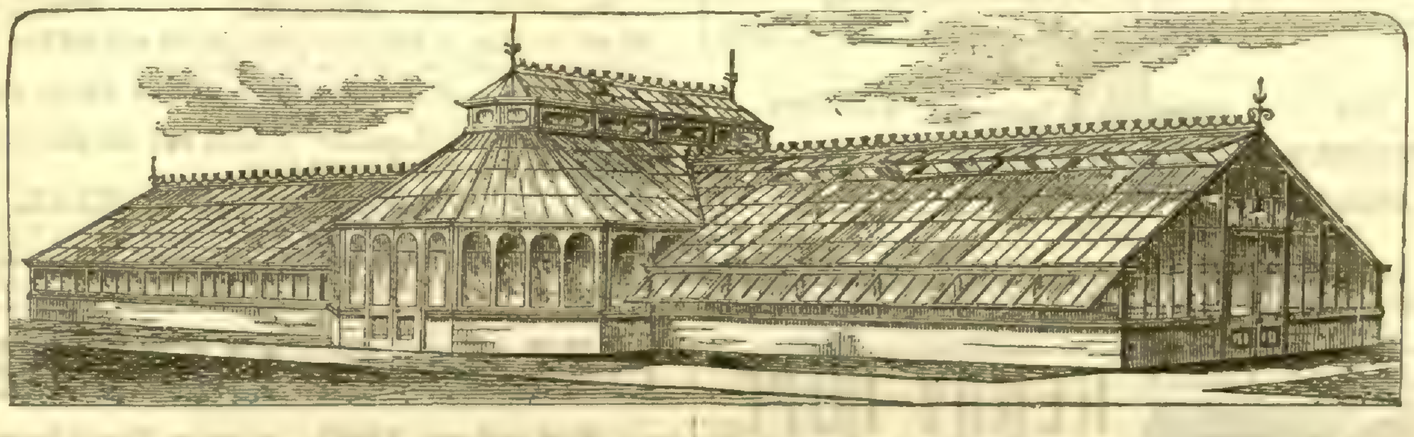

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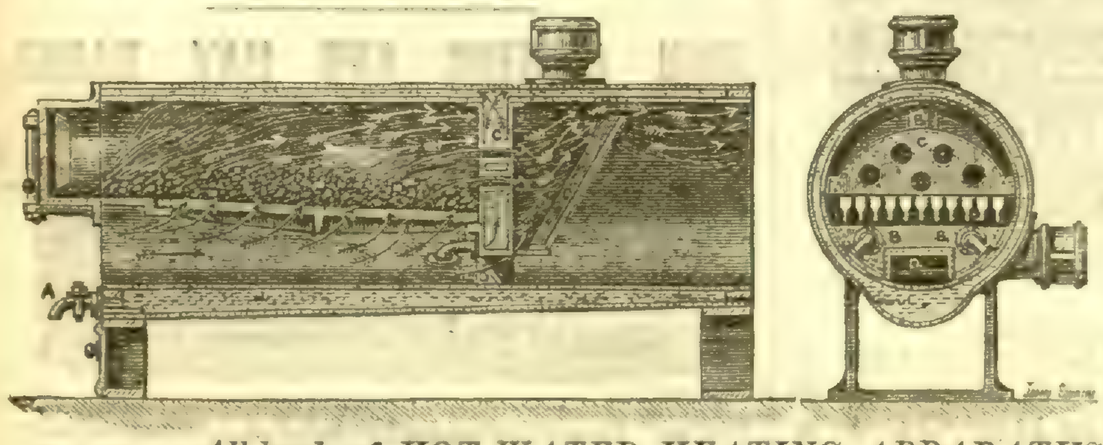

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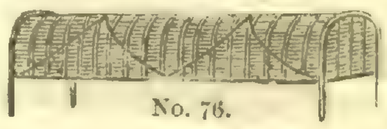

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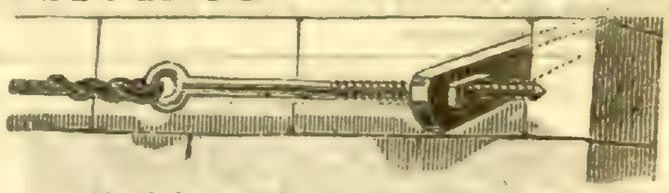

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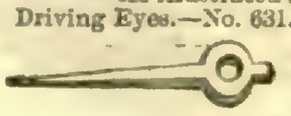

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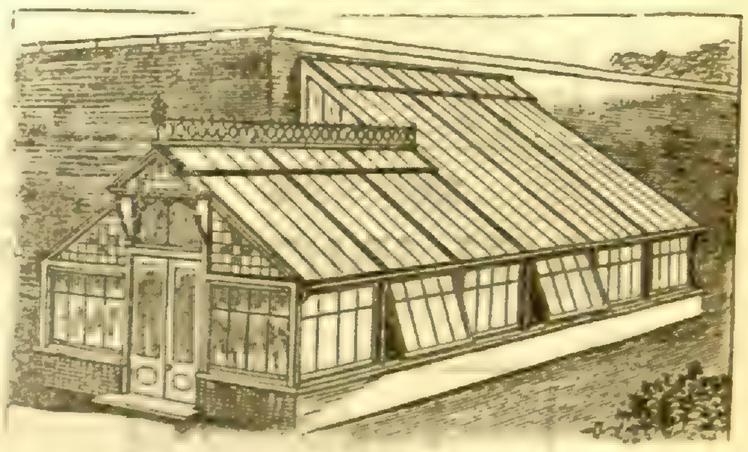

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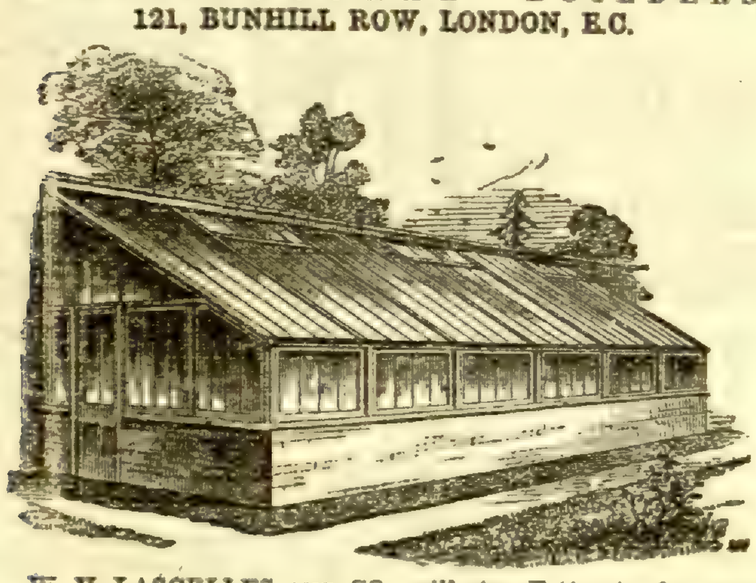

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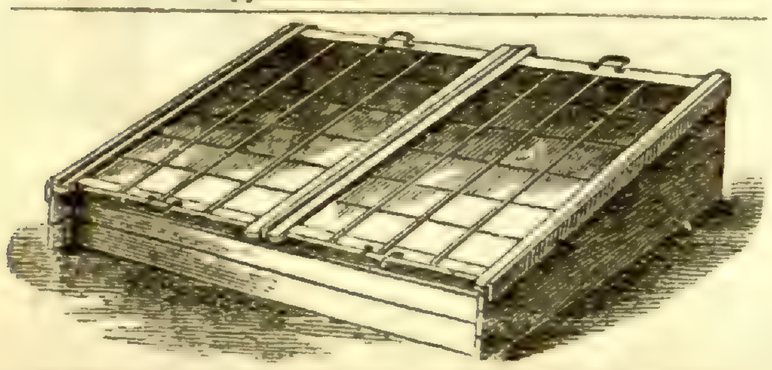

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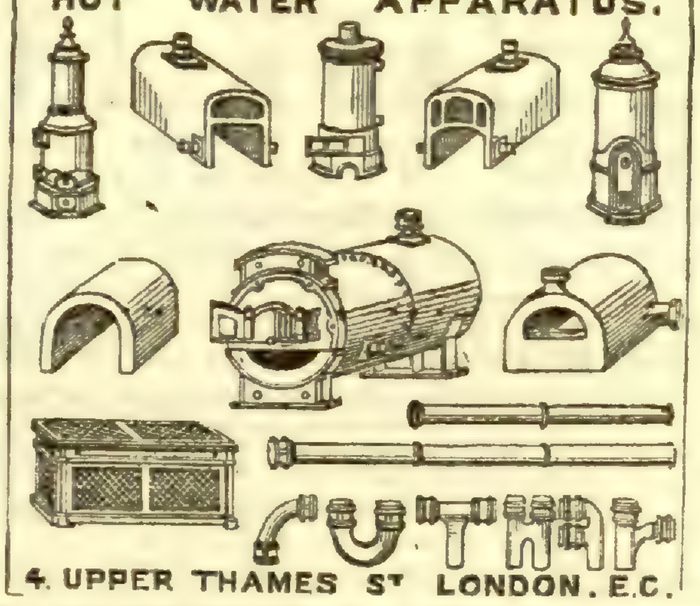

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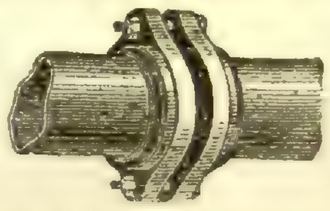

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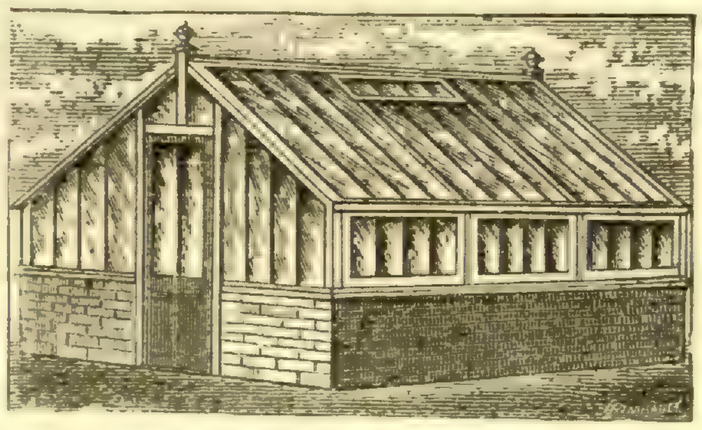

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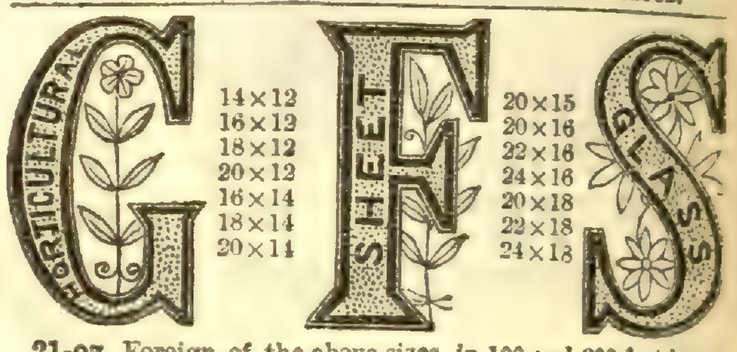

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To Noblemen and Gentlemen requiring Land Agents, STEWARDS, BAILIFFS, or GARDENERS.

JAMES CARTER AND CO. have at all times upon their Register reliable and competent MEN, several of whom are personally well known to Messrs. Carter. Enquiries should be made to 237 and 238, High Holborn, W.C.

RICHARD SMITH AND CO. beg to announce that they are constantly receiving applications from Gardeners, seeking situations, and that they will be able to supply any Lady or Gentleman with particulars &c.—St. John's Nurseries, Worcester.

PARTNERSHIP, MANAGER, or WORKING FOREMAN, or open to Purchase a Small Nursery and Florist Business (Clifton, Bath, or Weston-super-Mare preferred).—The advertiser, with twenty years' experience in the Nursery Trade, with a small capital, wishes to correspond with a Nurseryman.—J. A., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, London, W.C.

Gardeners, Under Gardeners, Bailiffs, &c.

WM. CUTBUSH AND SON have at the present time on their List Men whose characters will bear strict investigation, and such as from their personal knowledge can recommend as to abilities, &c.—Ladies and Gentlemen requiring either of the above can be suited with reliable, first-class men by applying to Wm. Cutbush & Son, Highgate Nurseries, N.

GARDENER (HEAD), where more are kept.—Age 40, married, two children. Three and a half years' personal character. Thoroughly experienced.—J. T., Point House, Richmond Road, Putney, S.W.

GARDENER (HEAD).—Age 28; fourteen years' practical experience in all branches of the profession; excellent character and testimonials for abilities, &c. —JNO. JENKS, Oaken, Wolverhampton.

GARDENER (HEAD), where two or more are kept.—Age 26, married; good references.—W. CLAYTON, The Gardens, Stanage Park, Brampton Brian, Herefordshire.

GARDENER (HEAD), to any Lady or Gentleman requiring a thorough practical Gardener; also understands Ground Work.—Age 43, married, no family. Good references.—E. JONES, Tudor Road, Norbiton.

GARDENER (HEAD).—A titled LADY, now in London, will give her late Head Gardener seventeen years' good personal character for ability, industry, and sobriety.—A. B., 253, Lynton Road, Bermondsey, S.E.

GARDENER (HEAD), where one or two are kept.—Age 27; good experience under Glass and Outside. Good references.—WILLIAM SMITH, Elmore, Chipstead, Red Hill, Surrey.

GARDENER (HEAD); Age 29.—D. WALKER, Gardener to B. H. Collins, Esq., Dunorlan, Tunbridge Wells, can with every confidence recommend his Foreman, Joseph Anderson, to any Lady or Gentleman requiring the service of a good practical Gardener.—For further particulars apply as above.

GARDENER (HEAD).—Age 31; fifteen years' practical experience in all branches (Orchids, &c.), and for the past four years Foreman to the Hon. Mrs. Portman. Excellent testimonials from present and previous employers for ability and personal character.—CHARLES WATKINS, Buxted Park Gardens, Uckfield, Sussex.

GARDENER (HEAD).—A trustworthy man of thorough practical experience in the various branches of Gardening, acquired in first-class establishments, seeks a re-engagement as above. Six and a half years as Head in present situation.—W. G. NATION, The Gardens, Endsleigh, Newland, Hull.

GARDENER (HEAD).—Mr. BOORD wishes to recommend his late Gardener, who served him for six and a half years, and who left owing to the expiration of lease. Thoroughly practical and experienced in all branches. Fruit and Orchids specialties.—T. W. BOORD, Esq., M.P., 14, Berkeley Square, W., or to G., 21, Stamford Road, Fulham, S.W.

GARDENER (HEAD).—T. OSMAN, Ottershaw Park, Chertsey, Surrey, can with confidence recommend his Foreman to any Nobleman or Gentleman requiring the services of a good practical man; two years in present situation. For further particulars please address J. PERRYMAN, The Gardens, Ottershaw, Chertsey.

GARDENER (HEAD); age 30.—Mr. A. PETTIGREW, Cardiff Castle Gardens, Cardiff, will be pleased to recommend his General Foreman, Andrew Smith, to any Lady or Gentleman, requiring the services of a thoroughly competent and trustworthy man. He has had fourteen years' experience in all departments of gardening. Nearly seven years in present position.

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GARDENER (HEAD); age 31, married. —Mr. CARLTON, Gardener to the Right Hon. Lord Hillingdon, Wildernesse, Sevenoaks, is prepared to highly recommend Henry Humphreys, who has been Foreman in these gardens for five years, and whose character and abilities as a Gardener are worthy the attention of any Lady or Gentleman requiring the same.

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GARDENER (HEAD); age 30.—J. TULLETT, for the past five years Foreman to His Grace the Duke of Cleveland, Raby Castle, Darlington, Durham, would be pleased to meet with any Nobleman or Gentleman requiring a thoroughly practical man. Understands the management of a good Garden, first-class Fruit Grower and Plantsman. Can be highly recommended from present and previous employers. Fifteen years' good experience.—Please address as above.

GARDENER (HEAD).—S. HAINES, Gardener to the Earl of Radnor, Coleshill House, Highworth, Berks, would be pleased to recommend to any Lady, Nobleman, or Gentleman a thoroughly practical and energetic man as above. He has had eighteen years' experience (ten as Head), and well understands the general requirements of a large establishment. Character will bear the strictest investigation. —Please address as above.

GARDENER (HEAD), where two or more are kept.—Age 32. Mr. SHAW, Gardener to Lord Muncaster, wishes to recommend his Foreman to any Lady or Gentleman requiring a thorough practical Gardener.—The Gardens, Muncaster Castle, Ravenglass, Carnforth.

GARDENER (HEAD); age 30.—C. PENFORD, Leigh Park Gardens, Havant, Hants, would be pleased to recommend his Foreman, Frank Norkett, to any Lady or Gentleman requiring the services of a thorough practical Head Gardener. He has had considerable experience in this and other large places where Growing and Forcing of Plants, Flowers, Fruit, and Vegetables have been carried on extensively. He has been in present situation five years, and is of good character.—Please address as above.

GARDENER (HEAD WORKING), where two or three more are kept.—Age 27; thirteen years' good practical experience in all branches of the profession. Good character.—C. ROBINSON, Woodcote, Newport, Salop.

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GARDENER (HEAD WORKING).—Middle-aged, married, one child; thoroughly understands Early and Late Forcing of all kinds of Fruits, Flowers, Vegetables, Flower and Kitchen Garden. Good character.—A. B., 18, Walham Street, Grantham.

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GARDENER (HEAD WORKING); married when suited.—T. JANNOCH, Lily Nursery, Dersingham, King's Lynn, can with confidence recommend a man as above. Fourteen years' practical experience. Can be highly recommended by his present employer, with whom he has been three years.

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GARDENER (HEAD WORKING); age 29.—Mr. J. WILLARD, Head Gardener to the Baroness Burdett-Coutts, Holly Lodge, Highgate, N., can highly recommend the Advertiser as a thorough practical man, to any Lady, Nobleman, or Gentleman in want of a man as above. Good testimonials from previous employers.—Please address as above, or to F. W. RUSSELL, Clayton Villa, Hastings Road, Ealing, W.

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GARDENER (SINGLE-HANDED, or SECOND where three or four are kept).—Age 23; ten years' experience. Good character. Abstainer.—A. F., 61, Tanfield Road, Croydon.

GARDENER (SINGLE-HANDED, or where help is given).—Age 26, married when suited; abstainer. Ten years' practical experience, Inside and Out. Good character.—M. J., 54, St. Mary's Road, Peckham, S.E.

GARDENER (Single-handed, or good Second),—Age 27; single, well up in Flower and Kitchen Gardening. Two years in last and four years in previous situation,—A. S., 11, Montague Terrace, Perry Rise, Forest Hill, S.E.

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To Gardeners, &c.

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FOREMAN, in the Houses in a good establishment.—Age 26; good character.—G. L., The Gardens, Bentley Priory, Great Stanmore, Middlesex.

FOREMAN, in a good establishment; age 25.—Mr. Barham, The Gardens, Croxteth Hall, Liverpool, will be pleased to recommend a man as above.

FOREMAN, age 24.—G. W. Eden, Gardener to the Right Hon. Earl of Stradbroke, will be pleased to recommend Edw. Lubbock as above.—Henham Gardens, Wangford.

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FOREMAN, in a good establishment.—Age 27; thirteen years' experience in Growing Vines, Peaches, Melons, Stove and Greenhouse Plants, and Orchids. Well recommended.—M. FIELD, 34, Tadema Road, King's Road, Chelsea, S.W.

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FOREMAN, or SECOND; age 25.—Fred Thompson. Head Gardener, Norman Court, Dean, Salisbury, can highly recommend F. Mullens as a trustworthy man, and well up to his duties, having been first Journeyman for the last two years.

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PROPAGATOR and GROWER.—Age 23; eight years' experience with Plants, Roses, Cut Flowers, and General Nursery Work, Inside and Out; good Budder, and has a fair knowledge of the value of Nursery Stock generally. Good references.—A. W. W., 15, Barend, Winchester, Hants.

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To Nurserymen.

GROWER (Soft-wooded Plants).—Age 23. Five years in present situation.—A. E. FOORD, 21, Wooler Street, Scarborough.

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To Nurserymen.

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JOURNEYMAN (First), in a good establishment.—Age 23, good character.—J. BAILEY, The Gardens, Franks Hall, Dartford, Kent.

JOURNEYMAN (First), in the Houses, in a good establishment.—Age 21; seven years' experience; good references.—F. BLACKALL, The Gardens, Hylands, Chelmsford, Essex.

JOURNEYMAN (First), in the Houses, in a large establishment.—Age 22; abstainer. Highly recommended from present and previous place. Bothy preferred.—CHARLES HARVEY, Bulwick Gardens, Wansford.

JOURNEYMAN (First), in a good establishment.—Age 22; has a good knowledge of Plants and Fruit Growing under Glass.—E. MILLER, Wigton Nurseries, Wells Road, Sydenham.

JOURNEYMAN (First), in a good Establishment, in the Houses. Nine years' experience in good places. Two years in previous situation.—G. LILLEY, Thorney, near Peterborough, Cambs.

To Noblemen and Gentlemen.

JOURNEYMAN (First), in a large establishment.—Age 23; two years in last situation; good character. Bothy preferred.—H. WINSTANLEY, Billeswell, Leicestershire.

JOURNEYMAN, in the Houses; age 21.—Mr. Pritchard, Umberslade Gardens, Birmingham, wishes to recommend a young man. Five years' experience.

JOURNEYMAN, in the Houses, or Inside and Out.—Age 22; good references. Seven years' experience.—W. PERCY, Upper Parks Fields, Putney, S.W.

To the Trade.

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JOURNEYMAN, in the Houses.—Age 25; eight years' experience, two years in present place.—G. HARDING, Bifrons Gardens, Canterbury.

JOURNEYMAN.—A. Ryder, Gardener to Sir W. Anderson, Ogg, Oakfield, South Dulwich, desires to recommend an active, hardworking young man as above.—Particulars on application.

JOURNEYMAN, in the Houses.—Age 20. W. Whibberley, Oulton Park, Tarporley, can highly recommend a young man as above. Three years in present situation.

JOURNEYMAN, in the Houses; age 22.—H. Tull, Head Gardener, Belmont Park, Havant, Hants, wishes to recommend George Mullins. Six years' experience.—Apply as above.

JOURNEYMAN.—A young man (age 24) with ten years' experience in the Growth and Propagation of Hard and Soft-wooded Plants, Tea Roses, Tomatos, &c., desires a situation. Good references.—G. B., Round House, Newmarket Road, Cambridge.

JOURNEYMAN, in the Houses; age 19.—Charles Williams, Head Gardener, Lower Eaton, Hereford, can with every confidence recommend to any Gentleman's Gardener a persevering young man. Has served three years' apprenticeship under him, and nearly one year in a good establishment since.

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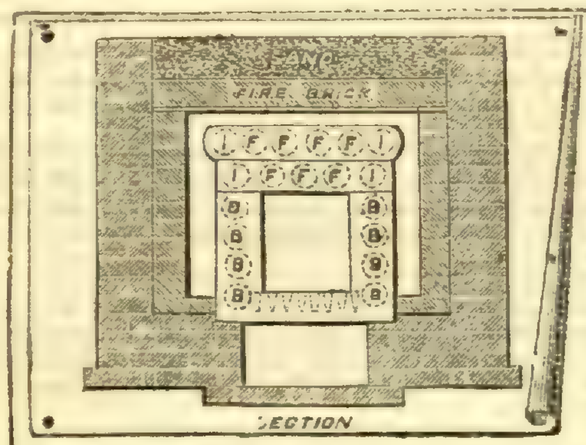

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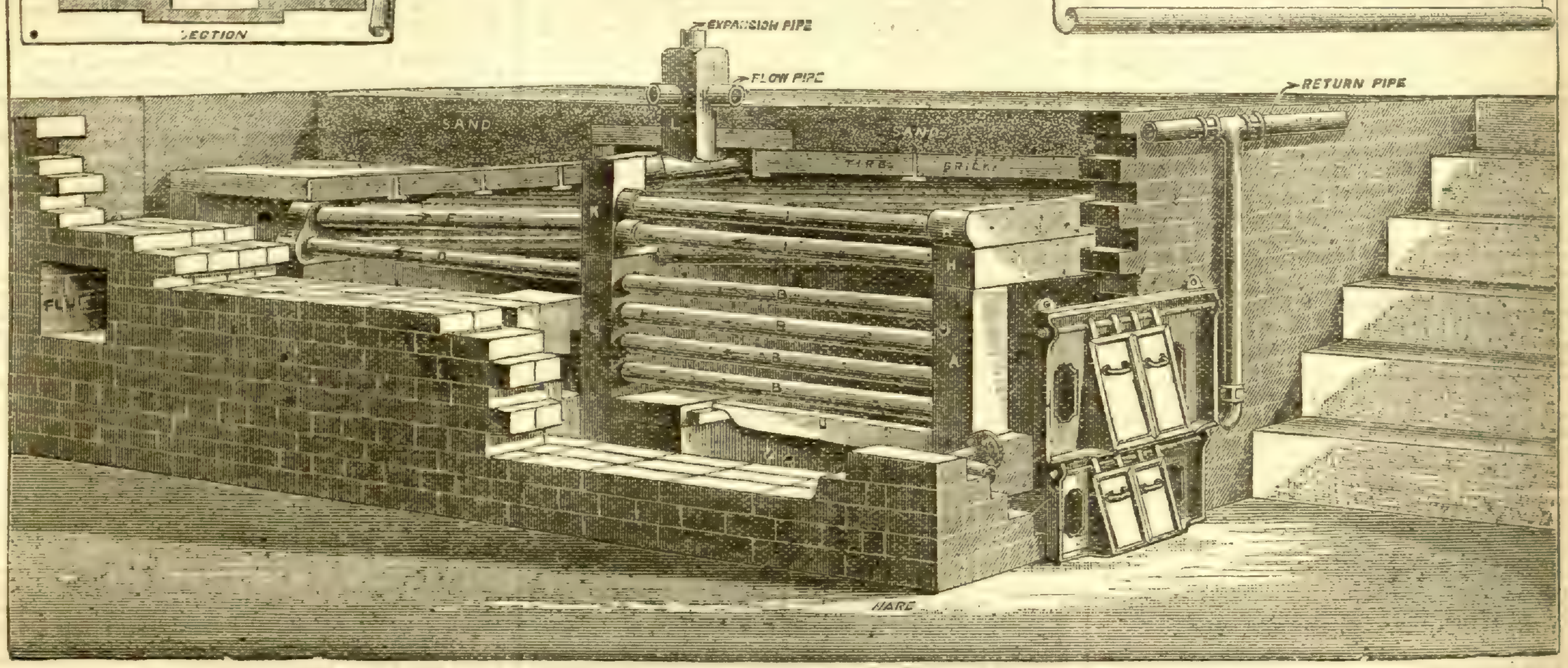

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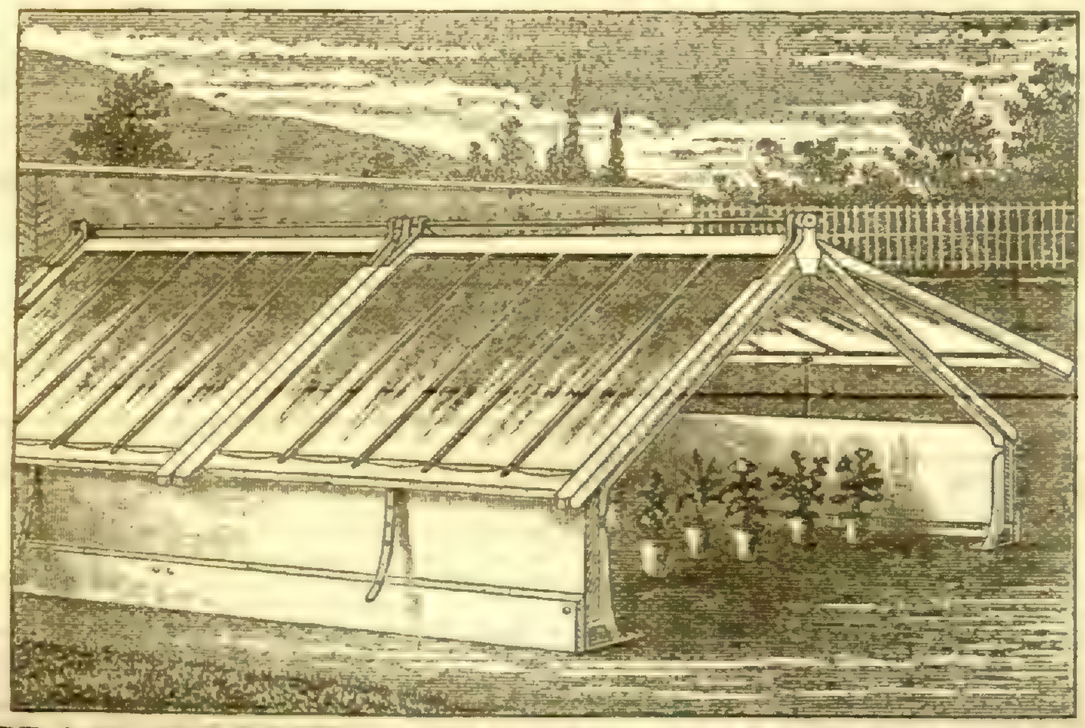
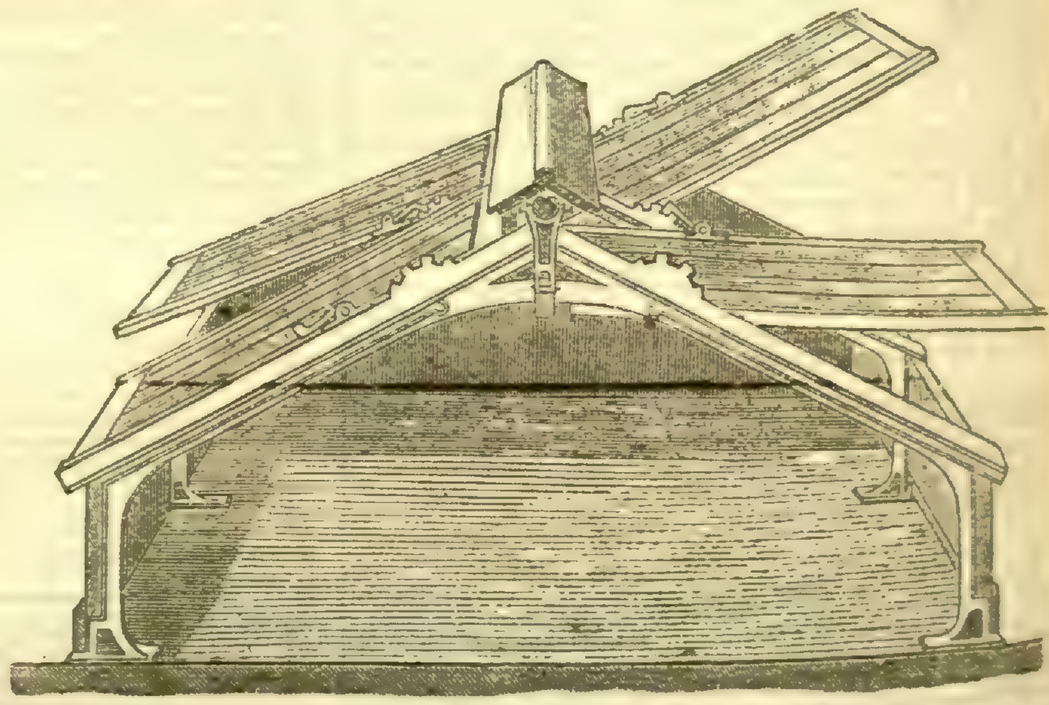


SPAN FRAME on Iron Standards, 5 feet wide.



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CONTENTS.

Acacia, Iconography of Australian species of ... 251
Alton Towers 243
Amateurs' notes 249
Apiary, the 249
Arnold Arboretum ... 251
Books, notices of:—
Manual of Orchidaceous Plants 258
Bulb disease and manure 257
,, garden, the ... 247
Cinder-ash 251
Colonial fruit 251
,, notes 253
Earthworms with bifid ends 256
Egyptian flora 252
Eucharis or bulb mite ... 252
Firewood 257
Flower garden, the ... 248
Forestry 248
Fruit trees, manuring ... 247
Fruits under glass ... 254
Gardeners' education ... 252
Gardening appointments 266
Grape, Roberts' White Gros Colmar ... 254
,, outdoor 256
Hardy fruit garden, the . 255
Heliophila scandens ... 252
Herbaceous border, the... 249
Hooper & Co.'s nursery... 245
Iceland, plants and products of 246
India, economical condition of... 251
Jubilee and the Gardeners' Orphanage, 251, 257
Jubilee scheme, florists' . 250
Myriocarpa stipitata ... 257
National Chrysanthemum Society 251
Orchid notes 256
Parasitical plants ... 256
Phalænopsis Förstermanii 244
Potato at rest, the ... 250
Propagator, the 257
Restrepia pandurata ... 244
Roses, classification of exhibition 247
Royal Horticultural Society 250, 256
Scotland, notes from ... 254
Strophanthus seeds ... 252
Thyrsacanthus rutilans . 254
Tobacco culture 245
Turf-lifting machine, Drummond's 253
United Horticultural Benefit and Provident Society 251
Vegetables 258
Weather 259

ILLUSTRATIONS.

Alton Towers 246, 247
,, ,, the Terrace Gardens at. (See Supplement.)
Grape, Roberts' White Gros Colmar 255
Turf-lifting machine, Drummond's 253

THE LIVERPOOL HORTICULTURAL ASSOCIATION—EXHIBITIONS for 1887.
The SPRING SHOW of HYACINTHS, TULIPS, AZALEAS, FORCED HARDY PLANTS, &c., will be held in St. George's Hall on WEDNESDAY, March 16.
GRAND EXHIBITION in Sefton Park on SATURDAY and MONDAY, July 30, and August 1. The GREAT CHRYSANTHEMUM and FRUIT SHOW on TUESDAY and WEDNESDAY, November 22 and 23. Liberal and Special Prizes are offered. Schedules now ready and may be had on application to
EDWARD BRIDGE, Sec.
3, Cedar Terrace, Tarbock Road, Huyton.

PRESTON and FULWOOD HORTICULTURAL SOCIETY.
The NINTH GREAT SPRING FLOWER SHOW and FLORAL FÊTE will be held in the large New Public Hall, Preston, on THURSDAY and FRIDAY, March 17 and 18 next. Schedule of Prizes and other information from
Mr. JOHN ATHERTON, Fern Bank, Cadley, Preston.

RHODODENDRONS.—Well budded, choice named kinds, 21s., 24s., and 30s. per dozen. Thousands to select from.
JOHN STANDISH AND CO., Royal Nurseries, Ascot.

CEDRUS DEODARA.—The largest stock in the country, from 3 to 12 feet and upwards. Prices very moderate. CATALOGUE on application to
H. LANE AND SON, The Nurseries, Berkhamsted, Herts.

Kent, the Garden of England.
FRUIT TREES, true to name.
The largest and best Stock in Britain.
GEORGE BUNYARD AND CO., Maidstone.
P.S.—Send direct: no Agents.

HAMPTON COURT BLACK HAMBURGH VINES.—Great Reduction in Price. A large number of Extra strong Fruiting Canes of the above, and all other leading varieties, at greatly reduced prices.
T. JACKSON AND SON, Nurseries, Kingston-on-Thames, and Royal Kitchen Gardens, Hampton Court.

PINES.—Four Dozen extra strong Succession Plants (Queens), for Sale. Must be cleared; no reasonable offer refused. Apply to
J. COWARD, The Gardens, Haverholme Priory, Sleaford.

Orchard Trees.
H. LANE AND SON can supply fine Standard PEARS, PLUMS, APPLES, DAMSONS, &c. Sorts most suitable for profit. Descriptive CATALOGUE free.
The Nurseries, Berkhamsted, Herts.

Roses.
H. LANE AND SON have still a large stock to select from. Standards, 12s. to 15s. per dozen; Half-standards, 9s. to 12s. per dozen; Dwarfs, 6s. to 9s. per dozen. All leading kinds. CATALOGUE on application to
The Nurseries, Berkhamsted, Herts.

TRUE CELESTIAL ROSES, on own roots, very hardy and very scarce, the buds most exquisitely delicate pink:—Small suckers, three for 12 stamps, by post; larger plants, 1s. and 2s. each.
A. MOSS, Chadwell Heath, E.

Bedding Begonias.
JOHN LAING AND CO. have a grand stock of Tubers, carefully and specially selected to colour for bedding from our outdoor beds last summer, three shades of crimson, orange-scarlet, magenta, pink, rose, scarlet, white, &c. Per dozen, post-free, 6s.. Cultural Directions in CATALOGUE.
JOHN LAING AND CO., The Nurseries, Forest Hill, S.E.

EDW. PYNAERT'S NEW PLANT CATALOGUE is now sent post-free on application.
EDW. PYNAERT, Ghent, Belgium.

Grape Vines and Strawberries (in pots).
FRANCIS R. KINGHORN offers very fine stocks of the above in all leading varieties, true to name. LIST and Prices on application.
Sheen Nurseries, Richmond, Surrey.

Cut Roses.
MARÉCHAL NIELS! MARÉHAL NIELS!
GROWERS OF ABOVE wishing to obtain best value, should send to
WISE AND RIDES, Covent Garden, W.C.

SQUELCH AND BARNHAM, North Row, Covent Garden, W.C., are OPEN TO DISPOSE OF any quantity of MUSCATS and BLACK GRAPES, TOMATOS, FRENCH BEANS, STRAWBERRIES, CHOICE FLOWERS, &c. Highest Market Prices obtained; Account Sales daily, Cheques weekly or as preferred by Sender. Baskets and Labels supplied. References given,

W. UNWIN, FLOWER and FRUIT COMMISSION SALESMAN, The Piazza, Covent Garden Market, London, W.C.
Established 15 years.
Empties and Labels supplied.

Floral Commission Agency.
A. HILL AND CO., 52, Hart Street, Covent Garden, W.C., are open to RECEIVE CONSIGNMENTS of Choice CUT FLOWERS in any quantity. A. H. & Co., giving personal attention to all consignments, are thus enabled to obtain the highest market prices. All Cheques forwarded weekly. Bankers and good Trade references. Boxes and Labels supplied.

WANTED, OAKS, Fulham and Turner's, 4 to 6 feet. Price to
GARDENER, Beechhurst, Camberley.

WANTED, large PALMS, TREE FERNS, and other large ORNAMENTAL FOLIAGED PLANTS, in EXCHANGE for ORCHIDS or othet PLANTS. Send full particulars.
The LIVERPOOL HORTICULTURAL CO, (John Cowan), Limited, The Vineyard, Garston, Liverpool.

WANTED, Old Plants of "Mrs. Pollock" and other Fancy Gold and Silver Tricolor GERANIUMS, hardy PRIMULAS, HEPATICAS, SAXIFRAGES, Yellow PICOTEES, Flake CARNATIONS, Fancy Double and Pompon DAHLIA TUBERS, ECHEVERIAS and other CARPET BEDDING PLANTS; Blue LOBELIAS, SALVIAS, LANTANAS, PENTSTEMONS, HELIOTROPES, CUPHEAS. All above to be stock plants. Price per dozen or hundred. Also a few thousand various GERANIUM CUTTINGS.
RUBUS, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

East Lothian Intermediate Stocks.
THOMAS METHVEN AND SONS offer their choice strain of the above, in five varieties, viz., Scarlet, Purple, White, Crimson, and White Wall-leaved, at 1s., 2s. 6d., & 5s. each colour. Price to the Trade on application.
By Royal Warrant, Nurserymen and Seedsmen to the Queen, Edinburgh.

Begonias a Specialty.
LAING'S BEGONIA SEED.—Awarded Two Gold Medals. From Prize Plants, in sealed packets. Choice mixed, from single varieties, 1s., 2s. 6d., and 5s. per packet; double varieties, 2s. 6d., 3s. 6d., and 5s. per packet. Collections—12 named varieties, separate, 5s. 6d.; 6 ditto, 3s. Order direct from us, to procure the genuine seed.
JOHN LAING AND CO., Seedsmen, Forest Hill, S.E.

Reduced Prices to meet Depression.
DESCRIPTIVE CATALOGUE, comprising fine transplanted FRUIT TREES, ROSES, Hardy CLEMATIS, RHODODENDRONS, CONIFERS, TREES and SHRUBS, CLIMBERS, FOREST TREES, &c., free on application to
GEO. JACKMAN AND SON, Woking Nursery, Surrey.

Rhododendrons.
JOHN WATERER AND SONS, Bagshot, Surrey, are the Great Exhibitors of Hardy Scarlet and White RHODODENDRONS.
Their CATALOGUE is ready, and may be had on application.

Myrobella.
PRUNUS MYROBALANA, or CHERRY PLUM.—The best stuff for Mending Old Fences or Making New Ones. Grows fast in poorest soils. Much stronger than Whitethorn. It is also an excellent Stock for the Plum. A sample hundred, 2 to 3 feet, sent on receipt of 6s., 50 for 3s. Full further particulars of
EWING AND CO., Sea View Nurseries, Havant, Hants.

LILIUM AURATUM. — Good, plump, sound Bulbs, 6s., 9s., 12s., 18s., and 24s. per dozen; extra strong, 20s. and 42s. per dozen. All other good LILIES at equally low prices.
Mr. WILLIAM BULL'S Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

STUARTIA PENTAGYNA, fine strong bushes, 3s. 6d. to 5s, each.
GORDONIA PUBESCENS, fine strong bushes, 5s. each.
ANDROMEDA ARBOREA, fine strong bushes, 2s. each.
STYRAX JAPONICA, fine strong bushes, 1s. 6d. each.
T. SMITH, Daisy Hill Nursery, Newry.

CHOICE NAMED TUBEROUS BEGONIAS. —Send for a CATALOGUE of all the best Double and Single varieties at fully one-third less in price than charged by other well-known firms. Can also supply Seedling Whites, fine strain, 6 for 4s. free; grand for greenhouse or bedding-out.
MORLEY AND CO., Preston.

GOOD SOUND SHALLOTS for setting. Can take 2s. 6d. stone.—GEORGE BEAUMONT, Commission Agent in Fruit and Vegetables, Leeds.

For Sale.
RASPBERRY CANES—the famous Carter's Prolific. These Canes can be planted with perfect safety to the end of March. Not less than 1000 Canes supplied. Apply to ALBERT BATH, Sevenoaks, Kent.

Strawberries a Specialty.
LOVEL'S STRAWBERRY PLANTS, 100, 2s. 6d.; 500, 10s.; 1000, 15s.
Sample and Pamphlet, 3d. Select LIST free.
W. LOVEL AND SON, Strawberry Growers, Driffield.

SIMPLE INSTRUCTIONS, by which anybody, anywhere, may force and obtain a great quantity (lasting until outdoor beds are in full bearing), of most excellent ASPARAGUS, at a very trifling expenditure of time or money. Directions sent free to all applicants.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

HENRY ORMSON AND CO., HORTICULTURAL BUILDERS and HOT-WATER ENGINEERS, Stanley Bridge, King's Road, London, S.W. Designs for Conservatories, Greenhouses, and Heating by Hot-water free on application. See large advertisement, Feb. 5, p. 191.

SALES BY AUCTION.

Hertford.

GREAT UNRESERVED CLEARANCE SALE of the whole of the well-grown NURSERY STOCK, standing on the several grounds known as Campbells, Camp Hill, Lloyd's, Fisher's, Sandy Lane, Brandon's, Orchard, Brickfields, New Field, Lower Ground, Camp Hill Cottage, and Dimsey's Garden.

FIVE DAYS' SALE.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Francis Bros., to SELL by AUCTION, without reserve, at the several Nurseries as mentioned above, and all within a few minutes' walk of the Hertford Railway Stations, on MONDAY, February 21, and four following days, at 12 o'Clock punctually each day, the whole of the valuable NURSERY STOCK, comprising:—

50,000 Evergreen, Coniferæ, and Deciduous Shrubs, amongst which are splendid specimen Cupressus and Pinus, of sorts; 5000 Portugal and other Laurels, 1 to 4 feet; 7000 Pinus, Scotch, and Spruce Firs, 2 to 5 feet; 3000 green and variegated Hollies, 1 to 3 feet; 1000 Aucubas; 1000 English Yews.

75,000 Larch, 25,000 dwarf and standard Roses; 100,000 Manetti stocks and cuttings; 30,000 Rose stocks, all in dormant bud, worked with the newest and most approved varieties, and forming altogether one of the finest collections in the trade; 50,000 Ornamental and Forest Trees, including 25,000 Limes, Poplars, Beech, Birch, and Chestnuts; 12,000 Fruit Trees, 10,000 Gooseberries and Currants; some hundreds of Orchard Fruit Trees; 25,000 capital bricks, stack of Hay, &c.

May be viewed any day (Sundays excepted) prior to the sale. Catalogues may be had of Mr. THOMAS, the Foreman at the Nurseries; at the Salisbury Arms and Dimsdale Arms, Hertford; of E. K. FRANCIS, Esq., Solicitor, 4, Great Winchester Street, London, E. C.; and of the Auctioneers, Estate Agents, and Valuers, 67 and 68, Cheapside, London, E.C., and Leytonstone.

Tuesday Next.

400 fine Standard and other ROSES of the leading kinds, CONIFERS, RHODODENDRONS, and DECIDUOUS SHRUBS, Standard and Trained FRUIT TREES, choice Double CAMELLIAS, AZALEAS, and other PLANTS, without reserve.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at the City Auction Rooms, 38 and 39, Gracechurch Street, E.C., on TUESDAY NEXT, February 22, at 12 o'Clock precisely.

On view morning of Sale. Catalogues obtainable at the Rooms, and of the Auctioneers, 67, and 68 Cheapside, E.C.

Tuesday Next.

ORCHIDS IN FLOWER.—SPECIAL SALE.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, February 22, at half-past 12 o'Clock precisely, a very fine collection of ORCHIDS in FLOWER, amongst which may be mentioned:—

Oncidium nubigenum
Dendrobium Ainsworthii
,, ,, roseum
,, Dominianum
,, nobile pulcherrima
,, Wardianum, fine varieties
Lycaste Skinneri alba
Masdevallia Shuttleworthii xanthocorys, First-class Certificate R.H.S.
Odontoglossum Alexandræ numerous plants
Cœlogyne cristata, Chatsworth variety
,, ,, alba
,, Lemoniana
Cypripedium Curtisii
,, Dauthierii
,, calurum
,, callosum

Cattleyas in variety, Dendrobiums, Lælias, Odontoglossums, Oncidiums, Cypripediums, &c.

On view morning of Sale, and Catalogues had.

Wednesday Next.

50,000 Seeds of KENTIA BALMOREANA and FORSTERIANA, received from Lord Howe's Island. For sale without reserve.

MESSRS. PROTHEROE AND MORRIS will include the above in the SALE at their Rooms, on WEDNESDAY NEXT, February 23, at half past 12 o'Clock precisely.

On view morning of Sale, and Catalogues had.

Every Wednesday and Saturday.

SALES of CAMELLIAS, AZALEAS, PALMS, and other PLANTS in variety, from Belgium, and elsewhere; LILIUM AURATUM and many rare LILIES, also a collection of beautiful IRIS from Japan (see native drawings), 500 choice named Standard and Dwarf ROSES, FRUIT TREES, CARNATIONS, PICOTEES, English grown LILIES, and a great variety of hardy BULBS and PLANTS.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., every WEDNESDAY and SATURDAY, at half-past 12 o'Clock precisely each day.

On view morning of Sale, and Catalogues had.

Friday Next.

Specially selected masses of CATTLEYA MENDELII, from a locality known to Mr. Sander as the best.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, February 25, at Half-past 12 o'Clock precisely a specially grand importation of CATTLEYA MENDELII in distinct masses and type containing among others selected specimens, well leaved and short bulbed. Also a very fine importation af Dendrobium nobile (blooms of a red flowered variety from the same mountain will be on view). Vanda Cœrulea and various Dendrobes, Oncidium pyramense, and many other rare and fine Orchids.

On view morning of sale, and Catalogues had.

Thursday Next.—(Sale No. 7354.)

2000 Extra fine Bulbs of the beautiful FREESIA REFRACTA ALBA, cases of ARAUCARIA EXCELSA, as received; 5000 South African TUBEROSES, &c.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, Feb. 24.

On view morning of Sale, and Cataloges had.

Monday Next.—(Sale No. 7354.)

IMPORTANT TO THE TRADE AND OTHER LARGE BUYERS.

15,000 Grand Bulbs of LILIUM AURATUM, L. AURATUM MACRANTHUM, RUBRO-VITTATUM, and WITTEI; 1500 L. KRAMERI, 1500 L. LONGIFLORUM, 800 L. SPECIOSUM ALBUM and ROSEUM, L. LEICHTLINII, L. LONGIFLORUM ROSEO MARGINATIS, L. CORIDION, L. CONCOLOR, 200 fine clumps of IRIS, in variety, &c., just received from Japan, in the finest possible condition.

MR. J. C. STEVENS will SELL the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY NEXT, February 21, at half-past 12 o'Clock precisely.

On view morning of Sale, and Catalogues had,

Wednesday and Saturday Next.

HARDY PLANTS and BULBS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W,C,, on WEDNESDAY and SATURDAY NEXT, February 23 and 26, at half-past 12 o'Clock precisely, First-class Standard and Dwarf ROSES from well-known English Growers; FRUIT TREES of sorts; HARDY SHRUBS and CONIFERS, ORNAMENTAL STOVE and GREENHOUSE PLANTS, HARDY BRITISH FERNS, BORDER PLANTS in variety; LILIUMS, GLADIOLI, &c,

On view mornings of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7357.)

CYMBIDIUM LOWIANUM.
DENDROBIUM BRYMERIANUM, long-bulbed variety.
DENDROBIUM WARDIANUM.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., by order of Messrs. Hugh Low & Co., on THURSDAY NEXT, February 24, at half-past 12 o'Clock precisely, a grand importation of CYMBIDIUM LOWIANUM, just to hand, in finest possible condition, by P. and O. steamship *Pekin*, comprising many splendid masses, amongst them the finest imported, all abundantly furnished with young growths; DENDROBIUM BRYMERIANUM, long-bulbed variety; D. DEVONIANUM, D. FALCONERI, D. PRIMULINUM GIGANTEUM, D. THYRSIFLORUM, D. WARDIANUM, CŒLOGYNE BARBATA, and other choice ORCHIDS.

On view morning of Sale, and Catalogues had.

Clearance Sale.—Second Portion.

Part of the Land being required for Building purposes.

POTTER'S BAR.

Great Northern Railway, ten minutes walk from the Station.

EXTENSIVE SALE of THRIVING NURSERY STOCK comprising a varied and choice collection of Conifera and Evergreen Shrubs, Ornamental Trees, Hardy American Plants, Apple, Pear, and Plum Trees, Flowering Shrubs, &c.

MESSRS. HARLAND AND SON will SELL by AUCTION, at the Osborne Nurseries, Little Heath, Potter's Bar, on SATURDAY and MONDAY, February 26 and 28, at twelve for one o'Clock each day, on account of the number of Lots, by direction of Mr. E. Bennett.

Catalogues sent on application to the Auctioneers, High Barnet, Herts.

Matlock Moor and Matlock Bank Nurseries,

MATLOCK, DERBYSHIRE.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, AND OTHERS.

HIGHLY IMPORTANT and ATTRACTIVE SALE of NURSERY STOCK.

MESSRS. ELSE AND SON have received instructions from Mr. George Farnsworth to SELL by AUCTION, upon the above named Nurseries, without reserve, on TUESDAY and WEDNESDAY, March 8 and 9, including several Acres of Valuable NURSERY STOCK, comprising upwards of 250,000 transplanted and bushy Rhododendrons, in sizes up to 2½ feet; large quantities of Evergreen Privet, Laurels, Cupressus, Retinospora, Yews, Hollies, &c. Sale to commence at 11 o'Clock prompt.

Descriptive Catalogues may be obtained on application to the Auctioneers, Matlock Bridge; or from Mr. GEORGE FARNSWORTH, The Nursery, Matlock Bank, one week prior to sale.

Matlock Bank Nurseries are situated close to Rock Side Hydropathic Establishment, and about half a mile from the Matlock Bridge Railway Station.

ORCHIDS—ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,
THE VINEYARD and NURSERIES, GARSTON, NEAR LIVERPOOL,
Have to state that they have just received a fine importation of

EAST INDIAN ORCHIDS.

LIST, with full particulars, will be sent post-free on application.

WANTED, in London or Suburbs, a SMALL NURSERY, with from Three to Five Greenhouses, in good condition, and Cottage Residence.

Apply to Mr. J. C. STEVENS, 38, King Street, Covent Garden, W.C.

FOR SALE, a FREEHOLD NURSERY. Large connection. Death cause of sale.

Address, 59, Glayde Terrace, High Road, Willesden Green.

TO BE SOLD, the LEASE, GOOD-WILL, and STOCK of a Small NURSERY BUSINESS within 3 miles of the London Markets, comprising six Greenhouses heated by two boilers, Showhouse, Toolhouse, Stable, comfortable Dwelling-house, &c. Good Private Trade.

Apply to Mr. LANE, Surveyor, 23, Elam Street, Camberwell, S.E.

FOR SALE. a SMALL NURSERY, about an acre of Ground, 4000 feet of Glass, well stocked with Vines; a small Dwelling-house on the ground with a long Lease. Present occupier twenty years.

Apply to J. B., Vine Nursery, Anerley Park, Penge, Surrey.

Old-established Nursery Business For Sale.

FOR SALE by Private Bargain, as a Going Concern, the well-known NURSERY BUSINESS carried on at Bangholm, Ferry Road, Edinburgh, and held by the Lawson Seed and Nursery Company (Limited) for many years past. The business was previously successfully carried on by Messrs. Peter Lawson & Son. All as previously advertised in the *Scotsman* of 19th and 22d January, 1887.

It is considered that the present is a favourable opportunity for any Public or Private Company acquiring on advantageous terms an excellent Nursery Stock.

Full particulars as to terms of sale or transfer can be had by principals or their agents on application in writing to Messrs. CHIENE AND TAIT, C.A., 67, George Street, Edinburgh, the Liquidators of the Company; or to Messrs. MACKENZIE AND KERMACK, W.S., 9, Hill Street, Edinburgh, their Agents.

FOR SALE, a NURSERY.—Five large Glasshouses, each over 100 feet long; Potting-shed, and Double-fronted Cottage, only built three years. Well Stocked, and in full working. Eighteen years' lease. Rent, £20 the lot. Price £700. Glasshouses property of purchaser; all well heated. Price includes Stock.

Apply to C. COWLES, Woodford Green, Essex. Accommodation if required,

FOR DISPOSAL, a FLORIST'S BUSINESS.—First-class opening. Twenty-one years' lease. Price £350. 4000 feet of Glass, 20,000 Bedding-out Plants, and other stock included. Selling through illness.

J. L., 42. The Grove, Ealing, Middlesex.

To Florists and Gentlemen's Gardeners.

TO BE SOLD, the Lease of a NURSERY, Greenhouses, Stock-in-Trade in full working order; incoming low. An immediate purchaser will be liberally treated with.

For particulars apply to Mr. JAMES CLEMMANS, Surveyor, 5, Russell Villas, Seven Sisters' Road, Stamford Hill, London, N.

Immediate Possession.

TO FLORISTS, NURSERYMEN, and OTHERS.

TO BE LET, on LEASE, or the LEASE would be SOLD on very advantageous terms, a very convenient seven-room COTTAGE with SHOP, large Glass erection, Outbuildings, and 2 acres of Land.

For full particulars apply to Mr. J. EMBLETON, Suffolk House, New Hampton, a few minutes from Fulwell Station, South-Western Railway.

Hampton, Middlesex.

FOR SALE, 8 Acres of FREEHOLD LAND, close to Station, and well adapted for Nursery purposes; a large portion of the purchase money can remain on mortgage at 4½ per cent.

Apply to Mr. J. EMBLETON, Suffolk House, New Hampton.

To Gardeners.

TO LET, near Leeds, a NURSERY, with House and Outbuildings. Over three acres of Land, with about 5000 feet of Glass. Good prospect. Splendid opening for energetic man.

Low Close Mills, Cross Stamford Street, Leeds.

Rhyl.

TO BE LET, a GENERAL BUSINESS PREMISES, with two commodious Warehouses attached. Agricultural Seed Business may be added with advantage to any business. Carried on for upwards of thirty years (owner retiring). Good House, with two Sitting Rooms, seven Bed Rooms, and close to the railway station at Rhyl.

Apply to Mr. J. JONES, 50, Kinmel Street, Rhyl.

PROTHEROE AND MORRIS, HORTICULTURAL MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

Important Notice.

To Florists, Seedsmen, Horticultural Builders, &c.
PLANTS, FLOWERS, FRUITS and VEGETABLES a Specialty.

WM. J. WELCH begs to call particular attention to his productions for ILLUSTRATING BOOKS, MAGAZINES, CATALOGUES, and for ADVERTISING PURPOSES.

For Specimens see *Gardeners' Chronicle*, 1883 to 1886.
ADDRESS:—25, Wellington Street, Strand, London, W.C.

Landscape Gardening.

H. F. MALLER (of the firm of B. Maller & Sons), late Pupil of the Crystal Palace School of Landscape Gardening, is prepared to FURNISH PLANS, or undertake any kind of the above work.—61, High Street, Lewisham.

You cannot do better than send for a

CATALOGUE, Gratis and Post-free, at once; the demand is unprecedented. The most comprehensive List of General Vegetable and Flower Seeds at prices that defy competition, quality considered. Rare African Plants, Rare Seeds and Novelties of every description. Strong two-year-old plants "Wilson Junior" Blackberry 7*s*. per dozen, giving the utmost satisfaction.

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LARCH, transplanted, 2½ to 3½ feet. 22*s*. per 1000.
FIR, Native Scotch, transplanted, 1½ to 2½ feet. 18*s*. per 1000.
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All stout and finely rooted. Free on rails.

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NEW TREES—NEW PLANTS—NEW VIOLAS—NEW PÆONIES.

PRUNUS PISSARDI.—This fine ornamental tree, with wood black as ebony, and leaves red as blood, keeping on until frost, is disposable by the dozen and hundred, in young and middle plants; also in fine Specimen Pyramids, 6 to 8 feet; also fine Standards, transplanted, with bushy heads; all at a very cheap price. Large groups of these fine Prunus planted, mixed with Acer Negundo foliis variegatis, produce a decorative effect exceptionally fine and splendid, and unknown until now.

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FRUIT TREE STOCKS.—Such as Quinces, Pears, Apples, Plums, Mahaleb, common Cherries, one year and transplanted. Extra fine. Disposable by 100,000, very cheap.

FOREST TREES and ORNAMENTAL TREE STOCKS.—Disposable by millions, very cheap.

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PRIMROSES (Double varieties).—Cloth of Gold, 18*s.*; Crimson, 18*s.*; Crousii, 18*s.*; Lilac, 2*s.*; Purple, 6*s.*; Purple-crimson, 6*s.*; Platypetala, 6*s.*; Red, 4*s.*; White, 2*s.*; Early Yellow, 4*s.*; Late Yellow, 2*s.* per dozen. Single White, 2*s.*; Single Yellow, 1*s.*; Single Crimson, 6*s.*; Single, in variety, 1*s.* per dozen.

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PRIMULA, cashmiriana, 6*s.*; denticulata, 3*s.*; farinosa, 6*s.*; japonica, 4*s.*; Munroi, 4*s.*; nivalis, 2*s.*; pulcherrima, 9*s.*; rosea, 6*s.*; Sieboldi, 2*s.*; spectabilis, 6*s.*; viscosa, 6*s.* per dozen.

One plant of each, in 50 distinct varieties, carriage paid, for 25*s.* Cash with order.

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H. AND F. SHARPE will be pleased to give special quotations for all their fine selected stocks of the above-named Seeds of 1886 growth. Their prices will be found very advantageous to purchasers.

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JUST LOOK HERE. — The finest Spring Bedding Plant extant is GILBERT'S HARBINGER PRIMROSE, F.C.C., 20*s.* per 100; good clumps. CROSSED HARBINGER Seedlings, good clumps, 16*s.* per 100.

PRINCE of WALES RASPBERRY, in good canes, 7*s.* per 100; CHAMPAGNE RHUBARB, 6*s.* per dozen; true White FORGET-ME-NOTS, 4*s.* per dozen.

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CLEARANCE SALE of healthy PALMS for Table and Conservatory Decoration.—LATANIA BORBONICA, SEAFORTHIA ELEGANS, and PHŒNIX RECLINATA, 12 inches high, 6*d.* each, 4*s.* per dozen, 25*s.* per 100; same kinds, 20 inches high, 1*s.* 6*d.* each, 6 for 8*s.*, 12 for 14*s.* Packages and parcels post-free.

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W. H. ROGERS, Red Lodge Nursery, Southampton, offers at a low price, Hardy Scarlet and White RHODODENDRONS, dwarf, bushy plants, and Standards with straight stems and good heads; PINUS INSIGNIS and P. RADIATA, 1 to 2 feet, very fine; CUPRESSUS MACROCARPA, 3 to 5 feet, C. DENSA, 1½ to 2½ feet; RETINOSPORA PLUMOSA AUREA and THUIA LOBBI, 2 to 4 feet; and every other description of well grown NURSERY STOCK, extending over 60 acres.

ALDER, 3 to 4 feet, 22*s.* per 1000; ASH, 2 to 3 feet, 17*s.* per 1000; ditto, 1½ to 2 feet, 12*s.* 6*d.* per 1000. BIRCH, 2 to 3 feet, 20*s.* per 1000. SPANISH CHESTNUT, 2 feet, 18*s.* per 1000. ELM, 2 to 3 feet, 16*s.* per 1000; ditto, 3 to 4 feet, 20*s.* per 1000. LARCH, 1 to 1½ foot, 12*s.* 6*d.* per 1000; ditto, 1½ to 2 feet, 14*s.* per 1000; ditto, 2 to 2½ feet, 16*s.* per 1000; ditto, 2½ to 3 feet, 18*s.* per 1000; ditto, 3 to 4 feet, 22*s.* per 1000; ditto, 5 to 6 feet, 35*s.* per 1000. SPRUCE FIR, 1 to 1½ foot, 10*s.* per 1000; ditto, 1½ to 2 feet, 12*s.* per 1000; ditto, 2 to 2½ feet, 16*s.* per 1000: ditto, 3 feet, bushy, 10*s.* per 100. SCOTCH FIR, 1 to 1½ foot, 13*s.* per 1000; ditto, 2 to 2½ feet, 18*s.* per 1000. HAZELS, 3 feet, 20*s.* per 1000. OAKS, 2 to 3 feet, 17*s.* 6*d.* per 1000. SYCAMORE, 2 to 3 feet, 16*s.* per 1000; ditto, 3 to 4 feet, 20*s.* per 1000. THORNS, 1½ to 2 feet, 14*s.* per 1000. ditto, 2 to 2½ feet, 16*s.* per 1000; ditto, 3 feet, 20*s.* per 1000. PRIVETS, 2 to 3 feet, 16*s.* per 1000. PRIVETS, OVALIFOLIUM, 2 to 2½ feet, 30*s.* per 1000; ditto, 4 feet, extra bushy, 12*s.* per 100. BEECH, 1½ to 2 feet, 16*s.* per 1000; ditto, 2 to 2½ feet, 18*s.* per 1000. MYROBALAN PLUM, 2 feet, 25*s.* per 1000. Special offer by 50,000 and 100,000.

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CHRISTMAS ROSES.

HELLEBORUS ABCHASICUS ALBUS, 6*s.* per dozen.
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,, WILLY SCHMIDT, 12*s.* per dozen.

One plant of each of the above, post-free for 6*s.*

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DUKE of ALBANY PEA, for Exhibition (1*s.* per pint, carriage paid).

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THE BEST EXHIBITION CUCUMBER.

CARTERS' MODEL

The Long and Handsome variety that takes the LEADING PRIZES.

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Seedsmen by Royal Warrants to H.M. the Queen, and H.R.H. the Prince of Wales,

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PETER LAWSON AND SON (Limited), Edinburgh, have now Posted their Annual CATALOGUE of VEGETABLE and FLOWER SEEDS to their Customers, but should there be any not delivered, copies will be sent upon application.

The ANNUAL CATALOGUE of AGRICULTURAL SEEDS will be published later on; meanwhile Special Offers will be made upon application.

HERBACEOUS CALCEOLARIAS, clean healthy Stuff, raised from seed of three of the best Growers, 2*s.* and 3*s.* per dozen.

CHRYSANTHEMUMS, selected from the best varieties in cultivation, from 1*s.* 6*d.* to 6*s.* per dozen.

The above are well established in single pots, price per 100 or 1000 on application.

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THORN or QUICK for Hedges.—Transplanted, 25*s.* to 30*s.* per 1000; strong transplanted, 35*s.* to 40*s.* per 1000; extra strong transplanted, 40*s.* to 50*s.* per 1000; "gapping," very fine, 8*s.* per 100. All the above are stout, clean, and wonderfully well rooted.

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GREAT SACRIFICE to Clear Land.—Strong Standard and Pyramid-bearing Fruit Trees of best sorts, and fine Evergreen Ornamental Trees and Shrubs, Extra Transplanted, &c. Large Discount off usual prices for Cash. See LIST. Also FOREST TREES in quantity.—Apply,

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Single Roses.

GEO. COOLING AND SONS offer strong Plants of the following interesting and beautiful varieties:—BERBERIFOLIA HARDII, 2*s.* each; CAMELLIA JAPONICA, 2*s.* each; COPPER AUSTRIAN BRIER, 1*s.* each; MACARTNEY SIMPLEX, 1*s.* 6*d.* each; PAUL'S SINGLE CRIMSON, 1*s.* 6*d.* each; PAUL'S SINGLE WHITE, 1*s.* 6*d.* each; POLYANTHA, 1*s.* 6*d.* each; RUGOSA, 1*s.* 6*d.* each; RUGOSA ALBA, 2*s.* each; ROSA ECAE, 2*s.* each; YELLOW AUSTRIAN BRIER, 1*s.* each.

The set of Eleven Varieties, carriage free, 16*s.* 6*d.*

Full descriptions in our ROSE CATALOGUE, gratis and post-free. The Nurseries, Bath.

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AZALEA INDICA, full of flower-buds, 15*s.*, 21*s.*, and 30*s.* per dozen.
CAMELLIAS, full of flower-buds, 18*s.*, 24*s.*, to 36*s.* per dozen; specimens, 5*s.* to 15*s.* each.
RHODODENDRONS, finest named, 18*s.* to 30*s.* per dozen.
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LILY of the VALLEY, extra strong Berlin Crowns, 6*s.* per 100.
TUBEROSES, Double African and American Pearl. Largest and cheapest stock in the Trade. See Special LIST. Trade Supplied.

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SMALL SHRUBS and CONIFERÆ:—Cupressus Lawsoni, 12 to 15 inches, transplanted, 80*s.* per 1000; C. erecta viridis, 1 to 1½ foot, extra, 12*s.* per 100; C. stricta, 10 to 12 inches, 12*s.* per 100; C. gracilis, 10 inches, 12*s.* per 100; Cedrus Deodara, 2-yr., 50*s.* per 1000; Thuia Lobbii, 9 to 12 inches, 50*s.* per 1000; T. Ellwangeriana, 9 to 10 inches, 12*s.* per 100; Thuiopsis dolobrata, 9 to 10 inches, transplanted, 10*s.* per 100; Retinospora plumosa, 12 to 15 inches, bushy, 12*s.* per 100; R. squamosa, 9 inches, transplanted, 10*s.* per 100; Araucaria imbricata, 8 inches, fine, 40*s.* per 100; Pinus Cembra, 1-yr., 5*s.* per 1000; P. excelsa, 2-yr. 1-yr. transplanted, 10*s.* per 100; P. insignis, 1-yr. transplanted, 6*s.* per 100; P. Nordmanniana, 1-yr., 25*s.* per 1000; Abies Douglasii, 6 inches, 6*s.* per 100; ditto, 9 to 12 inches, 12*s.* per 100; English Yew, 6 to 9 inches, 8*s.* per 100; American Arborvitæ, 9 to 10 inches, 50*s.* per 1000; Box, Tree, 9 to 10 inches, 40*s.* per 1000; Sweet Bay, 9 to 12 inches, 7*s.* 6*d.* per 100; Evergreen Oaks, 2-yr., fine, 6*s.* per 100; Laurustinus, 8 inches, 8*s.* per 100; Portugal Laurels, transplanted, 6 to 8 inches, 60*s.* per 1000; Common Laurels, 2-yr., 20*s.* per 1000.

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H. AND F. SHARPE are prepared to make very advantageous offers of their fine selected stocks of SEED POTATOS to purchasers of a quantity. Their SPECIAL PRICED LIST comprises all the best and most productive varieties in cultivation.

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100 DECIDUOUS SHRUBS, in 50 distinct varieties, for 22*s.*

100 EVERGREEN SHRUBS, in 50 distinct varieties, for 32*s.*

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ANDRE LEROY'S Nurseries at Angers, France, the largest and richest in Europe in Collections of FRUIT and ORNAMENTAL TREES, SHRUBS, CAMELLIAS, ROSES, SEEDLINGS, STOCK FRUIT TREES, &c. CATALOGUES sent on application. Freight from Angers to London is very moderate. Medal of Honour at the Universal Exhibition at Paris in 1878.

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The Largest and Best New Pea.

LAXTON'S "WALTON HERO," from Telephone, by British Queen. First-class Certificate, Chiswick. Half pint, 2*s.* Laxton's "Open-air" TOMATO, the only reliable outdoor Tomato, 1*s.* 6*d.* per packet. Laxton's "Sandy Prize" ONION, the finest and truest Onion, half ounce, 1*s.* The largest podded RUNNER BEAN in the world, Laxton's "Czar." First-class Certificate, Shrewsbury. Half pint, 2*s.* The best LONGPOD BEAN, Laxton's "John Harrison." First-class Certificate, Royal Horticultural Society. Pint, 2*s.* With other choice novelties, in sealed packets, from

T. LAXTON, Seed Grower, Bedford.

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E. PLOWMAN AND SON are offering this grand BLUE WRINKLED MARROW PEA to the Public at a greatly reduced price. After two years careful trial against 18 older varieties, they have no hesitation in pronouncing it as very far advanced over other varieties which have borne good characters. It has strong constitution, quality A1, and produces 50 to 70 pods from one plant, averaging 9 to 11 Peas; height, 3 to 4 feet. Per pint, 1*s.* 6*d.*; per quart, 2*s.* 9*d.* Sent carriage paid to any address upon receipt of P.O.O.

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FRUIT TREES. — Standard two-year and Maiden PLUMS, Standard two-year and Farleigh DAMSONS, Dwarf-trained PEACHES, APRICOTS, and Morello CHERRIES, &c. One-year Seedling CRAB, 3*s.* 1000. Price on application to

FLETCHER BROS., The Nurseries, Ottershaw, Chertsey, Surrey.

SPECIAL CHEAP OFFER, to clear ground.—THORN QUICKS, 1½ to 2 feet, 13*s*. per 1000; 2 to 2½ feet, 15*s*. per 1000. LAUREL, Caucasian, 1½ to 2 feet, 8*s*. per 100; 2 to 2½ feet, 15*s*. per 100; LAUREL, colchic., 1½ to 2 feet, 8*s*. per 100; 2 to 3 feet, 12*s*. per 100; LAUREL, rotundifolia, 1½ to 2 feet, 12*s*. per 100; 2 to 2½ feet, 14*s*. per 100. LARCH FIR, SCOTCH FIR, SPRUCE FIR, SYCAMORE, SILVER, &c., equally cheap.

N.B.—All the above are splendid grown, well-rooted plants. Samples on application.

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RHODODENDRONS.—Our Sweet-scented Greenhouse varieties, nice bushy plants, with buds, 2*s*. 6*d*. to 3*s*. 6*d*. each.

AZALEA-MOLLIS Seedlings, fine bushes, well budded, each colour kept separate, 8*s*. to 9*s*. per dozen, 50*s*. to 60*s*. per 100.

" PONTICA, nice bushes, well budded, 4*s*. to 6*s*. per dozen.

" INDICA, best doubles, crimson, scarlet, pink, and white, nice dwarf bushes, well budded, 18*s*. per dozen.

DAPHNE MEZEREUM, red and white, full of buds, 3*s*., 4*s*. to 6*s*. per dozen.

ISAAC DAVIES AND SON, Nurserymen, Ormskirk.

SIMPLE INSTRUCTIONS, by which an abundance can be insured of delicious MUSHROOMS. See Seed LIST, free.

RICHARD SMITH AND CO., Seed Merchants and Nurserymen, Worcester.

FOR SALE, 80 PINE-APPLE PLANTS, aged from 1 to 2 years—Queens and Black Jamaicas. Apply FENNER, Henbury, Bristol.

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Established upwards of 100 years.

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E. P. FRANCIS AND CO.

The Nurseries, Hertford.—January 28, 1887.

BEES.—SEEDS OF PLANTS FOR BEES. The following varieties are highly recommended to the notice of Bee-keepers as amongst the very best of Annuals to sow for increasing the quantity and improving the quality of honey, and should be sown freely wherever there is garden space.

All Post free at prices quoted.

	Per lb.—*s*.	*d*.	Per oz.—*s*.	*d*.
BORAGE. One of the best	3	0	0	4
CLARKIA PULCHELLA	—		0	8
" " ALBA	—		0	8
CYANUS MINOR. A great favourite	4	0	0	6
ERYSIMUM PEROFFSKIANUM	—		0	6
GILIA TRICOLOR	4	0	0	6
" NIVALIS	4	0	0	6
LIMNANTHES DOUGLASII	7	6	0	8
MIGNONETTE, New Giant	10	0	1	0
" Dwarf compact	10	0	1	0
" common	7	6	0	6
NEMOPHILA INSIGNIS	5	0	0	6
" " ALBA	5	0	0	6
ŒNOTHERA BISTORTA VEITCHII	—		1	0

The APIARIAN'S PACKET, containing fourteen choice varieties, with Cultural Directions, post-free, 2*s*. 6*d*.

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CHEAP CLEARANCE OFFER.—LAUREL, CAUCASICUM, 12 to 18 inches, 5*s*.; 2 to 3 feet, 12*s*. COLCHIC, 1½ to 2 feet, 8*s*.; 3 to 4 feet, 18*s*.; 4 to 5 feet, 20*s*. COMMON, 12 to 18 inches, 4*s*. LATIFOLIA, 12 to 18 inches, 9*s*; 2 to 3 feet, 14*s*. ROTUNDIFOLIA, 12 to 18 inches, 7*s*.; 2 to 3 feet, 15*s*. PRIVET, oval-leaved, 2 to 3 feet, 4*s*. IVY, Irish, 2 to 3 feet, 7*s*. All per 100. ALDER, 2 to 3 feet, 18*s*. ASH, common, 20*s*. BIRCH, 2 to 3 feet, 18*s*. LARCH, 1½ to 2 feet, 15*s*.; 2 to 2½ feet, 18*s*. QUICK, 2 to 2½ feet, 18*s*. SYCAMORE, 2 to 2½ feet, 17*s*. 6*d*. All per 1000. Samples on application.

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ASPARAGUS, grand Roots for Forcing, 2*s*. per dozen, 12*s*. 6*d*. per 100; strong, for planting, 2*s*. 6*d*. per 100. SEAKALE, forcing, 2*s*. 6*d*. per dozen, 16*s*. per 100; planting, 2*s*. per dozen, 12*s*. 6*d*. per 100.

RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

NEW PLANT AND BULB COMPANY, Colchester.

No. 81. Our SPECIAL LIST of ORCHIDS.
No. 84. Our GENERAL LIST of LILIES, NARCISSI, &c.
No. 85. Our SPECIAL LIST of IRIS.
No. 86. Our SPECIAL SPRING LISTS of LILIES, GLADIOLI.

VERBENAS—VERBENAS—VERBENAS.—Eleven First-class Certificates have been awarded by the Royal Horticultural Society for this strain. Seed, now ready, 1*s*. 6*d*. per packet.

LIST of the new varieties sent free on application to W. STACEY, The Nurseries, Dunmow.

ROBERT NEAL begs to call the attention of Gentlemen, Builders, and others who intend planting this season, to his stock of FRUIT, FOREST, and ORNAMENTAL TREES, SHRUBS, ROSES, &c., which are in fine condition for removal, and comprise especially those kinds which are most suitable for Town Planting. Free delivery in own vans within a distance of six miles.

CATALOGUES on application.

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HARDY RHODODENDRONS and AZALEAS.—The most extensive stock in the Kingdom of the finest hardy varieties known.

☞ The Rhododendrons in Rotten Row and the Botanic Gardens, Regent's Park, are supplied by

ANTHONY WATERER, Knap Hill Nursery, Woking, Surrey.

THE PENNY PACKET SEED COMPANY

Supply 3000 Varieties of

VEGETABLE and FLOWER SEEDS in Packets at ONE PENNY each.

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Also all kinds of

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Comprising many Novelties and Rarities,

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Now ready, and should be seen by all Lovers of Hardy Perennials.

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THE LARGEST BROAD BEAN.

CARTERS'

LEVIATHAN.

Pods of this remarkable Bean have been grown 21 inches in length.

Price, per Pint, 2s. 6d.

Post-free, 2s. 9d.

Seedsmen by Royal Warrants to H.M. the Queen and H.R.H. the Prince of Wales,

237 & 238, HIGH HOLBORN, LONDON.

SHARPE'S NEW PEAS.

SHARPE'S PEA. 2s. per ½ pt. pkt.

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A grand Blue Marrow; height 2 feet. Pods large, deep green, and packed with large, deep green, deliciously flavoured Peas. The best Pea ever sent out, and so continuous a cropper that a constant supply may be maintained by it alone after the first crop is ready.

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A magnificent, large, Blue Wrinkled Marrow. Peas extra large—deep green. Very hardy.

SHARPE'S PEA. 2s. 6d. per pint.

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A fine Dwarf Blue Wrinkled Marrow, fine flavoured and heavy cropper—sixty-nine Pods, with nine to eleven Peas in each, gathered from one plant.

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Hardiest and earliest large Wrinkled Marrow. Successive crops can be had for four months.

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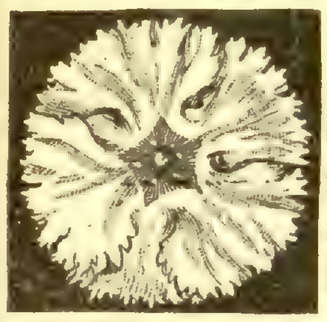

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My gardener is very solicitous that I should write and tell you the result of your Seed Potatos. 6 lb. Sutton's Seedling yielded 120 lb.. all good sound tubers; 6 lb. Sutton's Abundance produced 178 lb., all good sound tubers."—Mrs. HARVEY, *Purland Chase, Ross.*

NEW POTATO, 1886.
SUTTON'S SEEDLING.
Per 14 lb. 4/-
Per 56 lb. 14/-

"Sutton's Seedling Potato has turned out splendid. When cooked they are like balls of flour. It seems quite a disease-resisting Potato. If I were asked, 'What are the two best main-crop Potatos?' I should say, without hesitation, Sutton's Seedling and Magnum Bonum."—Mr. W. MACKIE, *Gardener to* Mrs. Ruddle, *The Mythe.*

NEW POTATO, 1887.
SUTTON'S TWENTY-ONE.
Per 14 lb. 5/-

"A wonderful cropper, very even, scarcely any small ones. The 3 lb. of seed were cut to single eyes, and the produce was 8½ bushels. Tubers fit for exhibition were found on nearly every root. Most excellent flavour." — Mr. C. ROSS, *The Gardens, Welford Park.*

NEW POTATO, 1887.
SUTTON'S THIRTY-SIX.
Per 14 lb. 5/-

"A heavy cropper, and, in fact, the best white round Potato I have grown. It cooks well, and is, in fact the beau ideal of a Potato for a gentleman's table."—Mr. G. ELLIOTT, *The Gardens, Braywick Lodge.*

NEW POTATO, 1887.
SUTTON'S FORTY-FOUR.
Per 14 lb. 5/-

"This handsome Potato is quite distinct; by far the best round I ever grew. Crop more than an average of uniform tubers. Quite free from disease. The best quality of any Potato I have grown this year. It has no bad point whatever, but is perfection."—Mr. C. ILOTT, *Gardener to* Major G. H. Allfrey, *Wokefield Park.*

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LORD BEACONSFIELD,
(A Seedling.)
The finest Raspberry and best cropper ever known. First-class Certificate, Royal Horticultural Society, 1883.
Large Canes. £3 per 100, 9s. per dozen.
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J. B. BUTTERFIELD, Freezywater, Waltham Cross, N.

THURSDAY NEXT.

CYMBIDIUM LOWIANA.
DENDROBIUM BRYMERIANUM, long bulbed variety.
DENDROBIUM WARDIANUM.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., by order of Messrs. Hugh Low & Co., on THURSDAY, February 24, at half past 12 o'Clock precisely, a grand importation of CYMBIDIUM LOWIANUM, just to hand, in finest possible condition, by P. and O. steamship *Pekin*, comprising many splendid masses, amongst them the finest imported, all abundantly furnished with young growths; DENDROBIUM BRYMERIANUM, long bulbed variety; D. DEVONIANUM, D. FALCONERI, D. PRIMULINUM GIGANTEUM, D. THYRSIFLORIUM, D. WARDIANUM, CŒLOGYNE BARBATA, and other choice Orchids.

On view morning of Sale, and Catalogues had.

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AGNES FLIGHT.—White, long twisted petals, creamy centre.
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And other leading varieties. Prices upon application.
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A special offer for fourteen days.

All who wish to improve their stocks of these should purchase one packet of OWEN'S IMPERIAL BEGONIA, PRIMULA, and CINERARIA SEED, and be convinced that his strains are unsurpassed, the result of ten years' hybridising and selections. 1s. 6d. and 2s. 6d. per packet, post free.

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HOLLY SEED, clean, 1-year rotted, for immediate sowing.

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STRONG FOREST TREES, of best quality:—

LARCH, 1½ to 2, 2 to 3, 3 to 4, and 4 to 5 feet.
SCOTCH, 1 to 1½, 1½ to 2, and 2 to 2½ feet.
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BEECH, 1½ to 2, 2 to 3, 3 to 4, and 4 to 5 feet.
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ASH, 1½ to 2, 2 to 3, and 3 to 4 feet.
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LIGHT BROWN FIBROUS PEAT, 5s. 6d. per sack; 5 sacks, 25s.; sacks, 4d. each.

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Flowers of a beautiful rich blue colour.

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Flowers of a brilliant rosy-carmine colour.

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A perpetual bloomer, flowering profusely and continuously from spring till autumn; of a pleasing soft lilac shade of colour.

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The best red variety, exceedingly floriferous, of fine form and substance.

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Much the largest white variety in cultivation.

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ROSA CANINA.

A. One Year's Seedlings.

1,000	Plants,	extra choice, pencil thick,	10 m.
10,000	„	extra choice, pencil thick,	95 m.
1,000	„	I. choice, straw thick ..	5 m.
10,000	„	I. choice, straw thick ..	45 m.
100,000	„	equal	400 m.

Two and Three Years' Replanted

B. Seedlings.

1,000	Plants,	2 years, little finger thick,	24 m.
1,000	„	I. choice, pencil thick ..	18 m.
10,000	„	I. choice, pencil thick ..	170 m.
10,000	„	I. choice, straw thick ..	150 m.
20,000	„	I. choice, straw thick ..	290 m.

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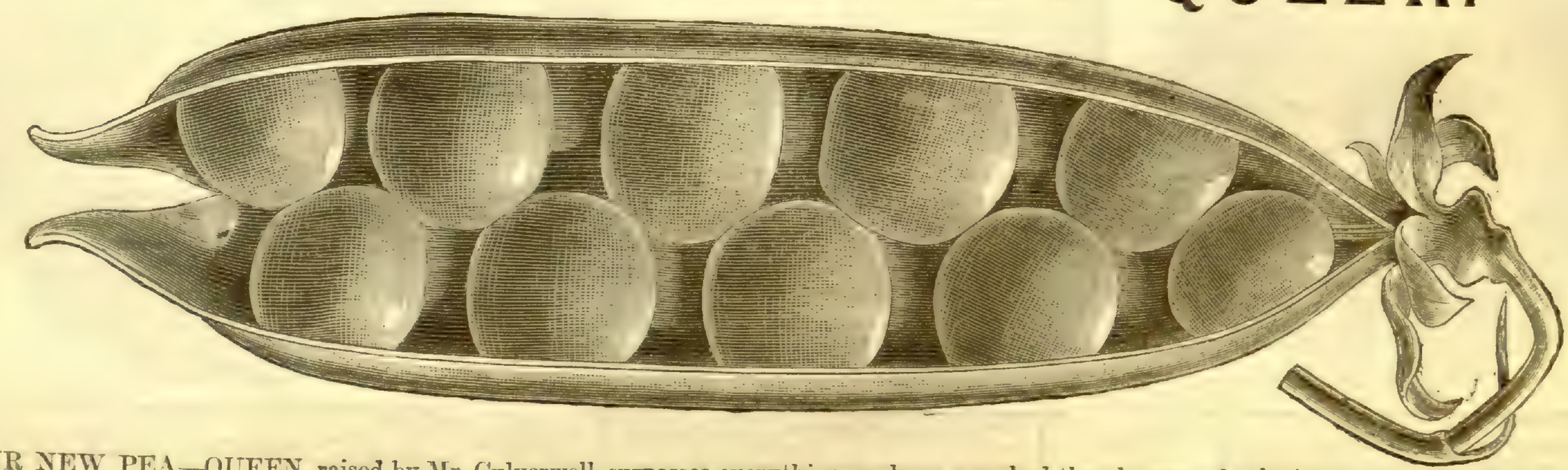

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OUR NEW PEA—QUEEN, raised by Mr. Culverwell, surpasses everything we have ever had the pleasure of submitting to our Customers, in habit, cropping qualities, colour and flavour; it is the perfection of a Pea for every purpose, and, by successive sowings, so continuous a crop can be obtained, that it will be almost unnecessary to cultivate any other variety.

The QUEEN is a Blue Wrinkled Marrow Pea, about 2 to 2½ feet in height, of a sturdy branching habit; it requires to be sown thinly, as the pods are produced from the very bottom of the plant to the top. The pods are large, green, slightly curved, and so filled with Peas that when opened it would appear impossible they could be contained in the pod. The Peas are large, oval, deep green, and of a delicious flavour when cooked. We feel we cannot say too much in its praise, and are confident our Customers will agree with us, it is the very best Pea ever sent out.

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Per Ounce 2/- *Post-free.*

"The Reading Exhibition Brussels Sprouts were the best I have ever seen. The stems were covered from top to bottom with large sprouts, very firm and solid, remarkably tender and delicate in flavour."—Mr. A. Shewan, *Gardener to the Rev. T. J. Nunns, Maidenhead.*

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Per Ounce 2/6 *Post-free.*

"We have been cutting your Michaelmas White Broccoli since the middle of September, and have a grand lot now" (October 23).—Mr. Thos. Fidler, *Gardener to W. T. Talbot Crosbie, Esq., Ardfert Abbey.*

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"Reading All Heart is of such exceptional excellence that it will, I am quite sure, become very popular in the gardens of all classes. For sowing in spring to turn in quickly I know of none to equal it. From a bed formed with plants raised from seed sown in April I have been able to cut first-class heads in July. H. Gillett."—*Gardeners' Magazine, March 28.*

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"Your Early Gem Carrot is superb. I have plenty of them 9 and 10 inches round and 7 inches long. I have never been able to grow Carrots on this ground before."—Mr. W. Turner, *Gardener to F. Francis, Esq., East Molesey Court.*

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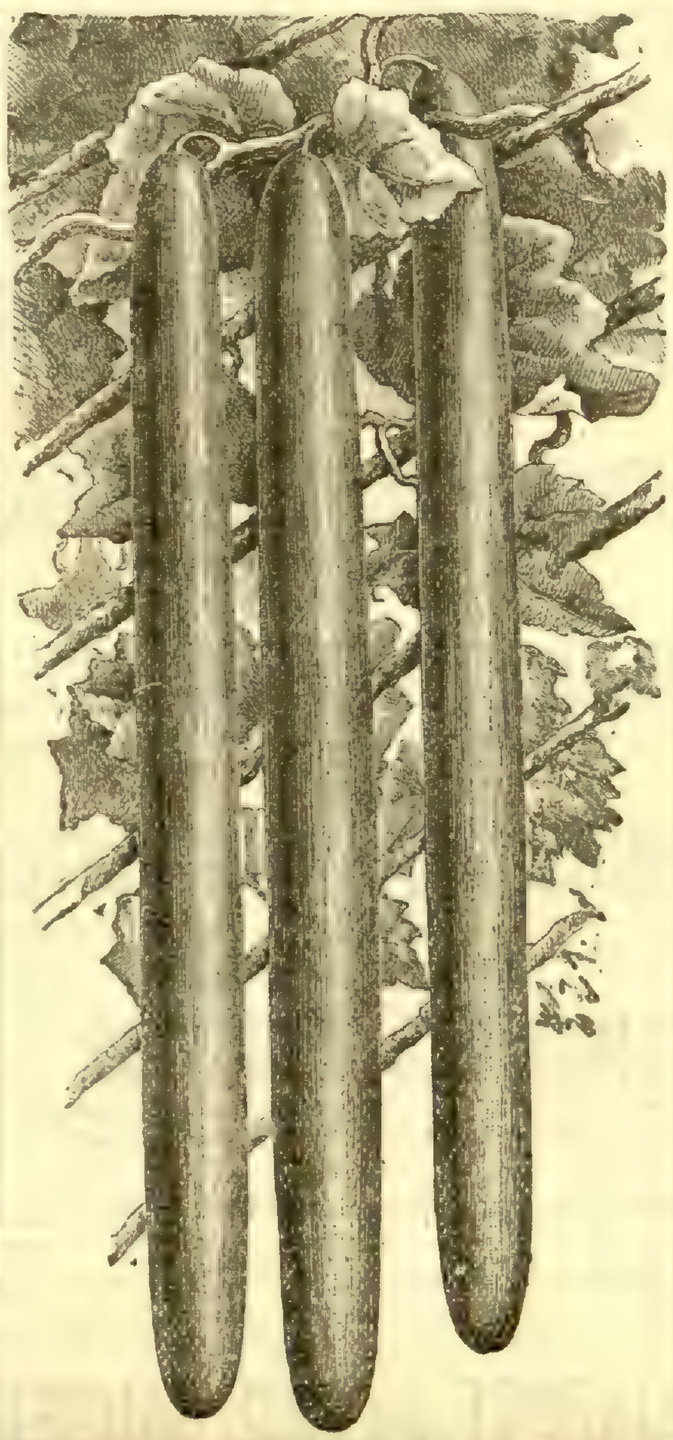

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Per Packet, 2/6 *and* 1/6, *post-free.*

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"An excellent variety. It is, as its name implies, a gem amongst white varieties, and should be grown in gardens large and small alike where early Celery is desirable. . . . Notwithstanding the unfavourable season, not one plant has 'bolted' or failed in any way, and we commenced digging the 1st of October. The best Celery, my employer says, he has ever tasted.—B., Hants."—*Journal of Horticulture, November 5, 1885.*

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Per Packet 2/6 *Post-free.*

This variety was selected from "Sutton's Improved Reading," some six years ago, and since then has been constantly improved by re-selection of the finest types. It is globular in shape, grows to a large size, very solid, and mild in flavour. Valuable for exhibition.

SUTTON'S New Pea "ROYAL JUBILEE."

Per Pint 5/-

"Exceptionally good. Possesses a robust constitution, is a heavy cropper, and the pods are closely packed with fine sweet Peas. Especially to be recommended for the amateur's garden."—Mr. W. Iggulden, *Gardener to the Rt. Hon. the Earl of Cork and Orrery.*

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Per Packet 1/6 *Post-free.*

"Sutton's Reading Perfection Tomato is the best that has come under my notice. It was awarded First Prize at the Royal Horticultural Society, Aberdeen, in July, and First and Second Prizes in September. The First Prize lot (6 fruits) were very handsome, and weighed 13 ounces each."—Mr. Geo. Donaldson, *Gardener to the Rt. Hon. the Earl of Kintore.*

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GENUINE ONLY DIRECT FROM READING.

SUTTON'S SUPERB STRAIN OF CINERARIA.

"I obtained a packet of Cineraria seed of you last year, and the plants are real beauties. I never saw such flowers. Very many of them are over 2 inches in diameter, splendidly shaped, and rich in colour."—Mr. H. E. Jukes, *Gardener to D. V. Stewart, Esq., Eccles Hold Road.*

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Price 5/- and 2/6 per packet, post-free.

"The Cineraria seed you supplied me with last reason is the finest I ever had, and I have been a grower for thirty-five years. Some of the plants measure 34 inches over the foliage, and 27 inches over the head of flowers. They have been much admired."—Mr. H. Ellis, *Gardener to A. Crewdson, Esq., Springfield.*

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STANDARDS	... from	15*s.*	doz.
DWARF do.	... ,,	10*s.*	,,
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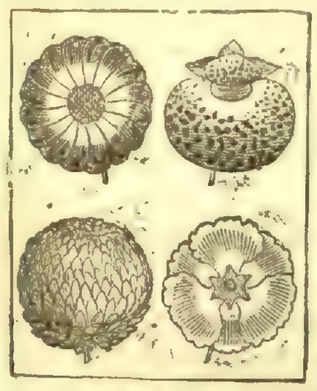

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BY THE EXECUTIVE COUNCIL OF THE

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CHRYSANTHEMUMS: a carefully revised edition of this catalogue, which included every Chrysanthemum worth growing, and a number of new ones. It extends to twenty pages, divided between the following sections:—Early or Summer flowering, Reflexed, Incurved, Japanese, Anemone-flowered, Pompons, and Singles. This catalogue is embellished with a "litho" of the new yellow late Japanese Chrysanthemum; this variety is the best late yellow variety in cultivation for cutting.

TREE and HERBACEOUS PÆONIES. A separate catalogue of these is now published, my collection of which may fairly claim to be a most complete one. I have a fine collection of Tree varieties—about forty sorts, certainly the best varieties grown. The plants are all good stuff, established in pots. Herbaceous varieties, both Double and Single, are grown extensively by me; all the varieties are fully described in this catalogue.

HARDY CLIMBERS, ORNAMENTAL SHRUBS, NEW FRUITS, ROSES, &c. Amongst Climbers are included Clematis, Jasmines, Ampelopsis, Wistarias, splendid specimen Magnolias, Passifloras, &c. The Fruit portion consists of Blackberries and other modern fruits.

THOMAS S. WARE,

HALE FARM NURSERIES,

TOTTENHAM, LONDON.

As a Supplement to the "GARDENERS' CHRONICLE" for next week, Feb. 26, will be published an Ink-Photograph of A PLANTATION OF "TARO" IN A CHINESE VILLAGE.

THE

Gardeners' Chronicle.

SATURDAY, FEBRUARY 19, 1887.

ALTON TOWERS.

[SEE SUPPLEMENTARY SHEET.]

AMONG the stately homes of England this summer residence of the Earls of Shrewsbury is one of the most beautiful. The chief seat of the family had been at Lower Heythrop, Oxfordshire, till Charles, the fifteenth Earl, a hundred years ago, discovered this site, highly placed among the glens and streams of Staffordshire, and commanding many a distant view. He built a house here, which his nephew and successor subsequently enlarged, and one might say expanded, for it covers an immense area, its lateral expansion having been greater than it should have been. Undoubtedly Alton Towers has high merits as well as a lofty position. It has a well-proportioned chapel, a noble baronial dining room, a great conservatory in the house, and a "lovers' corner" in the drawing-room. But the house is singularly extravagant in its architectural features, disproportioned and inconvenient, and the gardens as Earl John left them when he passed to the Elysian Fields in 1856 were an outrage upon Nature.

A critic should bear in mind the story of the two legs, one singularly handsome, while the other was deformed; and that their owner always noted that the best sort of people expended their regards upon his best leg, and *vice versâ*. But although a critic should be charitable, the readers of this sketch look for accuracy of description, or, at any rate, for discrimination and something approaching to fidelity. Mr. Loudon himself performed a task which a horticultural writer could hardly avoid, by describing Alton Towers as "one of the most singular anomalies to be met with among the country residences of Britain, or, perhaps, of any other part of the world. An immense pile of buildings, by way of house, with a magnificent conservatory and chapel, but with scarcely a habitable room; a lofty prospect-tower, not built on the highest point of the grounds; bridges without water underneath; ponds and lakes on the tops of the hills; a quadrangular pile of stabling in the midst of the pleasure grounds; and, what may be said to have eclipsed—and, still to eclipse—everything else,

*

a valley naturally in a high degree romantic, with wood, water, and rocks, filled with works of the highest degree of art in architecture and gardening."

The extravagances which Mr. Loudon referred to were commenced in 1812, but besides the temples and pagodas and curious imitations which seem so inappropriate as ornaments to a wild glen, his lordship most happily conceived the idea of adding the adornment of timber. He commenced the building of the Towers which stand at the head of the glen and a little removed from it, and left their completion to his successor, but he finished the plantations himself. Mr. Rabone, who manages the gardens as well as the estate of 12,000 acres, informs me that the extent of the woods is about 2000 acres. They cover the heights and fringe the vales. As the railway brings you up the valley of the Churnet the stream and the road running side by side, the woods tell their own tale. "Here is an estate," you say to yourself, "which some great planter must have owned." You alight at Alton station in a narrow valley, with a village scattered about and steep declivities on either side. On the edge of one of these, on a wooded cliff, is the ruined stronghold of the De Verduns and Furnivals, ancestors of the Talbots, with another interesting pile designed by Pugin, and forming part of an extensive establishment projected by Earl John, and including schools, a nunnery, a hospital for decayed priests, and a chapel. The founder lies now in the chapel with others of his name, including Bertram, the last Roman Catholic Earl of Shrewsbury, who died in 1856, leaving a disputed succession, which was decided in the House of Lords two years later in favour of Earl Talbot of Ingestre, founder of the new *régime*, and a Protestant.

Returning to the estate and its timber and gardens, the ascent to Alton Towers commences close to the station, and is somewhat steep for the coach-and-four which the present Earl of Shrewsbury and Talbot is fond of driving. Passing immediately through the gates by a lodge of Pugin's, bearing the sculptured arms of the family, which are interesting in heraldry from the long unbroken descent, and the numerous quarterings and alliances with noble families, you find yourself driving through woods ascending to the house a mile distant, or taking a zigzag way by a footpath among sandstone rocks, under the precarious-looking "Hanging Rock," a black walk by night, but still cheerful by daylight, and most pleasantly wooded. Old men still survive who were engaged in planting the trees hereabouts, and who remember the present site of the woods and the lovely glen itself, which then formed part of a poor bare rabbit warren. The successors of Earl Charles, as well as a grateful and numerous public, who enjoy free admission to this beautiful place, have reason to thank him for his work. The deformed leg need not longer trouble the critic, since the eccentricities of the builder have been at length concealed, summer and winter, by the evergreens and timber of the planter. The leg that we will now examine is one of the handsomest in the world, and the old Earl, whose busy reign extended from 1787 to 1827, thoroughly deserves the inscription on his bust placed at the head of the glen, and sheltered in a "temple" designed from the choragic monument of Lysicrates at Athens—"He made the desert smile."

The sorts of timber trees were well chosen. They consist generally of Scotch and Spruce Firs, Beech, Oak, and Larch. The Larches have grown admirably, and have measured 100 cubic feet of timber at 75 years' growth. A flag-staff for the Duke of Sutherland was cut in the plantations measuring 95 feet in length. The drives through the woods and plantations and ornamental part of the estate measure 23 miles in length. The estate extends for a distance of 8 miles through the valley of the Churnet, from Rocester through Alton and Oakamore, the last being another deep-lying station, and the one from which the Weaver Hills and the terminal point of the pennine range are most conveniently reached. The great rocks of this picturesque locality are those of the New Red Sandstone, and the house of towers and turrets, of wings one room deep, and of objectionable modern Gothic style—but let us not remember the deformed leg—the airy, dreamy house which shows so well in the distance, boasting as it well may a noble site, was built of excellent enduring stone of this formation. Putting the best leg foremost again, Alton, or Alveton as it is sometimes written, must be a healthy spot, as one would suppose, from its dryness, and the facilities of drainage which a high site must possess, and accordingly we find that the people live long. Lord and Lady Shrewsbury lately entertained seventy-two old folk whose combined ages were 4950 years, the average age of each being seventy years. In this entertainment, which cheered the lives of threescore and twelve simple village people in the winter of their old age, we again perceive the handsome leg free from the deformity which social entertainments in great towns too often exhibit.

The area of the pleasure ground, gardens, and shrubberies, is 150 acres, including about 60 acres in the glen where the two legs, as already explained, are intertwined.

In the course of our walk we ascended Mount Etna, a bold prominence above the village, with a most pleasing view of the river winding its way in the deep valley below, and of the buildings reared on the opposite cliff, on the edge of the precipice like a castle on the Rhine. In descending from one of the upper levels to that of "the cascade," we passed down Jacob's Ladder of a hundred steps. There is much that is artificial here, including the Dutch garden with an imitation of the Druidical circle of Stonehenge in its rear, and a statue of Prometheus in front, with a conservatory grouped with this strange mixture of Gothic, classic, and Batavian mementos. Steps lead up to the compartment containing these incongruities, and in a border below, which forms its fringe, Mr. Rabone had planted long lines of single Dahlias and other plants.

There are beautiful views from many points in these high grounds—that from the Prospect Tower, which stands in the grounds apart from the house, commanding a very wide, delightful landscape, the land of the Trent and Dove, and many another stream which Isaac Walton was familiar with. Around this tower, too, is spread the rich pastoral district which "Derby" cheese, much of which is made in Staffordshire, and a good deal of it on pastures newly formed, which have carpeted with green most of the marls of the New Red Sandstone, while the hard rocks of the same formation often rise in hills bruptly from the plain.

The best view of the altered glen and of its gardens, fountains, and fantastic buildings, is obtained from the end of the terrace on the east side of the house, where we are high enough to overlook all screens and obstructions so as to obtain a clear view of the Weaver Hills beyond. It was rather late in the year, at the time of my visit, to witness the best effects of geometric bedding and bright colouring, but I could not overlook the choice bit of gardening enclosed by the walls and wings of the house, and known as "Her Ladyship's Garden." The sweet taste for flowers prevails here, and perhaps I may venture to say without too great trespass upon private ground, that my connection with gardening was recognised by admission to two rooms, a boudoir and a private room, which are both exquisitely decorated with living plants, especially the arboreal and the blue-tinted Selaginellas. The fairies seemed to have been engaged here, and no scene in *Midsummer Night's Dream*, with Oberon and Titania in presence, could be fairer.

I ought to have said, in passing through the gardens, that the extremely pretty cottage on one of the upper levels of the glen is known as the Harper's Cottage, since it was built for an old retainer who played the harp in the entrance hall. *H. E.*

Plants New or Noteworthy.

RESTREPIA PANDURATA, *n. sp.**

A very elegant Restrepia, imported by Mr. F. Sander. It flowered first in September, 1884. I was so struck by the extraordinary shape of the lip that I did not dare describe it until I had seen more. More material was sent me several times by Herr Oberhofgärtner H. Wendland, of Herrenhausen, with whom I saw the plant lately. It had not been possible to get it at rest. I have it now again, and feel quite persuaded it is what we call an excellent species. It may simply be described a fine and strong Restrepia guttulata, with a totally distinct pandurate lip, the anterior blade of which is very broad transversely oblong, covered with warts, and with some hairs, whitish, covered with numerous port-wine colour spots. The two orange spots at the base or foot of column are also found in this elegant thing. *H. G. Rchb. f.*

Phalænopsis Foerstermanii, *n. sp.*†

A small, modest, and yet very elegant species, a discovery of Mr. Foersterman, that has just flowered with Mr. F. Sander. It is one of those very few species with a tridentate anterior lacinia to the lip. It is immediately understood by its great peculiarity, a deep, upright longitudinal keel on the mid-lacinia which is fimbriate at its superior margin.

Roots even, rounded, and a little ancipitous. Leaf cuneate obovate, unequally bidentate at the apex. Peduncle two-edged. Bract triangular-cuneate. Flower, one of the small ones, as in Phalænopsis Valentini maculata; ground colour white. Sepals and tepals cuneate lanceolate, with very thin, now forked, now hieroglyphic, brown transverse lines inside. Lateral laciniæ of the lip square oblong, as in all the allied species: hence a little recurved, scimitar-shaped, retuse, with a retrorse bristle, and an oblique keel outside; a yellow callus on the inner side of each. Mid-lacinia tridentate at the apex, mid-teeth longer, broader, of lightest yellow. A bidentate depressed keel on the disc at the base of the lip.

This is a neat novelty, which is dedicated with great satisfaction to Mr. Fosterman, who has enriched Mr. F. Sander's, and hence the outside world's stores with so many fine things. *H. G. Rchb. f.*

* *Restrepia pandurata*, n. sp.—Aff. Restrepiæ guttulatæ, Lindl.: labelli lamina antice pandurata, isthmo antice valde constricto in laminam quadratam obtusangulam latiorem pilosulam callosam expanso.—Spithamæa seu minor. Folium usque quatuor pollices longum, usque plus duos latum. Flos exacte Restrepiæ guttulatæ, labellum tamen toto cœlo diversum. Imp. ex c. Sander. *H. G. Rchb. f.*

† *Phalænopsis Foerstermanii*, n. sp.—Aff. Phalænopsis Valentini: radicibus lævibus rotundato ancipitibus (biconvexis); foliis cuneato obovatis apice inæqualiter obscureque bidentatis; pedunculo ancipiti; bracteis triangulo carinatis; sepalis tepalisque cuneato lanceis, labelli tripartiti partitionibus lateralibus curvulis ligulatis apice retuso retrorsum aristatis, extus carinatis, partitione mediana ligulata apice tridentata, carina longitudinali superne fimbriata, carina depressa apice bidentata in basi, callo in medio lacinia laterali utrinque. Flores albi striatis brunneis transversis. Calli in laciniis lateralibus ac apex partitionis anticæ flavi. *H. G. Rchb. f.*

Nursery Notes.

MESSRS. HOOPER & CO.'S, TWICKENHAM.

We saw a fine lot of winter-flowering Tree Carnations here recently. As in many other fine collections the maggot has made its unwelcome appearance in the nursery, and Mr. J. Bruckhaus, the manager, has devised a plan for its extermination. He resorted to fumigating the plants in order to kill the pests. Will he be successful? Among the best varieties of Carnations are that capital free pink-flowered and invaluable variety, Miss Joliffe, represented by a large quantity; Mdlle. Carle, pure white, fine habit, free—perhaps one of the best in cultivation. Two good deep crimson-coloured flowers are Dr. Raymond and Pilatal. Jean Sisley, dwarf and free, creamy-white, flaked with reddish-scarlet; Raspail, fine deep scarlet; Souvenir de la Bruyère, rich carmine, of robust habit; Belle Lyonaise, lemon ground, flaked with deep rose; Claude Comte, also a lemon ground, flushed with magenta-red; Zouave, a plant of robust habit, and presenting novelty in colour, its flowers being white, striped with scarlet. A very fine bloomer is Brisson, of dwarf habit, its white flowers being flaked rose-scarlet. Another free flowering sort is Madame Masicault, flowers palish yellow, flushed rose; a beautiful clear rose is Irma; and one of the best for winter work, C. A. Hooper, a fine yellow.

Amongst noteworthy miscellaneous subjects may be mentioned Palms, which are grown in large quantities in 48's for market. Amongst what may be called cool kinds, and admirably adapted for table decoration, may be mentioned Areca lutescens, Corypha australis, Latania borbonica, the indispensable Cocos Weddelliana, Seaforthia elegans, Ptychosperma Alexandræ, Phœnix rupicola, Thrinax grandis: this has been well described as a miniature Latania borbonica. Crotons gave a brightness to the surroundings—Evansianus, and what may be called its companion, Lord Derby, being represented by fine plants, as were also Disraeli, Mortii, rosea-picta, and various other well known and popular sorts.

Ferns useful for vase and table work are grown in quantity, Adiantum cuneatum and A. mundulum being especially prominent. Speaking of plants for table work, we noticed a grand lot of a subject so well adapted by its graceful habit for this purpose—Aralia Veitchii. Aralia Veitchii gracillima is another very suitable table plant. The true Dracæna rubra, a valuable market plant, was noted.

It has been stated that Choisya ternata will not force; the fallaciousness of this statement is demonstrated at Twickenham, where it is forced with success. Its sweetly-scented flowers, &c., so much resembling Orange blossoms, make it very useful, and very serviceable for bouquets. Irises, Pæonies, and a good collection of herbaceous plants are grown, but on this nothing can of course be said just now. *B.*

Orchids in Flower at St. Albans.

The flowering season at Messrs. F. Sander & Co.'s great Orchid establishment may now be said to have commenced in earnest, the large bank of Cattleya Percivaliana in the main Cattleya-house being rapidly replaced by many hundreds of flowers of good forms of Cattleya Trianæ. Among the bewildering show of these, we noted some very excellent and perfect shaped flowers with dark maroon labellum, and every conceivable shade between them and the pure white form, of which there was a grand example in bloom. Also very prominent by its distinct marking is a good plant of the C. T. Ernesti of Mr. R. J. Measures; the plant at St. Albans having the violet-crimson on the tips of the petals so prominent as to give an idea of three labellums. The artistic rockeries at each end of this house, which are planted with Orchids, exhibit them in the finest condition mingled with Ferns and coloured foliage plants. Here a sturdy Cymbidium eburneum has a dozen spikes. Neottia maculata picta is well bloomed; some large masses of Lælia anceps and other Orchids are in flower, and hanging overhead are some baskets of Lycaste Skinneri with about a score blooms each; and a quantity of a very fine Oncidium of the Cavendishianum section with grand spikes of yellow flowers spotted with brownish-crimson; it is doubtless the O. pachyphyllum of Hooker, *Bot. Mag.*, t. 3807, and is certainly a far finer thing than the ordinary O. Cavendishianum.

Among the Mexican Orchids those two fine introductions—L. anceps Sanderiana and L. a. Stella—are in bud, a new form with L. a. Veitchi shape and L. a. Hilli colour in bloom, as well as large numbers of the type in every shade. Many varieties of the fragrant L. albida, too, are in bloom, as well as many hundreds of Odontoglossum Rossi majus and O. Cervantesi. Other finely bloomed plants in large batches are the varieties of Cœlogyne cristata, of which the St. Albans variety maxima is the best; large quantities of Lycaste Skinneri, including the best pure white; a fine importation of some extraordinary varieties of Cypripedium insigne, grand in themselves and destined to introduce new features into the progeny of the same crosses in which the old C. insigne has already been used; a good display of fresh imported Dendrobium nobile, showing great variety; and in bud a fine batch of Oncidium hastatum var. Roezlii, and countless numbers of the fine strain of O. Alexandræ, for which the firm is noted. Also in flower more or less in quantity are Cypripedium Sedeni superbum, a rich dark crimson form; C. grande, C. callosum, C. venustum spectabile, C. insigne violaceo-punctatum, C. barbatum biflorum, C. Salieri, and many others; Oncidium nanum, O. ornithorhynchum, Dendrobium Leechianum, Lælia harpophylla, L. elegans, like Turneri, but with cream-coloured sepals and petals; Odontoglossum odoratum, O. Sanderianum, O. purum, O. Oerstedi, O. Wallisii, O. Roezlii, O. blandum, some Vandas, Cymbidium sinense, Eulophia scripta, Phaius Reichenbachiana, Calanthe masuca, C. Sanderiana, C. vestita gigantea, and many Restrepias, Masdevallias, and Phalænopsis—the last named, like most other plants which are not generally well done in collections, being completely mastered at St. Albans.

TOBACCO CULTURE.

The Messrs. W. D. & H. O. Wills have offered a prize of £50 for the best crop of Tobacco grown in Great Britain, and a similar prize for the best crop grown in the colonies this coming season. Will you be kind enough to make this offer known as widely as you can, so that all can have a chance to grow "Jubilee Tobacco"? Herewith I enclose the promised estimate of cost of growing, and probable results. I daresay some of those who experimented last year will take exception to it. But never mind—it is based upon a long and practical experience, and a perfect familiarity with all the details. There were many causes for the great expense of the experiments of last year, for instance, the cost of plants was in some instances ten times what it ought to have been, and there was a want of the proper means of harvesting and curing, and a lack of practical knowledge of the art of curing, &c. All these tended to make the experiments more costly than they otherwise would have been. The problem was, however, solved as to whether Tobacco of useful quality can be grown in this country. Now I contend the experiments should be continued on a larger scale to see if we can grow it at a profit. I believe we can, and to make up for being handicapped with a heavy burden of rent, rates, and tithes, &c., which the foreigner does not have to pay, we have the advantage of being immediately on a great market; consequently no expense is incurred for hogsheads, packing, or transit across the Atlantic, no expense for worming, which in some countries forms from 20 to 30 per cent. of the whole amount of labour on the crop, and although I have counted upon an average crop of 1000 lb. per acre only, I have every reason to believe that our moist climate will produce a greater weight per acre; and if the crop is good enough, and cured as bright Tobacco, a much better price may be counted on.

An Approximate Estimate of the Cost of Growing an Acre of Tobacco.

Rent, 40s.; tithes, rates, and taxes, 14s. ...	£2	14	0
5000 plants, at 6s. per thousand	1	10	0
Planting	5	0	0
Fifteen loads farmyard manure, at 4s.	3	0	0
Spreading	0	1	6
5 cwt. guano, at £12 per ton...	3	0	0
Three ploughings	1	10	0
Ridging and hilling by hand...	0	9	0
Two harrowings	0	2	6
Three hand-hoeings	0	15	0
Three horse-hoeings	0	6	0
Topping and suckering	0	15	0
Harvesting, including sticks...	0	12	6
Labour fixing scaffolding in barn	0	5	0
Curing.—Labour cutting up wood... ...	0	10	0
One man one week attending fires ...	0	15	0
Superintendence, packing, and cases	1	0	0
Stripping and sorting, &c.—say, 1000 lb, at 8s. per 100 lb.	4	0	0
Total...	£21	10	6

Results.—

500 lb. Tobacco, at 8d. per lb.	£16	13	4			
400 lb. ,, at 6d. ,,	10	0	0			
100 lb. ,, at 4d. ,,	1	13	4			
1000 lb.	£28	6	8			
Profit				6	16	2
				£28	6	8

To this may be added also something for the unexhausted value of the manure left in the soil, as the land would be in excellent condition for a cereal crop.

In the estimate of cost I have put down 15s. for one man one week attending fires, at the same time he could as well attend the curing of 3 to 5 acres; and, again, I have to put the cost of stripping and sorting at just double what I paid in Virginia, although wages are about the same there as in this country, and this I have done because our hands have yet to be taught and trained to be as expert as the negroes of Virginia. There is no reason in the world to prevent us growing a large proportion of our own Tobacco, providing the Government will relax the duty. *Old Virginia.*

Cultural Memoranda.

MARSH MARIGOLD (CALTHA PALUSTRIS).

Every one knows and admires the splendours of this riverside weed, but not every gardener knows of its value for forcing purposes. For this purpose M. Carrière recommends the plants to be divided in early spring, planted out in rich moist soil, in the shade, the plants 12—14 inches apart, and kept copiously watered. As winter approaches the plants are lifted and potted, and placed in cold frames with but little water. Early in January the plants are removed to a warm greenhouse, where the temperature may range from 15°—30° C. (59°—86° F.) The plants should be kept very moist. The first batch can thus be brought into a flowering state in about a fortnight; successive batches demand a shorter time in heat. The double-flowered variety should be chosen by preference.

Dracænas.

It may perhaps be welcome to some of your readers to learn another way of propagating Dracænas, than that recently mentioned which I consider much superior, and a little more speedy as well. It is a well known fact that Dracæna heads are very apt to drop their leaves, especially if the heads are large; this, however, will never be the case where this very simple and cheap way of doing them has been practised. The heads are cut just below the lowest leaves, then tied together with a piece of raffia, and afterwards inserted singly in small bottles, just large enough to give room to the lowest inch of the cutting. In each bottle should be placed a small piece of charcoal to keep the water sweet. After having been filled up with tepid water they are placed under glass in the propagating pit, and the temperature should not be allowed to go below 75°. This treatment will cause them to send

out a great number of small roots in the course of nine or ten days, and as soon as they have attained a length of half an inch the cuttings must be potted in a light open soil. I have tried this way of propagating even with very large heads, and always with great satisfaction. Even D. Goldieana has taken in this way, though it was rather slow. *P. C. F. Borregaard, Aarhuus, Denmark.*

Lily of the Valley.

The first thing of importance is to obtain well ripened crowns. The best way of forcing them is to have a pit with a centre bed, in the middle of which there are a flow and a return pipe, covered by a floor of pantiles. By this means we are enabled to obtain the necessary bottom-heat. The tiles are covered with moss, thoroughly moistened; then the boxes, filled with crowns, are put on the tiles. My boxes are about 3½ inches deep, and about 8 to 10 wide. I generally plunge sixty to seventy crowns in a box in the first part of the season. I have always found that when the boxes of crowns are placed out-of-doors and get a night's frost on them, they start much better. It is a matter of no importance what materials the crowns are planted in—cocoa-nut fibre refuse, ashes, &c., are equally good, as there is no root-action. I usually shake a little moss over the crowns when they are placed in the pit for forcing; then the boards are put on the top of the pit, and may be used as a stage; within this pit there should be total darkness. As a matter of routine I always plunge some fresh crowns every night as soon as we have commenced forcing, so that the succession shall be uninterrupted. The temperature of the forcing bed is kept at from 80° to 85°, which should not be exceeded. For safety, always have a thermometer plunged in the moss in the pit, and see that the boxes do not want for water; sprinkle them now and again. Let the flower-spikes get well up before taking them out of the pit, and be sure the temperature of the house the crowns are placed in is not too low, as it checks them. When they have been exposed to the light for a day or two, and the spikes become accustomed to light and air, the buds begin to develope, which they will do much better than if left in the pit too long. *G. A., The Gardens, Southery, Earlswood, Redhill.*

PLANTS AND PRODUCTS OF ICELAND.

In an interesting article in your paper (pp. 793, 810, of your last volume) on the "Flora of Iceland," by Mr. Buysman, I am surprised that no mention is made of any Ferns having been found there. Although not a botanist, I have, during repeated visits to that country, made long journeys, and collected a large number of the plants indigenous to the island.

In 1885 I brought home a box filled with living plants, amongst which were several Ferns now growing in my garden, which were identified by Mr. Lindsay, of the Royal Botanic Gardens, Edinburgh, as Cystopteris fragilis (the Bladder Fern). One of these I found growing in a rocky cleft at the opening of the caves of Surtshellir, and another in the cleft of a sandbank in Reykjadalr, about 20 or 25 miles south-west of the first find.

In a hole near the parsonage at Thingvalla (south-west of Iceland), in 1880, I came on six or eight plants of Ferns, luxuriant in September, and have no doubt they were the same species; but I have not seen any others in a few thousand miles journeying in that country. In connection with the more prominent flowering plants mentioned in the article referred to it is also not uninteresting to mention that the Dog Violet (Viola canina) is a thing of beauty in the North of Iceland, close on the arctic circle. I have seen it be-gem the mountain slopes in Blanda-dalr 1000 feet above sea-level in great profusion, with a few plants of the Erigeron alpinum intermixed with them.

I cannot but think that climate has something to do with the permanent dwarfing of the Birch forests (Skogr). It is quite true that these forests are reported to have been wasted centuries ago, but the very sparse population of 70,000 in an area of 39,000 square miles (about a fourth larger than Ireland) could hardly have kept them down, seeing that there are very generally only one or two dwellings within many miles of these forests. Has not the change in climate, preventing the growth of corn where corn was known once to have grown, prevented the reproduction of the Birch to something better than 15 feet high?—which, when it does occur, is only the thickness of a man's wrist, and does not deserve the name of a tree, as the solitary abortion waves weakly above the surrounding scrub, which scrub, however, is a beautiful relief to the arid wastes and lava streams around.

The famous trees at Akureyri (Sorbus aucuparia) really are trees, at the height given (25 feet), and of them the natives are justly proud. Several smaller and younger trees of the same kind are to be found in this little northern capital, and also in the metropolis, Reykjavik, but always under shelter of dwellings.

Referring to the fossil flora, I do not see mentioned—or they do not have the prominence they deserve—the beds of Surturbrand, one of which is found in Isafjord, in the north-west, and another near Husavik, on Skjalfandalucht, in the north-east. It is a lignite of a brown colour, does not burn without a blast, and is said to be formed of the American Poplar—certainly not of any tree now known as a native of Iceland.

The statements as to plants used for food are quite correct, only they are of a past age, and of the period when Sir Joseph Banks, Dr. Hooker, and Una von Froil wrote in 1772, and on to a period beyond E. Henderson's travels, 1814-16, during which period whale and seal beef were eaten by the poorer classes, as also shark flesh. The first two have departed, and with them the horrible disease called leprosy, but really elephantiasis; but the last-mentioned is still eaten as a *bonne-bouche* by a very few well-to-do fine old crusted Conservatives. The better classes had their coffee more than a century ago, and it is now so universal that tea of Dryas octopetala is obsolete. Angelica root may still be used in times of scarcity, as also Melur (Elymus arenarius), but very rarely, imported Rye having taken their place.

The hairs of the bog Cotton are no longer required for wicks, as the whale, seal, and shark oil is too costly to burn in lamps, and is exported for manufacturing purposes; the paraffin lamp and oil are now cheaper, and universal.

An infusion of Achillea Millefolium is still used by some as a medicinal simple, and probably also as a salve as stated; but the bulk of the medicines in use are bought from the *apothek* once a year, when other provision is laid in.

Fig. 54.—Alton Towers. (see p. 243.)

Lichen islandicus, where plentiful, may still be used as ordinary food; but recently it was more valuable as an export to Europe as an article of invalid diet; and the annual gathering of the Fjallagras on the mountains was made a holiday of by families dwelling in tents *pro tem.*; but fashion changes in that as in other things, and Carrageen or Irish moss, an Alga, is ousting the lichen as a favourite with the faculty.

While the climate of Iceland is as rigorous as ever, the condition of the population has been considerably ameliorated, by the removal of the restrictions on trade, and largely by the enterprise of a Scotch firm, Messrs. R. & D. Slimon, Leith, who during the last sixteen or eighteen years have been large importers of ponies and sheep from Iceland, for which they pay in hard cash £30,000 to £40,000 per annum—an enormous boon to a people who twenty years ago hardly ever saw a dollar, but had only the current account of barter with the Danish merchant, and somehow or other it was too often on the wrong side for the Icelander. *James Wight.*

The Bulb Garden.

DAFFODIL ARD-RIGH *v.* PALLIDUS PRÆCOX AS MARKET FLOWERS.

Strange how the two varieties potted in October last should now be simultaneously in bloom. Last season the whole of the N. pallidus præcox flowered at Christmas. This year I ventured Irish-grown bulbs (one year) with the Irish King, and as I assumed that they would bloom together I did not think there would be much difference even when the latter were of Irish rearing; for this reason, that the foliage on both varieties was quite withered in the first week of June, 1886—a sure sign of maturity. We are aware that February is the earliest period at which collectors gather blooms on the Pyrenees, while here, in the south of Ireland, Ard-Righ flowers freely in the open—about Feb. 10. As we have had but little frost and very little snow up to the present time I have hope of very early results from plants in the open. Among Daffodils I have seen in a recent issue of a contemporary that in Hampshire beds of white Daffodils had 6 inches of frozen snow resting on them. This would be satisfactory, minus the frost, as a snow covering is rather beneficial, and would have the same happy effect on the bulbs as a down quilt on the human frame. But some white Daffodils will not stand much cold or wet unless in very dry positions, where there is perfect drainage. Some of the stronger brown-skinned naturalised Irish whites are very hardy, for instance Bishop Mann, Butterfly, Colleen Bawn, common Irish cernuus, &c.; but the silver-skinned or glaucous foliaged section, such as pallidus præcox, Leda, Minnie Warren, fastuosus minor (a better name than moschatus for the small white of the Pyrenees, to distinguish it from the large Dutch one), and indeed capax, which is a true silver-skinned variety, has a tendency to die out on cold wet soils, and succeeds better when grown in peaty or turfy stony soil—just what one finds at elevated positions on the mountains. I send you bulbs with blooms attached of a very early single Snowdrop, to prove the mildness of our climate. It has been taken from the open. Is it a variety, or only an instance of the early verdure of Erin? *William Baylor Hartland, Temple Hill, Cork.* [It was, so far as we could tell, hardly worth considering as a variety. Ed.]

Hartland's Irish King Daffodil (Ard-Righ).

I send you some blooms of this very early market flower. It was potted simultaneously with pallidus præcox and various others, including English bulbs of Barr's Yellow King, the latter being the same variety; yet the "Irish grown bulbs" are a month in advance of the latter—"neck and neck" with pallidus præcox, and fully a fortnight ahead of all others, including the famous Tenby Daffodil. By February 10 we commence to cut from the open, beginning again with Ard-Righ. The bulbs are fully ripe in June for removal and transplanting. The foliage is quite yellow in May, In the open the blooms are much finer and larger. The blooms forwarded were opening on January 11. *William Baylor Hartland.* [The flowers were fully open, unblemished, and are very desirable at this season. Ed.]

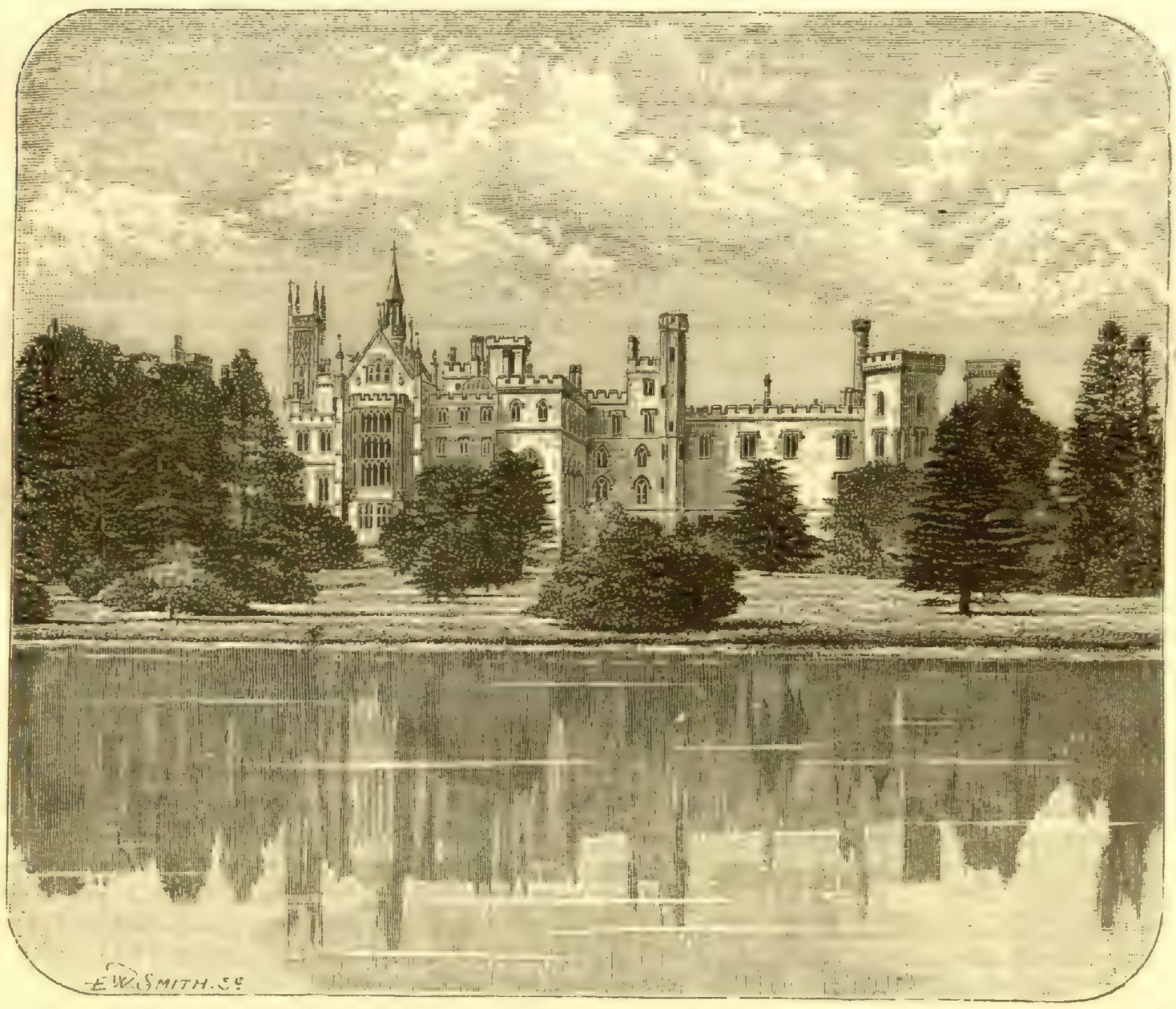

Fig. 55.—Alton Towers. (see p. 243.)

MANURING FRUIT TREES.

We have often noticed great waste of material and labour expended on fruit trees, and because no visible reward—by finer or more abundant produce—was experienced, the practice of surface-dressing was denounced as useless, and then abandoned. But the mistake was in the application of the manure, the feeding roots being far distant from the stems of the trees, and I need not say that these roots had no assistance rendered them whatever. In a large West of England orchard which we visited during last summer, manure in abundance was placed over the hard dry surface, in circular form 1½ foot wide, by the trunks of the large trees. The advice was copied from some horticultural journal, but certainly not to the letter, and it is because such work is often performed in such an unintelligent manner that the instructions so well given have been treated with contempt. Often manures scientifically prepared to meet the wants of fruit trees, vegetables, and flowers are denounced as being worthless because they have been misapplied.

Vines are frequently victims to barbarous treatment in the manner indicated. Borders which may have been well prepared with the best of material are long since vacated by the feeding roots, which may have gone out into the vegetable quarters, or into a hard road if such were near by. Cultivators may sometimes be seen treating such borders to their annual dose, or biennial supply of choice manure, solid and liquid, and at the same time all was waste—none could reach the feeders. The Vines gradually failed, disease became prevalent, and failure was certain. We have more than one such case in our mind's eye at present, where valuable applications are given which is utter waste. The hint given regarding the renovation of the Madresfield Vines may be taken by many who have long been helping (in vain) the roots of their Vines. Trace the feeders to their utmost limit, and good service may be then done by feeding them where they can consume their food.

Shrivelling is much complained of this season (we have a little of it), but attribute it to absence of moisture at the roots, or to a dry, hot atmosphere, or both at the same time. Our shrivelling is easily accounted for. The roots of some two Vines had grown up into the surfacing of manure in the inside border, and when damping the house was discontinued these roots were dried up. *Caledonian.*

Roses.

THE CLASSIFICATION OF EXHIBITION ROSES.

(Concluded from p. 210.)

Raising New Roses.—There is another point that we have to consider. I do not think that we are to take the *ipse dixit* of any raiser, that the parentage of a Rose is what he, honestly it may be, thinks it to be. The rule holds with all hybridising: two plants are crossed, but the progeny shows only the trace of one parent, and it is consequently concluded that the cross did not take, or that it has produced something quite different from either plant, showing either that other agents had been at work, or that the natural tendency of all hybrids to variation had asserted itself, and in this, as in other things,

"The best laid schemes o' mice and men
Gang oft agley."

We have had in your columns recently an instance of this delightful confusion. In a paper I wrote some months ago, I stated that we were having now brought out a race of Teas hardier and of better constitution than many of older date; this was questioned by one of your correspondents, who as an instance of it gave Lady Mary Fitzwilliam, which, although a most beautiful Rose, is also a bad grower. In reply to this, I, with perfect honesty, and no desire to give offence, stated that it was not a Tea Rose; forthwith Mr. Bennett accused me of mis-statement, but what are the facts? In his announcements of 1882, he divided the Roses to be sent out into three classes—Teas, hybrid Teas, and hybrid perpetuals. In which of these divisions is Lady Mary Fitzwilliam to be found? According to Mr. Bennett's latest views it ought to be in the first, but I found it in the second, under hybrid Teas; so I may ask where is the mis-statement? But I

am accused of another misrepresentation, because I said that Her Majesty was announced as a hybrid perpetual, and that it did not seem to bear out its character. I do not remember whether I said it was so called by Mr. Bennett, as I have not the papers by me, but he says I did, and that he never announced it at all. Well there is an old Latin adage, *Quod facit per alium facit per se*, and I must apply it here. Her Majesty was enveloped in mystery. She "came (was seen) and conquered," gained the National Rose Society's Medal, and was considered a grand Rose. Plants were exhibited, and some knowing ones thought they looked uncommonly like a summer Rose. She then disappeared. Her whereabouts was a mystery, until at last it was heard that she had been sold for a large sum to an American firm, and that the raiser had no plants to dispose of. Then we were told that an eminent English firm had become the sole agents for it in England. Shortly afterwards their advertisement appeared, and it was a perfectly honest one. It was called a hybrid perpetual, but the parentage was stated to be—Mabel Morrison, a hybrid perpetual, and Canari, a Tea. Other advertisements in course of time followed from other firms, in which it was styled a hybrid perpetual, but the parentage was not given, and I believe that most people who purchased it thought it was a true hybrid perpetual, and not one of the Cheshunt Hybrid or Reine Marie Henriette, or Lady Mary Fitzwilliam type. It would thus appear that when two Roses are crossed between a Tea and a hybrid perpetual, the raiser will designate one as a Tea and the other as a hybrid perpetual. In what I write now I am assuming that the Rose in question is what its raiser believes it to be—a cross between Canari and Mabel Morrison. I cannot help thinking that there has been some mistake here; either insects or the Rose itself have been beforehand and hybridised it with some other pollen. If I had been told it was a cross between Mabel Morrison and Paul Néron, I should have thought it much more likely. The impropriety of claiming Lady Mary Fitzwilliam as a Tea Rose, because it was the issue of a Tea and of a hybrid perpetual, cannot be better shown than by asking whether Her Majesty, which is said to be also the result of a cross between a Tea and hybrid perpetual, is also a Tea. Happily the National Rose Society have ruled otherwise. Imagine a box with one bloom of Her Majesty, another of Lady Mary Fitzwilliam, and then filled in with such Roses as we all recognise as Teas.

All this may seem the veriest trifling to some people, but it is better that such things should be discussed, so that exhibitors may not be led into mistakes, for assuredly if any exhibitor placed it in a box of Teas, he would be disqualified. I hope in all that I have written I have not mis-stated anything. My desire is to make matters clear, and this can never be done by concealing facts, although they may be unpalatable. *Wild Rose.*

THE FLOWER GARDEN.

LAWNS

Should be well swept and rolled as often as time will allow. Where turfing has still to be done no time should be lost in getting it concluded. If delayed till March much watering may be necessary to keep it alive until it takes root. If time will permit the coarser sorts of grass, Plantains and other weeds should be removed. Now is a good time for commencing the clearing of lawns of moss and top-dressing them.

Trees, &c.

Deciduous trees and shrubs should be planted forthwith: it is not safe to plant such after the sap flows. Evergreen trees may be planted to a much later period with safety. Deep planting is a mistake. Do not raise the soil higher over the roots than it has previously been, as the roots are thereby shut off from the air. See that all newly planted trees are secure from being rocked by the wind. The taller trees may require five or six wires made fast to the stem about 10 or 12 feet from the ground, the other ends being made fast to pegs driven into the ground at a distance of 5 or 6 feet from the bole.

Sowing.

A sowing of Sweet Peas should now be made in turfs, pots, or boxes, in an intermediate temperature, to plant out-of-doors. When a couple of inches high, after being hardened off, another sowing should be made out-of-doors. Rats, mice, and birds are generally very troublesome when Peas are "chipping" the ground: I have found red-lead powder a capital deterrent. A sharp look-out should be kept for these animals on Crocus and Tulip beds. Cannas should now be sown. They come up very irregularly; some will germinate in a few weeks, while others will lie dormant for months. A good plan is to soak the seeds in tepid water for twenty-four hours previous to sowing. Seeds of Ricinus, Aralias, Grevillea, Cineraria maritima, Centaurea candidissima, Acacia lophantha, Chamæpeuce diacantha, Lobelia, Pyrethrum, Verbena, &c., should also be sown.

Carnations, Auriculas, &c.

Carnations, Picotees, Pinks, &c., should now receive all the air possible. The surfaces of the pots should be kept constantly stirred to keep them sweet. Every particle of decayed foliage should be removed, and a surface-dressing of well-dried cow-dung rubbed through a ¼-inch riddle, mixed with double its bulk of good loam.

Auriculas

should be similarly treated, but the compost should have a little sand, and less loam. *W. M. Baillie, Luton Hoo.*

FORESTRY.

NURSERY WORK.

Immediately that a border has become vacant it should be trenched or dug deeply over, well manured either with nursery compost or thoroughly decomposed farmyard manure, and again refilled with seedling plants. Where, however, there is nursery ground to spare the empty borders should be well manured and put under green crop for a season, thus enriching the soil, clearing it of weeds, and leaving it in good condition for planting with seedling forest trees. Another advantage is that the manure is not applied directly to the forest trees, to the majority of which it is injurious.

Seedling Rhododendrons, or other plants of small stature, should not be lined from the seed beds at present, but left alone until the chances of frost are past. Frost, if at all severe, raises the young plants out of the ground, and injures the rootlets to such an extent that the plants take some time to recover. Give plenty of room to young growing plants when lining them out, spread out their roots around the stems, and do not plant too deeply. Layering of old stools to get up speedily a stock of certain plants may now be engaged in, the soil around the stools being previously prepared by digging and applying some free sandy loam, thus inducing the quick formation of rootlets. The new plants should afterwards be planted out in rich, free soil for a year at least before disposed of finally.

Rhododendrons from Seed.

It is perhaps not generally known that Rhododendrons are, amongst our commonly cultivated plants, about the easiest to raise from seeds. Where the soil of a plantation is largely composed of peat, and a few standard Rhododendrons are planted about it, it is no uncommon thing to see beds containing seedlings scattered all about; but where from the deepness of the soil this cannot take place, it is advisable to get up a stock as quickly as possible. The following method of raising seedlings is to be recommended, it being simple and inexpensive:—In a northern aspect, and if possible behind a high hedge of evergreens, erect a rough frame of deal boards—say, 15 feet long by 4 feet wide; it should be 3 feet deep at the back, and sloping to a foot at the front Place a 3-inch coating of rough gravel in the bottom of this frame, and fill up with a mixture of not too rough peat, and a small quantity of sand. Press the whole down firmly, or, better still, if time allows, leave it alone to consolidate naturally. The seeds should next be sown evenly over the surface, not too thickly, for this is attended with bad results, and the bed covered with deciduous branches or net, to prevent birds gaining access thereto. Seedling plants will soon make their appearance, and grow rapidly. During dry weather they should be well attended to with water. When of sufficient size for handling they may be lined out in the nursery, the border in which they are to be planted having been well prepared.

Protecting Seed-beds.

Young seed-beds frequently suffer severely from the attacks of game and vermin; hares and rabbits nip the plants, rats and mice destroy seeds, while moles cause great destruction by burrowing. To put a stop to such depredations is no easy matter, and after many experiments, the entire covering in of the piece of ground in which the seed-beds are to be formed is found to be the only preventive. A piece of ground sufficiently large to contain the number of seed-beds requisite for the extent of nursery ground kept under crop, should first of all be surrounded with a slate fence. The slates may be 5 feet long, 2 feet being sunk in the ground, this to a great extent prevents moles entering the enclosure, and the remaining length of 3 feet acts as an effectual check to the inroads of rats and mice. Wooden posts, 3 feet in length, are next placed at convenient distances apart all around the enclosure, and close to the slate fence, the tops of those on opposite sides being joined by other pieces of wood, and the whole covered over with fine-meshed wire-netting. By an erection of this kind ground game, vermin, birds, moles, rats and mice, are pretty well kept in check. The wire-netting used should be ½-inch or ¾-inch mesh, never larger, and if galvanised wire be used so much the better. It is a cheap method, and one which we have found to answer during ten years' experience. *A. D. Webster, Penrhyn Castle, Bangor.*

Trees Dying.

What are the principal causes of trees dying after transplanting? I have had to do with the planting of many millions of trees, and the most successful operations never gave less than 5 per cent. of deaths, and over some hundreds of acres of 3-year-old Scotch Firs the average was 10 per cent. Of Larch, again, of corresponding numbers and age, the average deaths were 15 per cent. That, some may say, is so good as to merit the commendation of perfect planting, for nobody would look for fewer deaths than that, and if they did they would expect too much. The question, however, is not as to the number of deaths, but how to account for them. If ninety-five plants out of every hundred grow, why not the other five as well?—or if the five plants died, why not the ninety-five also?

The percentages of deaths above quoted are, however, the minimum in so far as my experience goes; but what of the maximum? I once saw a plantation of 5 or 6 acres composed of a mixture of hard woods (chiefly Oak and Elm) and Larch, Scotch Firs, and Silver Firs, of which fully 80 per cent were dead, and the remainder hopelessly weak and sickly. They were all pulled up and burnt, and the ground replanted with the same size and description of plants, and treated in every way the same as the first planting, with this difference, that the first planting was done in March, and the second in November; but it is also necessary to explain that the ground was trenched about three to five months previously to the first planting, and the soil being of a dry, stony nature, caused the trees to die for want of moisture. Another plantation with which I had something to do consisted of Larch and Scotch Fir,

both three years old from the seed, and planted of about equal proportion. The planting was done between December and July, both inclusive. On examining the state of the plants in August following, it was found that while only 15 per cent. of the Scotch Firs were dead, 70 per cent. of the Larch were dead. As similar planting was going on in the neighbourhood at the same time, and conducted in the same way—plants, &c., alike—I was anxious to know how they had succeeded, and found on examination that not more than 20 per cent. of deaths of the Larch occurred in any part of the plantations, and most places considerably fewer. Several experienced planters examined this unaccountable failure of the Larch, and as many reasons were assigned for it as there were persons who gave their opinion.

At the time I was also unable to satisfy myself as to the true cause of the extraordinary failure, and it was not till I subsequently made some actual experiments, that I arrived at the settled conclusion that the plants perished from the cold state of the ground at that season of the year in which above all others there is least heat in the soil.

That the temperature of the soil at the time of planting, and several weeks afterwards, determines the success or failure of planting more than anything else I am fully persuaded, and will endeavour to show in a future paper. *C. Y. Michie, Cullen House.*

AMATEURS' NOTES.

LARGE SPIKES ON ODONTOGLOSSUM CRISPUM.

In the *Garden* of January 10, 1885, p. 17, there is a note that says that at the Château de Gonville there were spikes 3 feet to 3 feet 10 inches long, bearing without a branch fifty-four to sixty-four blooms, and one spike of 4 feet 6 inches long with two branches bearing eighty-three blooms. No mention is made of the length of time the plants had been established, or any other particulars as to the length of branches and length of spike bearing and not bearing blooms. I have lately cut a spike off Odontoglossum crispum imported by Mr. Sander in November, 1885, which in 1886 carried an ordinary-sized spike with nine blooms. This plant made a fine bulb (it has a total of six), and on September 9, 1886, it began to put forth a spike of abnormal size; this, on January 5, 1887, commenced opening its sixteen flowers without a branch; the largest was 3⅜ inches across, the smallest 2¾ inches; the whole length of the spike was 40 inches—20 inches bare and 20 inches bearing bloom; it therefore required in this variety 20 inches to accommodate eight blooms in a row, they overlapping each other, of course, but slightly. I should like to hear other growers' experiences on these points. I see at p. 212 of issue February 12, 1887, "A Lover of Orchids" writes mentioning one of Mr. Stewart Hodgson's plants at Lythe Hill, Haslemere, as having fifteen blooms on a spike over 2 feet long. Can he tell me the particulars, as I have noted them above, or, if this meets the eye of the gardener, would he do so? I have a good many spikes over 2 feet long, but the greatest number of most blooms I have on them now is thirteen without a branch, and eighteen with two branches bearing three blooms each. *A propos* of large spikes, I have bought one of Mr. Sander's importation of Cattleya Mendelii sold at the Central Rooms on February 11—a plant with bulbs all over 9½ inches high and 1 inch across, the large one 11 inches high, 1⅜ across the widest part, bearing an old 13-inch spike of three-eighths of an inch diameter, which carried seven blooms. Is this not a remarkably large one? *De B. Crawshay.*

Angræcum sesquipedale.

In reply to Mr. G. Lucas' note on the above at p. 220 in the issue of the 12th inst., I can corroborate the flower's strong scent at night, a fact which points to the fact that the fertilising insect is a moth of the genus Noctua. The plant is grown in the Cattleya-house, and has been there always since I bought it, the summer-flowering variety in Sir W. Marriott's sale, May 21, 1884. It is the picture of health, with its sixteen developed and one rising leaf, and two spikes developing three buds each. When I bought it it was as yellow as a guinea. These leaves recovered their green lustre under the nursing it received at the hands of my gardener, who had an especial love for it, having been on Sir W. Marriott's staff some time before, and who is justly proud of it now. *De B. Crawshay.*

THE HERBACEOUS BORDER.

DOG'S-TOOTH VIOLET: ERYTHRONIUMS.

The present fashions bid fair to consign many extremely beautiful, not to say singular bulbous plants, to a second place in the estimation of growers. Such are the Erythroniums, the several species being distinct, and all possessed of great beauty of flowers and foliage, or both. They are amongst the earliest of spring flowering plants, and are alike suitable for sunny borders out-of-doors and growing in pots. When, therefore, we take into consideration their hardihood, the beauty of their foliage, and the reasonable price charged for them, it becomes a matter for wonder why they are not always present in good gardens, to say the least, from which nevertheless they are all very frequently absent.

Though the generic name refers only to the colour of the leaves and flowers of the common form first named, the specific name, Dens-canis, seems to become permanently attached to the whole. The term "Dog's-tooth Violets"—and by this name, derived no doubt from the peculiar formation of their roots—they are commonly known. Of this original species, introduced during the sixteenth century, the several varieties, consisting of lilac, white, and red-coloured flowers, are the most common forms at present cultivated. This species in its several forms is native of sub-alpine parts of South-eastern Europe and of Siberia, where it is very abundant, and, according to Gmelin, the inhabitants of those remote districts use its long slender white bulbs in soups. It may be well to remark that in the wild state it grows freely amongst loose stones, bushes, &c.—a fact which goes far to show how well adapted it is for growing upon exposed artificial rock-work, &c.

Erythroniums do not habitually seed in this country, but are increased by the bulbous offsets formed below-ground. The proper way to plant them is in clusters of five or six bulbs or in rows, thickly. When once planted they subsist and continue to push forth and flower annually during the month of March indefinitely. To insure this, permanent wooden pegs should be constantly maintained over them to mark the spot where the bulbs rest in winter. Newer or more recent introductions comprise decided advances on the above. Erythronium giganteum (syn. grandiflorum) is a charming Californian species, growing to a height of 9 or 10 inches, producing variously as many as three to six blooms upon each stem, the individual blooms being about 3 inches in diameter, and the colour, according to catalogues, red, but in reality those I grew varied in colour from white to yellow, shaded with purple. The American species, E. lanceolatum, has bright yellow flowers; whilst E. Nuttallianum is a fine distinct new species, with fine golden-yellow flowers. *William Earley, Ilford.*

THE APIARY.

SCOTCH BEEKEEPING.

I promised that this time my article should be upon Scotch beekeeping, but it is only one sort of hive I purpose to speak of now, viz., the Stewarton hive, one largely used in beekeeping in Scotland. There is no doubt that the old-fashioned, dome-shaped skep was, and is, a very comfortable one for bees; and there is as little doubt that the shape which comes nearest to it is the next best as far as the bees are concerned. That shape is the octagon. That shape is not, however, by any means modern, and it must be confessed that John Gedde used octagon boxes in the reign of Charles II., and that he obtained a patent from that monarch in the year 1675. I am not prepared to state the exact date when our Scotch friends adopted this shape; it is sufficient to say that the Stewarton hive is so-called from Stewarton, a place in Scotland where they are largely used and manufactured, and I may say that they have been made there for a number of years by Mr. James Allan, who, I am happy to state, still exists there. There is also no doubt that even after paying the carriage they can be obtained cheaper there than in England. A Stewarton hive consists of a set of boxes of octagon shape, but of two different depths. One kind of box is called the breeding-box, or stock-box, and is about 7 inches deep; and the other kind of box is called the honey-box, and is about 4 inches deep. They all interchangeable, as the octagon is the same size in all. There are slits on the top of all the boxes, and strips of wood fit into these slits, and they can be opened or closed at pleasure. Each box is provided with two windows, closed by a shutter, and through these the state of the colony can be ascertained. A good plan of proceeding is to place a swarm of bees into one of the stock-boxes and put it where you wish it to remain, and push in all the slides. Of course there must be a cover. If you have another swarm in a few days put into another stock-box, and place it beside the other. At dusk, when all the bees are at home, put this second swarm on the top of the first. It would not be a bad thing to puff in a little smoke, and then withdraw the slides from the bottom box. There will then be communication throughout. On the principle of the rich being well received there will be no quarrelling, for it is well known a swarm is always well provided with honey. A surplus queen of course there will be, and probably she will be hoisted out in the night, and will be found outside the hive next morning. Here, then, will be a strong colony. In a few days a honey-box may be added. If honey is coming in well another box may be added under the other. It is always best to add these boxes a little in advance of the wants of the bees. When the comb approaches the window is the proper time to add another box. In a good season as many as ten honey-boxes may be taken off one hive, and as each of the four boxes holds about 20 lb, that makes 200 lb. from a single hive. *Walter Chitty, Pewsey.*

PLANT PORTRAITS.

Campanula isophylla, *Garden*, January 1, 1887.
Catasetum tridentatum, *Illustration Horticole*, t. 619, December, 1886.
Cattleya Trianiæ Hooleyana, *Orchid Album*, t. 265.
Galeandra Baueri, *Orchid Album*, t. 267.
Iris aurea, *Garden*, January 15, 1887.
Lælia elegans var. Houtteana, *Lindenia*, t. 71.
Nepenthes Mastersiana ×, *Illustration Horticole*, t. 618. December, 1886.
Odontoglossum Alexandræ var. Cutseniana, *Lindenia*, t. 70.
Oncidium Jonesianum, *Lindenia*, t. 72.
Phalænopsis rosea, *Orchid Album*, t. 268.
Thrixspermum unguiculatum, *Orchid Album*, t. 266.
Zauschneria californica, *Garden*, January 8, 1887.

Manchester Horticultural Improvement Society.—The fortnightly meeting of this Society was held at the Memorial Hall, Albert Square, on Thursday evening, the 10th inst., Mr. Robert Tait presiding. Mr. Forrester, gardener, Beechwood, read a paper on common insects and how to check their ravages, and on the methods to adopt for their destruction.

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APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

TUESDAY,	Feb. 22	Royal Horticultural Society: Special Meeting of Council.
WEDNESDAY,	Feb. 23	Society of Arts, at 8 P.M.
SATURDAY,	Feb. 26	Royal Botanic Society: Meeting at 3.45 P.M.

SALES.

MONDAY,	Feb. 21	Importation of Lilies from Japan, at Stevens' Rooms. Nursery Stock at the Hertford Nurseries, by Protheroe & Morris (five days).
TUESDAY,	Feb. 22	Orchids in Flower, at Protheroe & Morris' Rooms. Roses, Shrubs, Plants, &c., at the City Auction Rooms, by Protheroe & Morris,
WEDNESDAY,	Feb. 23	Hardy Plants and various Bulbs, at Stevens' Rooms. Lilies, Roses, &c., at Protheroe & Morris' Rooms.
THURSDAY,	Feb. 24	Imported Orchids in variety, from Messrs. H. Low & Co., at Stevens' Rooms,
FRIDAY,	Feb. 25	Imported Orchids, at Protheroe & Morris' Rooms.
SATURDAY,	Feb. 26	Hardy Plants and various Bulbs, at Stevens' Rooms. Lilies, Roses, &c., at Protheroe & Morris' Rooms.

The Potato at Rest.

We are so accustomed, at this season, to think of the Potato as an inert object when at rest, that we are apt to overlook the fact that the rest is only partial, whilst underneath that impassive and immobile looking skin a good deal of work is going on—at least, whenever the temperature is above freezing. Some knowledge of the nature of that work is desirable for us as practical men, because upon the way in which it is done depends in great measure our success in storing Potatos for consumption, and the vigour and health of our crops for the future. Much of the complaint made of late as to the degeneracy of the Potato, and as to its inferior quality as compared with past times, is probably due to the way in which these changes are effected. These again are dependent upon the way in which the plant was able to do its work in the preceding summer. This brings us to the questions, whether the newer varieties are as well adapted to our climate as the older ones, and whether the exhibition table has not something to answer for by fostering good looks at the expense of constitution; at any rate, these matters are worth consideration. If an ordinary grower of or dealer in Potatos were told that the tubers he rightly sets such store by breathe as human beings do, he would probably think that some facetious hoax was being played upon him. The fact, however, remains that, although they have no lungs, Potatos, in the ground or out of the ground, breathe. We do not mean to say that they palpitate, draw long breaths, or heave deep sighs, but they breathe nevertheless. They inhale and exhale through their skin gases of various kinds, just as every one knows that under certain conditions they exhale moisture or "sweat." The conversion of the sugary juice called glucose, derived from the foliage, into the solid starch stored up in the tuber, is associated with the emission of gases, while the reconversion of that starch into soluble sugar requisite for the maintenance and nourishing of the tissues of the tuber and for the shoots when growth commences, is also attended by an emission of carbonic acid gas and watery vapour, this latter process being more or less analogous to that which constitutes the respiration of animals; and thus it is that Potatos breathe. Starch grains are practically insoluble and are too large to be conveyed in their solid form from the leaves in which they are formed to the tubers in which they are to be stored up; hence the necessity for their conversion into glucose, or some analogous liquid matter, by means of which the transit may be made, and from which the solid starch may be again deposited as occasion may require; so that Potato tubers, whether still in the ground, or removed and placed on the exhibition-table, or in the cellar, are, in a certain way, breathing.

The chemical changes we have alluded to go on probably through the agency of some ferment in the detached tuber in the same manner, but to a less extent, than when it is still attached to the plant. A kilogramme (2 lb. 3 oz.) of Potatos when the temperature was 20° C. (68° F.) gave off in August 6.5 milligrammes of carbonic acid per hour, and in January and February, at the same temperature, 10 and 11 milligrammes per hour. When exposed, however, to the freezing point in the laboratory, whether in August or in the winter months, the proportion of carbon dioxide, *alias* carbonic acid gas, was reduced to about 2 milligrammes per hour. As the temperature rises, more and more sugary juice is found in the tubers, less and less starch. A time comes when the sugar is no longer used up in the course of the respiratory process, and no longer converted into starch. An excess of sugary juice then occurs, which flows to the eyes or buds, and the period of comparative rest is at an end. The practical inference is that which careful practitioners have long arrived at from experience, viz., to store the Potatos in a uniform low temperature, in a dry condition, and in the dark, so as not to excite those chemical and physical changes associated with growth, and consequent upon the conversion of starch into sugar. Mr. H. Müller, who has investigated these matters, has extended his researches to the buds of trees, in which exactly the same phenomena take place as in the tubers of the Potato. When the flow of sugary juice from the leaf ceases at the end of autumn, and is deposited in the form of starch in the buds, bark, and young wood of the tree, growth ceases. In the spring a little of the sugary juice left over in the bark flows towards the buds, which forthwith begin to swell and lengthen into shoots.

The Royal Horticultural Society.—Day by day the conviction becomes clearer that the Royal Horticultural Society has very decided claims to be treated as liberally as other scientific societies have been, and that the Commissioners of the 1851 Exhibition would only be doing their duty in assigning an adequate freehold site to the Society. Day by day outsiders are realising, what the horticulturists have felt all along, how unjust has been the prejudice against the Society, which lost its all in endeavouring to act honestly by the debenture holders. A direct appeal to Her Majesty, whose sympathy with the Society is well known, would be of great value, and when once the public find out how much the Society has done, even in these later days, for the public benefit, apart from mere fashionable amusement, we make no doubt that a new era of prosperity would be evolved with rapidity. A special meeting of the Council of the Society has been summoned for Tuesday, the 22d inst., when part of the business will be to appoint a sub-committee of the Council to confer with the committee nominated at the annual general meeting to consider the future of the Society's affairs.

Narcissus Committee of the Royal Horticultural Society.—The following dates have been fixed for the meetings of the Narcissus Committee, viz., March 22, April 12 and 26. Should the season be backward it may be found desirable to hold another meeting on May 10.

Permission to Grow Tobacco.—With the view of furthering the experiments in the cultivation of Tobacco in this country, the Government have resolved to extend the permission given last year to this year also. Messrs. Veitch & Son, of Exeter, have, we are informed, had an official communication authorising their planting a plot of ground with Tobacco for experimental purposes, they complying with the usual regulations and giving the necessary guarantee to the Inland Revenue Department.

The Most Eminent Order of the Indian Empire.—Amongst many gentlemen connected with commerce, learning, and the arts, in our Indian Dependency who have been selected as recipients of the honour of Knights Commander of the new Jubilee Honour for India are Dietrich Brandis, Esq., C.I.E., late Inspector-General of Forests; and Sir George Christopher Molesworth Birdwood, M.D., C.S.I., special assistant in the Statistics and Commerce Department of the India Office.

"Le Jardin."—Under this name a new gardening journal is to be published in France under the auspices of M. Godefroy-Lebeuf, well known as the spirited proprietor of the *Orchidophile*. The new journal will appear fortnightly, and will rank among its contributors M. le Marquis De Cherville, M. Ch. de Franciosi, and many other horticulturists. The publisher (*administrateur*) is M. Amédée Picard, Argenteuil, Paris.

Florists' Jubilee Scheme, 1887.—A circular has just been issued by a committee representing the Royal National Tulip, National Auricula, and National Carnation and Picotee Societies, Northern Section, signed by Samuel Barlow, J.P., Middleton, Chairman; Bruce Findlay, Manchester, Treasurer; Rev. F. D. Horner, and James W. Bentley, Hon. Secretaries, in support of Mr. Barlow's proposal that an extra effort should be made to add to the attractiveness of the exhibitions of the above, to be held during the present year, by extending and augmenting the schedules of prizes. The circular states that the members of these societies "are for the most part men of humble means and small leisure, and few advantages of garden room, and often with very great difficulty of situation to contend against; but animated with an ardent love of their favourite flowers, they persevere with a zeal and energy worthy of all encouragement. The pursuit itself needs no commendation as an innocent, healthy recreation of high worth, and of elevating home pleasure. It is proposed by means of a special fund, to be divided among the florists' societies according to their needs, to enlarge and enrich the several exhibitions of the present year, making them also representative of the different flowers culti-

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TERRACE GARDENS AT ALTON TOWERS.

vated. It is felt that such a recognition would greatly encourage the widespread band of florists in the membership of these societies, and largely strengthen the hands of those who have for many years done their best for the success of the work." The committee appointed to carry out the proposal includes Joseph Broome, Esq., J.P., Manchester; Arthur Potts, Esq., J.P., Chester; C. M. Royds, Esq., J.P., Rochdale; and other well-known florists.

Gardeners' Orphan Home. — The appeal made in our columns last week by two correspondents has elicited from Mr. Beale (of Messrs. J. Carter & Co.) the sum of five guineas, as his first annual subscription. We hope to record many more instances when the scheme is fairly started.

Cinder Ash.—A remarkable instance of the value of a little knowledge that is science has recently been afforded. The huge, unsightly, and hitherto useless piles of slag produced in the manufacture of steel are likely to be turned to good account. Reflecting on the fact that in the casting of Bessemer steel one object is to eliminate the phosphorus, and on the other fact that phosphates are valuable manurial agents for certain plants—*e.g.*, Turnips—experiments have been recently made in Germany, and at the Agricultural College at Downton, on the value as a plant manure of this slag when ground to a fine powder. Professors Wrightson and Fream have made some carefully contrived comparative field experiments with this substance, with the most gratifying success, the ground slag acting more quickly than ground bones or coprolites. The full report is given in the *North British Agriculturist*, and is on all accounts highly satisfactory.

"Journal de Botanique."—M. L. Morot, 28, Rue Tournefort, proposes to issue fortnightly a new botanical journal under the above title. We shall await its appearance with the more interest in that the horticultural aspects of botany are not to be neglected.

Moore Memorial Fund.—In addition to the names previously announced, we have now to add those of Messrs. G. Eyles, F. W. Burbidge, A. Roger (Battersea), and E. Goodwin. Further subscriptions may be sent to Harry Veitch, Esq., King's Road, Chelsea, or to Dr. Masters, at the office of this journal. We may add that Mr. Moore's library, which is very rich in botanical and horticultural books, for the most part in excellent condition, is for sale in its entirety.

Burridge Relief Fund.—Mr. R. Dean gratefully acknowledges the following additional contributions:—Messrs. Vilmorin, Andrieux & Co., Paris, 21*s.*; Mr. B. S. Williams, Holloway, 10*s.* 6*d.*; Laura L——, Taunton, 10*s.* Messrs. Sutton & Sons, contributions direct to Mr. Burridge. Arrangements have very kindly been made by Mr. G. F. Nixon, manager of the London and County Bank at Ealing, Reading, and Mr. B. R. Cant, Colchester, have sent by which the sum of £1 weekly will be paid to Mr. Burridge at the London and Provincial Bank of England "Limited" at Ipswich until the sum contributed is exhausted.

The United Horticultural Benefit and Provident Society. — The twenty-first annual meeting of this useful and prosperous Society took place at the usual place of meeting, the Caledonian Hotel, Adelphi, Strand, on Monday evening last, under the presidency of Mr. Richard Dean, one of the honorary members. After the election of thirteen new members, and the nomination of others, Mr. James Hudson, the Treasurer *pro tem.*, read the report for the year 1886. An abstract of the accounts of the Society shows, in respect to the benefit fund, that the income during the year has been £346 8*s.* 10*d.*, this including the contributions of 177 members, and the interest amounting to £63 6*s.* 4*d.* accruing from invested funds. The disbursements, including a payment of £19 9*s.* 7½*d.* to the widow of a deceased member, being £46 8*s.* 4½*d.* As the general result of this fund we observe the balance in hand on January 10, 1886, was £2183 8*s.* 6¼*d.*; on the corresponding date this year it is £2482 5*s.* 10¾*d.*, an increase of £298 17*s.* 4½*d.* The benevolent fund, from which no grants have happily been called for, has increased from £1018 2*s.* 11*d.* to £1092 0*s.* 1½*d.* during the year—a gain of £73 17*s.* 2½*d.*; and the total amount invested in 3 per cent. Consols to £3652 17*s.* 6*d.* The report was adopted, and ordered to be printed for circulation. The office of Secretary being vacant, there were three applicants for the office, the successful one being Mr. W. Collins, of the gardens at Chivos House, Poynders Road, Clapham Park, S.W.

National Chrysanthemum Society. — A meeting of the General Committee of this Society took place at the "Old Four Swans," Bishopsgate Street, E.C., on Monday evening last, Mr. R. Ballantine, Vice-President, in the chair, there being a large attendance of members. Applications for affiliation were received from provincial societies, and duly granted. The meetings of the Floral Committee were fixed for September 14, November 9, October 12 and 26, November 23 and 29; these meetings will take place as heretofore, at the Royal Aquarium. The judges for the several exhibitions were appointed, and the necessary arrangements made. Five new members were elected. The draft schedule of prizes as revised and prepared by the sub-committee was then submitted for approval, and a long discussion took place over the definition of the word amateur, but no really satisfactory basis was reached. The feeling of the meeting was in favour of retaining the amateurs' classes, which, it was stated, operate to encourage many small growers to compete, The schedule of prizes of the National Chrysanthemum Society for the coming season comprise a money value of nearly £400.

Colonial Fruit.—At the meeting of the Royal Colonial Institute on February 8 Mr. D. Morris, Assistant Director, Royal Gardens, Kew, read a paper on the fruit trade of this country, pointing out that the home country imports fruit from foreign countries to the extent of more than £7,500,000, much of which might as well be obtained from colonial sources. Mr. Morris then gave details at great length as to the present state of the fruit industry in the various British colonies. By means of special cool chambers for the storage of fruit on board ship the prospects of the trade in fresh tropical and subtropical fruits would be greatly improved. We shall hope to give extracts from Mr. Morris' paper on another occasion.

Agri-Horticultural Society of Madras. —The last number of the *Proceedings* of this Society contains a detailed account of the effects of the cyclone which caused such devastation to the garden on November 10, 1886; some notes on the wild Date, Phœnix silvestris, which grows inland, and has golden-coloured fruit; and P. farinifera, which grows by the sea, and which bears black fruit.

Arnold Arboretum. — Professor Sargent reports that a beginning has at last been made in planting the type collection of trees on the system of arrangement briefly described in his last annual report. The Ashes, Elms, Catalpas, Birches, Hickories, Hop-Hornbeams, and Beeches, or a large part of the individuals and groups intended to illustrate these genera, have been planted. In the Coniferæ the true Pines, the Firs, Spruces, and Larches have been planted. The ground has been prepared to receive in the spring of 1887 the Oaks, Walnuts, and Chestnuts. The planting is now already far in advance of the road-making. About 70,000 trees and shrubs have been permanently planted during the year in the systematic arrangement of trees, in boundary belts, and in different border and coppice plantations. The ground which will be occupied by the trees of the permanent type collection has been prepared in the most thorough and careful manner. None of the trees in the type groups have been planted in pits less than 10 feet square, and all trees intended to grow singly and develope into specimens are planted in pits 25 feet square. Rock, gravel, and sandy soil has been removed from all pits to a uniform depth of 3 feet, and replaced by a compost of loam and peat. The soil, as far as practicable, has been deepened and enriched over the whole surface planted. Nearly a thousand cubic yards of loam have been brought into the Arboretum during the year for this purpose. The result of this expenditure, which is very considerable, will not perhaps be apparent for many years, but sooner or later the Arboretum will get the full benefit of it in older and finer trees than could have been raised on its naturally thin and now exhausted soil.

The Tithe Agitation.—Several seizures for tithes and extraordinary tithes were announced in Kent on Saturday last. At Swanley, according to a note in the *Times*, the vicar seized a horse and van, valued at £50, from Mr. Philip Ladds, nurseryman, for £23 arrears of extraordinary tithe, the liability for which is disputed. The horse and van were sent to an auctioneer at St. Paul's Cray, but this being out of the district was an illegal act, and the horse and van were sent back to Mr. Ladds, who, however, refused to accept them pending a judicial investigation. The Rev. D. Harding, vicar of Sutton Valence, has made distraints on several farms for arrears in connection with ordinary tithe.

London Parks.—In the House of Commons, in answer to questions by Colonel Hughes and Mr. Webster, Mr. Plunket said the average annual expenditure during the last three years has been—on Victoria Park, £7421; Battersea Park, £7076; Kennington Park, £1340; Bethnal Green Garden, £330; Westminster Bridge, £3028; Chelsea Embankment, £64—total, £19,259. The only debt on the above is that on Battersea Park, which is—principal of loan by the Public Works Loan Commissioners, £100,000; arrears of simple interest on the above at 4 per cent., £73,000; total, £173,000. Towards meeting the charge on account of this debt there is an available income of £5400 per annum, derived from the letting of land on building leases. This income is gradually increasing, and when all the surplus land has been let it may be expected to reach £6800 a year. There is also an income of about £140 a year derived from grazings in Battersea and Victoria Parks.

The Economical Condition of India.—At a meeting of the Indian section of the Society of Arts recently, Dr. George Watt read a paper on "The Economical Condition of India." Sir George Birdwood presided. The lecturer said the intrinsically valuable products of the country were employed at the present day by the natives of India only or were not used by man at all, although they possessed properties which seemed likely to make them articles of European trade in a not far distant future. He enlarged upon the ignorance which he said had for very many years prevailed on every Indian question. He described the non-European, and consequently unimportant, commercial products of India, and proceeded to remark upon the improvement of the internal and foreign trade in the minor products of the country. He referred to the peculiarities of the country as a vast agricultural field, and remarked that the development of its economical resources must, to a large extent, mean the improvement and extension of its trade in the annual crops removed from its plains. He also dealt at length with the chief food substances exported from India, and described in detail the narcotics of the country, including under this head, Tea, Coffee, and Tobacco.

Caraguata Morreniana.—A new species, discovered in the mountains of New Granada by M. André, and dedicated by him to the memory of Edward Morren, whose loss comes home to us almost daily. The plant forms a tuft of robust, strap-shaped, acute leaves, the innermost of which are crimson or purplish, and the largest of which measures about 18 inches in length. The yel-

low tubular flowers, each about 1½ inch long, have a flat three-parted limb, and are massed in dense tufts in the axils of broad scarlet bracts. According to the figure in the *Revue Horticole* for January 1, this must be one of the most beautiful of a beautiful race.

Iconography of the Australian Species of Acacia.—The first decade of Baron von Mueller's illustrated history of the Australian species of Acacia has just reached us. There are, it appears, more than 300 well marked species, barely a third of which have yet been illustrated. The beauty of the plants for cultural purposes, and their use as supplying tannin, gum, timber, and other products, render it highly desirable that a good series of figures should be issued. This the ever active Baron von Mueller now proposes to supply in the shape of a series of quarto lithographs, corresponding to those with which he has already enriched science in the instance of the Eucalypts. No descriptive text accompanies the present decade, but the differential characters are well brought out on the plates, and reference is made to the works in which the particular species were first described. An indication of the volume and page of the *Flora Australensis* in which the plants are included would also be desirable.

Gardeners' Education.—The Austrian Horticultural Society has established a school of horticulture, the session of which extends from October to February, eighteen hours weekly being devoted to lectures to gardeners. Horticulture, pomology, botany, landscape gardening, and natural history, are taught. Certificates are granted to the most praiseworthy students, and a travelling allowance of 375 francs is awarded to the best candidate, to enable him to see something of practice in other localities.

The Egyptian Flora.—Professor A. Ascherson, of Berlin, is engaged with his friend Professor G. Schweinfurth upon a catalogue of the Egyptian flora, which is to be published this year by the Ægyptisches Institut. The number of hitherto known species of Egyptian plants is said to be 1260. In the middle of February Professor Ascherson is to start upon a journey in Lower Egypt. His object is to explore the less known parts of the Nile delta, and then to follow the march of the children of Israel through the wilderness according to the theory of Schleiden and Bruysch as to their route. The journey is undertaken at the cost of the Egyptian Government, not of that of Prussia, and will probably last about three months.

The "Botanical Magazine."—The plants figured in the February number are:—

Silphium albiflorum, t. 6918.—A robust, coarsely hairy plant, with deeply divided leaves and whitish flower-heads in terminal clusters, each head being about 3 inches across. It is a handsome hardy perennial, native of Texas, whence it was introduced by Mr. Thompson, of Ipswich.

Gladiolus Watsonianus, t. 6819, is a species discovered on Kilimanjaro, and nearly related to G. Watsonius (*Bot. Mag.*, t. 450), but quite different in leaf and stature. The plant flowered at Kew in 1886, and was shown at one of the meetings of the Royal Horticultural Society.

Hemipilia calophylla, t. 6920, is a very curious terrestrial Orchid from Tennaserim. Its solitary leaves are marked like that of the Dog Violet (Dodecatheon). The flowers are borne in a loose spike at the top of a slender spotted stalk; each flower is of oblong outline, nearly an inch long, with small pale greenish ovate acute segments, and an oblong obtuse violet-coloured lip. Flowered at Kew.

Adesmia balsamica, t. 6921.—"A graceful and very beautiful" shrub, with pinnate leaves, the pinnæ small, in about eight pairs; the yellow Pea-shaped flowers are in loose racemes at the ends of the branches. The whole plant has a balsamic odour. It is a native of Chili, and was flowered by Sir George Macleay.

Strobilanthes coloratus, t. 6922.—An Acanthaceous shrub, native of the Eastern Himalayas at elevations of 2000—5000 feet. As cultivated at Kew it is a glabrous shrub, with ovate-lanceolate leaves, purplish on the under surface, and with loose terminal panicles of lilac-coloured, funnel-shaped flowers, with a five-lobed spreading limb, each flower being about 1½ inch long and upwards.

Agricultural Science.—We are glad to announce the publication of the first number of a periodical to be edited by Mr. C. S. Plumb, of Geneva, New York. Mr. Plumb is connected with the agricultural station in that locality. The magazine is to be devoted to the promotion of economic science as applied to agriculture, to the dissemination of the results of investigation in the laboratory and the field, the publication of abstracts from the most recent scientific agricultural journals, and the collation of news bearing on the work of agricultural research. The journal is established especially for "scholars and investigators rather than mere readers." Unfortunately scholars and students are not "a paying class," and hence Mr. Plumb's efforts to introduce a high-class journal of permanent value should meet with the more sympathy and support from those who are able to appreciate the necessities of the case.

Strophanthus Seeds.—A good deal of interest has been attached for some years past to the seeds of Strophanthus hispidus and S. Kombe, in consequence of the reputation attached to them as a valuable drug in diseases of the heart. It will probably be remembered that Professor Fraser communicated a paper to the Royal Society of Edinburgh on the subject of some experiments made by him with Strophanthus so far back as 1870; the subject dropped for some time, but has been taken up again, and from widely conducted experiments the general opinion of the medical profession is that it is a valuable remedy in fatty degeneration of the heart. The difficulty has been in obtaining a sufficient supply of seeds for full and efficient trials. So powerful is the active principle of the seeds that a few go a long way, and these have been obtained from various collectors. Occasionally small quantities have found their way into the market, not, perperhaps, as a regular article of commerce, but as the result of small quantities collected by various travellers and collector. Within the last month, however, good seeds of Strophanthus hispidus have appeared in the drug market, and quoted at 80*s*. per pound. Here, then, is a new drug, which for a time, and so long as the supplies are limited, is a profitable article of import.

"Italia Œnologica."—A new periodical devoted to the Grape and its culture and to the manufacture of wine has been established in Rome under the auspices of the Cercle Œnophile Italien, which is presided over by Sig. O. Toaldi.

Bulb or Eucharis Mite.—Mr. Keetley, of Darley Abbey, writes to question the influence of artificial manures in the production of these pests, and sent us specimens of Hyacinth bulbs swarming with mites, which he adduces evidence to prove were imported with the bulbs. We submitted the specimens to Mr. Michael, the authority on these matters, and who points out that the term Eucharis mite is misleading, as leading to the inference that the creature is peculiar to the Eucharis, whereas the same insect attacks bulbs of all kinds.

"It is interesting," says Mr. Michael, "to observe that Mr. Keetley's bulbs, which have not been planted, are even more abundantly supplied with Rhizoglyphus, and even more destroyed than those that have been planted [which could hardly be the case were manure at fault]. I entirely agree with Mr. Keetley that the Rhizoglyphus attacks sound, healthy bulbs (any one who takes the trouble to try the experiment will soon be convinced of this), and that thus the bulb is wounded, water and fungus are admitted, and fungus growth follows. Of course, there may be plenty of cases where fungus attacks the bulb irrespectively of the Rhizoglyphus, but I have for some time been convinced that the process described by Mr. Keetley is a very serious mode of destruction. He is probably right in saying that there is not any real cure, but it might be worth trying dusting the bulbs as soon as they arrive with flowers of sulphur, and repeating the process twice at intervals of a fortnight, for sulphur kills adults, but not eggs. When bulbs are kept in a box, it might be worth keeping a piece of camphor in the box. It is possibly also worth remembering that cheese farmers appear to protect themselves efficiently against the closely-allied cheese-mites by greasing their cheeses before they are infected; probably, however, there might be practical difficulties in doing this in the case of bulbs."

Exposure of the bulbs to the vapour of bisulphide of carbon might be serviceable.

Agave marmorata.—From the *Sydney Mail* we learn that in the far-famed Botanic Garden of that city the Agave marmorata is in bloom. The stalk of the plant mentioned is about 25 feet in height, and it is from the upper portion of this that flowers of a bright orange colour are seen in compact racemelets. It is believed that this is the only plant of the kind in the colony—certainly it is the first one which has blossomed. After growing for about fifteen or twenty years, according to the locality where it is planted, the plant, which gradually sends upwards the stalk above described, is seen to shrivel at the base. After flowering the entire plant is seen to wither away, and bear the appearance of being quite dead. This is not the case, however, for soon a new and fresh plant, or rather, more properly speaking, a cluster of new plants, is seen to spring up from the roots of the old one, and so it developes into a plant similar to that already described. To preserve the plant now in flower at the Botanic Gardens wire guys have been attached to the stalk to keep it in position, which, though detracting somewhat from the beauty of the plant, is no doubt a wise precaution, in view of its exposure to the strong winds from the harbour.

Heliophila scandens.—Sixty-one species of Heliophila are enumerated and described in Harvey and Sonder's *Flora Capensis*, all natives of the Cape, and very few of which are ever seen in gardens; but H. amplexicaulis with purple and H. pilosa with blue flowers may be given as instances of border annuals. The species under notice is a very exceptional member, not only of the genus but of the Crucifer family, to which it belongs, and is figured in the *Thesaurus Capensis*, t. 166, but is not even mentioned in the first volume of the *Flora Capensis*, published in 1860. The stems under natural conditions attain a length of 6—8 feet, are slender, and twining, so that if it is desired to cultivate the plant in pots, as is done in the Begonia-house at Kew, it can be accommodated in reasonable space by twining the stems round some neat sticks. The flowers are comparatively large for the order, and pure white with straw-coloured veins, but sometimes exhibit a rosy tint, and are produced in terminal, subumbellate racemes, consisting of ten to fifteen flowers. It occurs in shady places amongst shrubs at Durban, Natal, differing in that respect from the other species in general which inhabit rocky, stony, or sandy places, and fully exposed to the sun, thus giving rise to the generic name. To the specialist the plant is a curiosity, and certainly worth growing on that account; but unless the flowers are produced in great abundance, the general cultivator has little chance of being captivated by their modest but unassuming beauty. Crucifers are probably very seldom made the subjects of cultivation in stove temperature.

A Good Whitewash.—Gardeners more than most men, except builders, use whitewash—in pits, greenhouses, bothies, and the various structures found in gardens, both private and market. We give a recipe for whitewash, extracted from the pages of our contemporary, the *Irish Farm, Forest and Garden*, of January 15:—"Get half a bushel of freshly burned lime; slake it with boiling water; cover it during the process to keep in the steam. Strain the liquid through a fine sieve, and add to it 7 lb. of salt, previously well dissolved in warm

water; 3 lb. of ground rice, boiled to a thin paste and stirred in boiling hot; ½ lb. of powdered Spanish whiting, and 1 lb. of clean glue, which has been previously dissolved by soaking it well, and then hanging it over a slow fire, in a small kettle within a large one filled with water. Add 5 gal. of hot water to the mixture, stir it well, and let it stand a few days covered from dirt. It must be put on quite hot. For this purpose it can be kept in a kettle on a portable furnace. A whitewash made after this fashion will last for years." Such a holdfast whitewash as these compounds would make might be entrusted to entomb insects and their eggs more effectually than that usually compounded from lime alone.

PLANTS AND THEIR CULTURE.

POTTING FERNS.

The various kinds of Ferns should be potted in rotation as the specimens commence to grow, after which time any delay in the operation will be attended with injury to the plants. Most kinds require copious supplies of water and a shaded situation, especially whilst developing their fronds; their pots should be well drained, and for appearance sake need not be large in comparison with the size of the plants, for, provided the watering be well attended to, even the most robust sorts, including the arboreal species may be preserved in a healthy condition when grown in closely confined root space.

Adiantums, Gleichenias, Todeas, &c.

Numerous varieties—such, for instance, as Adiantum cuneatum, A. gracillimum, A. Farleyense, A. rhodophyllum, &c., and the Aspleniums, Davallias, Blechnums, Lomarias, Nephrolepis, Pteris, &c.—succeed best in a compost formed of fibry peat and loam in about equal parts, mixed with sufficient sand, and powdered soft bricks or charcoal to keep it porous, and it should be used more or less coarse according to the size of the plants. Some others do best without loam; *e.g.*, most of the Gleichenias—whose roots and rhizomes are much ramified—do best in rough fibrous peat. The choice kinds of Gymnogrammas, Lygodiums, and Cheilanthes, also prefer peat alone, as do the Todeas, Trichomanes, and Hymenophyllums. For these latter filmy species good fibry material should be selected, well incorporated with silver-sand, and finely crushed porous brick. Success in growing these lies mainly in choosing a suitable situation for their cases—a cool although not draughty corner, entirely shaded from the sun's rays, so that the glass needs no shading material placed over it, answers excellently, and they can be either planted out amongst grotesque rockwork, or kept in well-drained pots or pans.

Kinds for Baskets and Rustic Blocks.

Some Ferns are admirably adapted for growing in baskets, possessing a pleasing appearance when judiciously mixed or grown separately in them. The following are a few of the kinds useful for this purpose:—Adiantum cuneatum, A. gracillimum, Davallia Mariesii, and its variety cristata; D. Mooreana, D. tenuifolia Veitchiana, Nephrolepis tuberosa, N. exaltata, Goniophlebium subauriculatum, &c. The basket mode of culture demands unremitting attention to keep the plants supplied with water; this done, some species will continue in good condition for years without being replanted. We have here a large basket of Davallia bullata in perfect health that has not had any fresh compost given it for upwards of thirteen years. Platycerium alcicorne, P. grande, &c., are quaint subjects for cultivating on blocks of wood or stone placed against a shaded wall. The blocks should be padded with fibry peat and sphagnum moss, to which the plants may be secured, and by being syringed daily the peat may be kept sufficiently moist to support the plants.

Sowing Fern Spores.

To be successful in raising plants from spores, the fronds must be gathered just before the spore-cases are ready to burst, and the spores should be rubbed out and distributed upon the surface of soil prepared as follows:—Shallow pans should be thoroughly drained, and firmly filled with a mixture of fine peat, powdered brick, and silver-sand, which should be soaked and drained before the seeds are sowed. The pans must be placed in a shaded, moist, and rather close situation. *Thomas Coomber, The Hendre Gardens.*

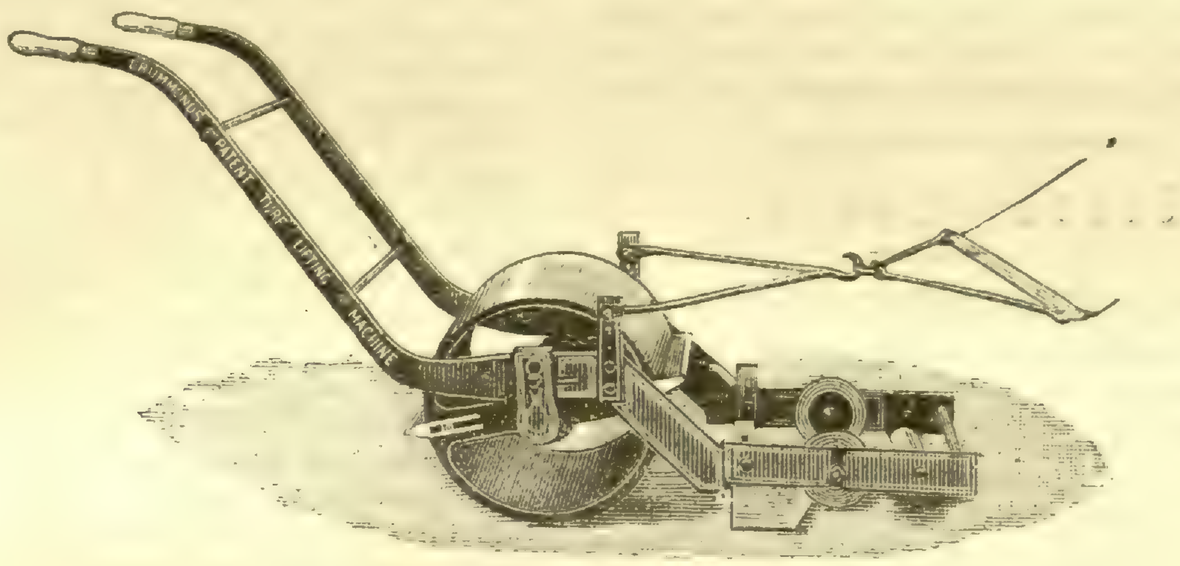


Fig. 56.—Turf-lifting machine.

DRUMMOND'S TURF-LIFTING MACHINE.

Mr. F. T. Drummond, Coton, Bridgenorth, Salop, the inventor of this new machine for the gardener (fig. 56), says:—"It is well known that for years gardeners have been wishing for something to alleviate one of the most laborious duties they have in their profession. Every gardener knows what a labour it is to lift a piece of turf, what a time it takes to get through the preliminaries. When a man has first to take a line and edging iron, and cut parallel lines along the turf he has decided to cut, he has only cut the width. He must now cross them with cuts running at right angles to the lines previously cut. He has now decided the length only; then follows the laborious part of the work—lifting the turf." Mr. F. T. Drummond claims with his machine to cut the length of, lift the turf, and get it ready to wheel away while the man is stretching his line preparatory to lifting the turf by hand.

"An important advantage in the machine-cut turf over the hand-cut, is that the machine cuts its turf true in every way, the length, width, and thickness; having the appearance of having come out of a mould. The machine was exhibited at the Royal Horticultural Society's show, Liverpool, last year, where it at once won the good opinions of all who saw and examined it, and was awarded the Society's Certificate of Merit."

[A machine that will work easily, rapidly, and with accuracy, will make turf laying a pleasant occupation, saving many a backache to gardeners present and future. Ed.]

COLONIAL NOTES.

MAURITIUS.

Mr. Horne, the Director of the Public Forests and Gardens of the island, has furnished an elaborate report on the industries which it is desirable to foster in the present depressed state of the sugar trade. Mr. Horne does not doubt but that in the future, as in the past, the cultivation of the Sugar-cane must be the principal occupation of the agriculturists of the island, but he points out that many other resources are open to them, and recommends, moreover, the appointment of an agricultural chemist to advise in matters connected with Sugar-cane growing and its management. Mr. Horne suggests, in addition, the extended cultivation of Cocoa-nut Palms, Cacao, or Chocolate, Coffee, Tea, Dates, oil-nuts, Elais, Betel-nuts, and other Palms, various cereals, starches, Indigo, Anatto, oil-seeds of various kinds, Bananas, Pine-apples and other fruits, Ginger, spices, fibre-plants, Cotton, silk, indiarubber, Tobacco, dye-woods, and a variety of other plants and their products—a list which will give some idea of the resources that are open to the cultivator in the tropics if other circumstances be propitious. Cinchona does not prosper in the island.

Pandanus Veitchii.

In the *Gardeners' Chronicle* of December 25, under the heading of "Pandanus variegatus," Mr. Watson, of Kew, asks, "Can any one say if the leaves of Pandanus Veitchii are green in old plants?" I can assure him that such is the case. In these gardens we have some of the finest specimens to be seen anywhere in the tropical world in young plants, both of the Pandanus javanicus variegatus and of P. Veitchii, and both of these turn entirely green after a time.

Of the two P. Veitchii is by far the handsomest, but it varies considerably in different plants. In some the centre leaves are quite white, without the least green colouring; these take a long time before making large plants. I have known plants of this form remain about 18 inches high for three or four years, and then start away into fast growth, whilst others with the ordinary variegation have grown during the same period to at least 8 feet high. From 6 to 8 feet P. Veitchii loses most of its variegation—only a faint streak of white is to be seen on the margins of some of the centre leaves; at 10 feet all variegation is lost, but it is still a handsome plant. If planted where it has plenty of space to develope, it grows in a dense regular form, increasing by many shoots from the bottom, in width and height in about equal proportions; in plants of five or six years old the diameter has a little the best of it. We have now some grand specimens of this age about 12 feet high and 15 feet in diameter. Our best plants of P. javanicus variegatus are 18 feet high, with immense round heads. This kind does not make such handsome plants as P. Veitchii, as it throws out much stronger branches, and these get to be so heavy with the mass of foliage that they break down with a strong wind, the junction of the branch with the stem being the weakest part of the plant. Both kinds after being cut down send out a great mass of young shoots, which are always beautifully variegated; these in their turn grow strong, and become quite green.

Our stock of decorative plants of these Pandanus (which we use freely) is always replenished by taking off a quantity of these young shoots, each of which is furnished with a number of roots. In cutting down our large plants the branches, each one being

already a large plant, are often taken and planted amongst more valuable plants to give shelter against the wind, and to furnish the space in the meantime whilst the better kinds are gaining strength. As a shelter against the wind they are invaluable, on account of their quick growth and dense habit; and P. javanicus is very useful as a high impassable barrier, even against cattle, the sharp hooked spines on the leaves being most effective for this purpose. Planted about 6 feet apart, the plants soon fill up the spaces between each other, and the long thorny leaves overlap, and the barrier is complete. *Jno. F. Waby, Botanic Gardens, British Guiana.*

FRUITS UNDER GLASS.

PEACHES.

Attend to the disbudding of the trees in the early house, doing it by degrees, so that the trees may not experience any check in the operation, and in the carrying out of which the formation of the tree for next year must not be lost sight of, as the side-buds now left, as close to the base of the individual shoots as possible, will balance the growth of the tree for another year. Damp the trees overhead after the fruit is set, more or less morning and afternoon on bright days, and air at a night temperature of 50°—55°, to 60° by day, with fire-heat, and 70° to 75° with sun-heat, and a free circulation of fresh air should be admitted to the house at the same time. This, however, should be reduced gradually, and taken off sufficiently early in the afternoon to run the temperature up to between 70° and 75° at closing time, when the trees should, as already advised, be syringed.

Cucumbers.

The plants which have been in bearing for the last three or four months will now be the better for a surface dressing after scraping off the old soil. The compost used may consist of three parts light loam and one of short dung. This will have an invigorating effect on the exhausted energies of the plants. Keep the younger growths tied to the trellis, but not too tightly. The shoots should be trained thinly rather than otherwise over the space allotted to them. After the roots have pushed into the surface dressing, occasional waterings with tepid liquid manure will be more assistance to the plants. Aim at a night temperature of 65°, running it up to 85° at closing time early in the afternoon, when the plants should be well damped overhead with warm water, as they should also be done on bright mornings. If these temperatures and atmospherical conditions are maintained, together with a bottom-heat of from 80° to 90°, the plants will make satisfactory growth and fruit freely. Should mildew—as the result of a low temperature and over-humid atmosphere—attack the plants, dust the affected leaves while damp with the flowers of sulphur, and afterwards maintain a warmer and drier atmospheric temperature. Shift young plants (intended for trellis trimming) as they require more room at the roots, putting ready for planting on the mounds. Plants intended for fruiting in hotbeds may be planted therein as soon as they have made two rough leaves, pressing the soil firmly about the roots in planting, and stopping the plants as soon as they make fresh growth to cause them to branch.

Strawberries.

Plants swelling their fruits will be greatly benefited by being watered with Beeson's or some other manure at about the rate of 3 lb. to 10 gals. of water. This, however, must not be poured indiscriminately over the leaves and fruit, as it would be liable to scar them, but should be poured in at the side of the pots, so as not to wet the fruit or crowns of the plants. Syringe the plants thoroughly overhead morning and afternoon, except when in flower, and when the fruit is approaching maturity, when a somewhat dry and airy atmosphere should be maintained.

Succession Plants.

With an increase of light there will be no difficulty in securing a good set of fruit now, as the flowers are now more plentiful. When the fruit is set reduce the number on each plant to ten or twelve of the best sized berries, and pinch out all flower-spikes that show on the plants afterwards, so as to concentrate the energies of each plant to the swelling and ripening of large fruits. Fresh batches of plants should be introduced into heat every week or ten days.

Temperatures.

For plants swelling their fruits a night temperature of from 55° to 60° should be aimed at, and 10° higher by day, with fire-heat, running it up to 80° or 90° at closing time. A dry buoyant atmosphere and a temperature of 50° at night, and 10° or 15° higher by sun-heat should be maintained during the flowering stage of the plants. *H. W. Ward, Longford Castle.*

ROBERTS' WHITE GROS COLMAR GRAPE.

The subject of the present note is a seedling form of the variety Gros Colmar, in form of bunch, berry, and leaf nearly identical with it. The bunch shown (fig. 57) well represents the Grape, and is two-thirds of the actual size. It is, like its namesake, a long keeper, has a rich pleasing tint of pale yellow when thoroughly ripened, and will form a welcome variety for the winter dessert. The flesh is sugary but not rich, and partakes of the characteristics of the Isabella and other Grapes of American origin.

The raiser is Mr. J. Roberts, head gardener to Lady Emily Howard, Charlville Forest, Bury, Tullamore, King's Co., Ireland, and to whom we are indebted for the opportunity of engraving the fruit.

STOVE PLANTS.

THYRSACANTHUS RUTILANS.

This is an erect habited, free-growing, cool stove plant, producing in winter numerous showy, long drooping panicles of bright crimson flowers of tubular form. Though often met with where large collections of plants are grown, it does not find its way into amateur collections as freely as its merits entitle it to do. Long as I have been connected with plant-houses and their inmates, I do not remember to have seen other than the species named rutilans, though I have reason to believe that others exist, such as T. Schomburgkianus and T. strictus, unless, indeed, one or the other of these names is a synonym. Besides being very free flowering as young plants, and at a season when flowers are desirable, the above species has the merit besides of being a very constant evergreen. One particular merit the plant possesses beyond even these is the great freedom with which it can be grown in the smallest of plant structures, in itself no mean consideration. Independently of its general decorative merits, it is when in flower and grown in suitable form a very useful subject for dinner-table decoration, for which plants of so graceful a habit are by no means too numerous. Beyond and above all I look upon this particular plant as a veritable prodigy amongst flowering plants, in the exceptional habit it has of extending its panicles of flowers to such a length as to cause them—at least under good artificial culture—to reach the ground; although the panicles are thread-like and weak, not like those of the Medinilla for instance, the weight of which might cause them to droop.

To grow young plants well cuttings should be inserted into sandy soil early in the month of April in each year. They root readily with slight protection when dibbled into 48-sized pots, or inserted singly into small 60-sized. Plunged into bottom-heat the roots form promptly; after a time they may be shifted into a larger pot, with good loamy soil, with about one-third of leaf-mould, and a liberal addition of silver-sand. Cuttings so treated should not be shifted into larger than 48-sized pots during the first year, when, aided by a moist heat, &c., they form neat young stuff for flowering during the following winter. When larger specimens have to be treated care must be taken to shift them at least once annually, about the first week in the month of May. At each shift it is desirable to remove as much of the old soil from the roots as possible, without causing them undue injury; and in repotting small shifts at a time should only be given, and in thoroughly workmanlike manner, as the soil should be pressed firmly throughout, and especially upon the surface. If neglect in these matters does not shorten the actual life of the plants, it will certainly cause impairment of health and vigour, and great disfigurement from the loss of their lower leaves. As in the case of all evergreens the leaves ought to be maintained in health not only on the score of health and freedom of flowering, but for the equally important matter of appearance.

The Thyrsacanthus is very subject to scale, and wherever these pests exist in mixed plant-houses they invariably select the subjects most suitable to their tastes. *William Earley.*

SCOTLAND.

THE SCOTTISH PRIMULA AND AURICULA SOCIETY.

The meeting, as previously announced, for the formation of this Society took place in 5, St Andrew Square, Edinburgh, on Saturday, the 12th inst. Mr. Robert Cathcart, Pitcarlie, Fife, was voted to the chair, and called upon Mr. W. Straton, Annfield, Broughty Ferry, to give a statement of the circumstances and proceedings which had led to the calling of the meeting as had been done by circular and by announcements in the Press. Mr. Straton said the desire to organise a society in Scotland for the encouragement of the culture of the Auricula was strong in the minds of all interested in the flower. Considerable correspondence had recently passed between the principal Scotch growers and himself on the subject. It was the general wish that the Society should have its head-quarters in Edinburgh, and with the view to attain this object in co-operation with the Royal Caledonian Horticultural Society overtures had been made to that Society for its sympathy and countenance in the movement, which were, however, declined. These were the circumstances that had led to the meeting then assembled. It was further stated that the sum of £16 had been received towards the formation of a guarantee fund, and that several other promises of contributions were assured, and that there would be plenty of support of that kind to encourage them to proceed with the purpose in view.

A discussion then followed bearing on the prospects of success that would probably attend the formation of such a society as that proposed. Mr. Straton assured the meeting that they might depend on having at least from 400 to 500 exhibits of Auriculas alone at the first show, and Mr. Lindsay, Royal Botanic Gardens, said there was such a wealth of allies of the Auricula about the time the show would be held, that there was no doubt an interesting and attractive show could be assured. Mr. Dunn moved that a society for the purpose in view should be formed. The title of the Society was then considered, and it was agreed that it should be "The Scottish Primula and Auricula Society." A Council and office-bearers were then elected. Mr. Cathcart was elected President, Mr. Boyd, Faldonside, Melrose, Vice-President; Mr. Straton, Hon. Secretary and Treasurer; Mr. Grieve, Pilrig Nursery, Edinburgh, Assistant-Secretary; eleven other gentlemen, representative of the districts that had been moving in the matter, were also eected on the committee, and from these were chosen Messrs. Straton, Milne, Greive, and Munro, to draw up a schedule which is to be issued immediately, and to arrange for the first show, which is to be held on May 4.

Natural History Society of Aberdeen.

The members of this Society held their usual monthly meeting in the Physiology class-room, University Buildings, Aberdeen. The President, Professor J. W. H. Trail, occupied the chair. Professor McWilliams and Mr. Angus Macgillvray were admitted members of the Society. Professor Trail showed specimens of Shetland plants collected by Mr. W. H. Beeby, making comments on each of the

specimens. Mr. John Roy, the Secretary of the Society, read a paper relating to early local discoverers in botany, in the course of which he said:—

"My object is to endeavour to ascertain who were the first discoverers of particular plants in the north-east of Scotland, or who were the first to make known the fact that the plants existed in that part of the country, what the names of the recorders were, and if possible to ascertain something about them. The earliest name I have found hitherto is D. Cargill, about 1620—1650. Who or what was he? He records the finding of two seaweeds at Aberdeen. Hooker calls him Dr. Cargill, and refers to Lightfoot's *Flora Scotica*, but there he is simply in one place Mr. Cargill, and in the other D. Cargill. Any further information about him would be very desirable. We then pass over a long interval, and come down to Dr. David Skene, who lived in Aberdeen about the middle of last century, and who died in Aberdeen in 1771 at the early age of thirty-six. Fortunately, his MSS. still exist, and were used to a certain extent by Dr. Dickie and Dr. Murray."

"The next of whose discoveries we have some account is the Rev. John Lightfoot, who travelled in Scotland in 1772. His *Flora Scotica* is the result of his observations. He was born in Gloucestershire in 1735. He studied at Oxford, entered the Church, and was curate latterly at Uxbridge. He was specially skilled in conchology as well as in botany. In the latter he was well acquainted with foreign as well as British plants. He accompanied Mr. Pennant in his Scottish tour. He had also for his travelling companion Rev. Mr. Stewart, of Killier, an excellent scholar as well as botanist, who seems to have given him much assistance, particularly with local and Gaelic names of plants. His book appeared in 1778. He died very suddenly, in 1788, at the age of fifty-three. The publication of his *Flora* marks a definite epoch in Scottish botany. Three names next occur almost simultaneously—Mackay, Don, and Brown—and, indeed, their discoveries are a good deal mixed up together. I gather that most of Brown's work must have been done in 1791, or a year before or after, at the time he was studying medicine in Aberdeen. Of course I am referring to the famous Robert Brown, who is so well known as the greatest botanist of his time. His labours in our field, however, appear not to have been much known here, for Dr. Dickie does not refer to his discoveries in Aberdeenshire. I am mainly indebted to Withering's *Arrangement* for Brown's notes." Mr. Roy alluded to a selection of specimens, numbering about twenty-five in all, to show how closely Robert Brown's name should be associated with botanical discovery in Aberdeenshire. He then touched upon the names of Mackay and Don, and in conclusion promised to read at a future meeting of the Society a paper dealing with the names of Professor W. Duncan and Dr. William Morren, who flourished about 1800 and 1814 respectively, and the latter of whom made a number of important discoveries in Aberdeenshire. Mr. Robert Gray then read a paper on a voyage to the Arctic Regions in 1886. The paper, which was illustrated by diagrams, was very instructive. Cordial votes of thanks were accorded to those who submitted communications, and a similar compliment being paid to the President, the proceedings terminated.

At a meeting held on Tuesday the 15th inst., Professor Trail in the chair, an interesting collection of varied botanical objects and other natural history specimens was shown. One of the most interesting features in the botanical section was a specimen of Eriophorum alpinum, found in the Moss of Restenneth, near Forfar, by George Don, the Forfar naturalist, in 1791. Mr. Roy, to whom the specimen belongs, explained that it is now extinct in Britain; that, so far as known, it never grew in any other place in the country than Restenneth, and that no specimen of it had been found in the Moss since the beginning of the century. In 1793 or 1794 the Moss of Restenneth was drained, and this was regarded as the cause of the extinction of the species. The President drew attention to the prevalence of the Pine beetle in a neighbouring wood. Professor Trail stated it had not before been observed in Aberdeenshire.

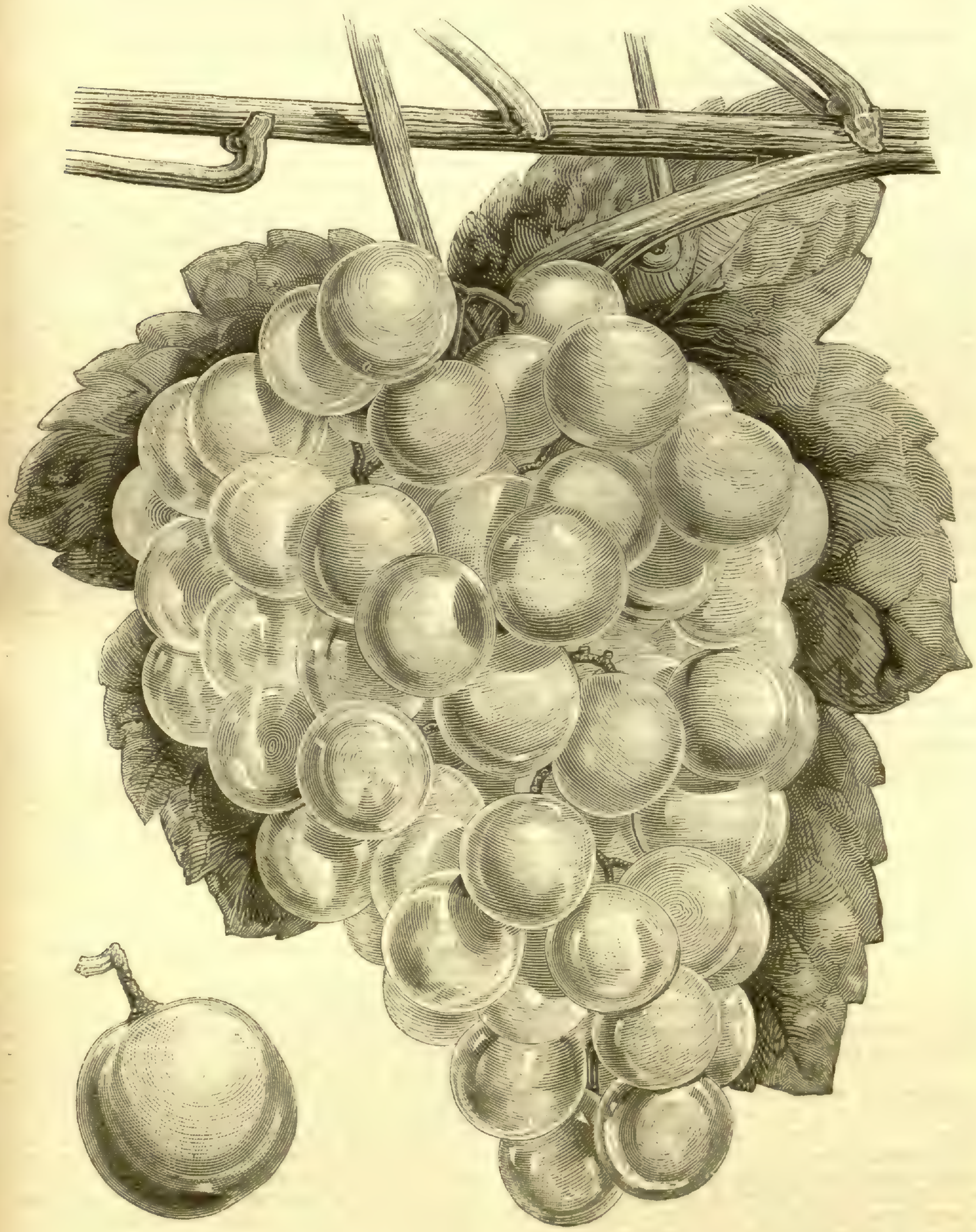


Fig. 57.—Charleville Gros Colmar: colour yellowish-white. (see p. 254.)

North of Scotland Horticultural Association.

The usual monthly meeting of this Association was held in the Christian Institute, Aberdeen, on Friday evening, the 21st ult. Before proceeding with the business of the evening, the President, Mr. Robson, presented the Secretary, Mr. Wyllie, with a timepiece as a mark of the appreciation in which he is held by the members. Mr. Henderson, Wellwood, Cults (near Aberdeen), gave an address on the "Past Position, Present Condition, and Future Prospects of Horticulture," at the conclusion of which he suggested that something should be done by the Society in commemoration of the Queen's Jubilee. Other papers having been read a lively discussion ensued. A vote of thanks to the President terminated the proceedings.

The Hardy Fruit Garden.

PRUNING GOOSEBERRY BUSHES.

Where this operation has been delayed, owing to the liability of the buds to be destroyed by birds, but little time must now be lost in pruning them, as the buds are getting forward. After the operation give the bushes a syringing of lime-wash, with a little soot added, which will make the buds distasteful to them.

Strawberries.

If fresh plantations were made last autumn the plants will be found to be slightly lifted out of the ground by frost, and must be made firm again by treading. If there should be weeds between the rows, the Dutch hoe must be used there, and the weeds afterwards raked off. The whole of the plantation of this fruit should now be heavily mulched for the season, long stable litter being the most suitable material for this purpose; the space between the rows should previously be dusted over with air-slaked lime. I find it a good plan to do this

work at this early date, before the plants make their growths; for if left till later in the season, the tender growths get injured and also the mulching is washed thoroughly clean by the rains before the plants come into bloom. In Strawberry cultivation I do not advocate the growing of many varieties, but selections of those that are found most suitable to the particular soil and district, and which will succeed each other, and thus produce a continuous supply over a lengthened period of time.

My practice here is to plant Vicomtesse Héricart de Thury and Sir Joseph Paxton on south and west borders, and on the open quarters Sir Joseph Paxton, Oxonian, Frogmore Late Pine, and Elton Pine. It is best to plant some of these kinds annually—none should be kept after the third year, destroying them immediately after the fruit is all cleared, giving a heavy dressing of manure, bastard trenching the ground, turning in the old plants with the manure, then make the ground firm by rolling and treading and replant with either rooted runners in pots or old forced plants. This applies to those on the borders as I am unable to change the ground for these; of course those on the open quarter of ground can be changed more frequently. The rows of plants are 2 feet 6 inches asunder, and 15 inches between in the rows. *E. Ward, Hewell, Bromsgrove.*

Orchid Notes and Gleanings.

BLETIA HYACINTHINA.

We have found this pretty little Chinese Orchid to be perfectly hardy grown out-of-doors in this country, and as it is, when in full flower, very ornamental, it should find a place wherever hardy Orchids are cultivated. The leaves are long and narrow, grass-like, and of a pleasant tint of green, while the flowers, which are produced in terminal racemes, are of a desirable rosy-pink colour, though specimens with dark or very light flowers are not unfrequently to be met with. Dampish leaf-mould and sand would seem to suit this pretty Orchid admirably—at least, so far as the production of large healthy foliage is concerned; but, in my opinion, to flower it in anything like a satisfactory manner a good admixture will be found in a small quantity of broken limestone. The roots are large for the plant's size, hard and fleshy, and increase pretty quickly when placed in favourable surroundings. A little shade is, perhaps, of advantage in the cultivation of this Orchid. *A. D. Webster.*

Flowering of Angræcum sesquipedale.

I wrote in your issue of February 5, under the head of "Orchid Notes and Gleanings," of a plant of Angræcum sesquipedale at Chatsworth, flowering with three spikes, three flowers being on one spike, and one on each of the others. I have here a plant growing in an ordinary stove, just going out of flower which has developed eight fine flowers on three spikes, viz., three each on two spikes, and two on the other. *Jas. Hopkins, High Cross, Framfield.*

Epidendrum Endresii.

A small plant of this rare and beautiful little gem was one of the many striking plants seen in flower during a recent visit to Messrs. James Veitch & Son's collection. Its dwarf habit and graceful white and lilac flowers render the plant very attractive, and one cannot refrain from wishing it may become more common in collections.

Dendrobium endocharis.

Hybrid Orchids are generally considered to be free flowerers, and this one seems no exception to the rule. Whether it is owing to the care and judgment exercised in the selection of the parents or not matters but little, so long as this result is obtained. Still this is probably the case, as hybrids are well known to partake largely of the characters of their parents. D. endocharis is certainly a very handsome winter flowerer, and a number of plants are now in perfection at the Messrs. Veitch's.

Masdevallia triangularis.

This is one of the early flowering species of this neat little genus, and a very free flowerer too. A couple of plants in the Kew collection are literally bristling with flowers and buds, some fifty in number, and will be in perfection in a short time. It is one of the older species, and was described by Lindley in 1846. *R. A. Rolfe.*

Home Correspondence.

EARTHWORMS WITH BIFID HINDER ENDS.—In the *Annals and Magazine of Natural History*, vol. xvi., p. 475, I drew attention to two specimens of Lumbrici with bifid hinder ends; one was the common earthworm, L. terrestris, and the other the Brandling, L. fœtidus. Shortly after my account was published Dr. Hunt, instigated by it, stated that there was a similarly bifid specimen in the Leyden Museum. Since that time I have received another specimen, which I gave to the Hunterian Museum, and I have now one lying before me. It appears so clear that the phenomenon of bifid hinder ends is by no means rare, that I am desirous of making an inquiry into the extent of its frequency. Your readers would assist me greatly in this if they would forward me such examples as they may meet with by post, packed in a little mould and moss, *F. Jeffrey Bell, British Museum (Natural History), Cromwell Road, London, S.W.*

DRESDEN INTERNATIONAL EXHIBITION.—It is amusing to read Professor Reichenbach's communications, "that the German Government has given all facilities for the importation of plants from England which are for this exhibition," but he should have added the word, "only" all other importations of plants from England being prohibited. Surely no English firms will be fools enough to exhibit where no sales can be effected. Until this stupid regulation is rescinded we are buying nothing in Germany that can be procured elsewhere. *Paul & Son.*

FRUITING OF HEDYCHIUM GARDNERIANUM.—As is fairly well known, this handsome East Indian plant is almost hardy in many places in this country, and flowers profusely if allowed sufficient root space in a cool conservatory. Under these conditions, however, it does not seem to "set," even if the cultivator attempts to fertilise the flowers artificially. In heat, without any artificial aid, the blossoms set freely, and during the winter the bursting carpels, the internal parts of which are a bright orange-red, are rendered additionally attractive by the bright deep red aril which clothes the closely packed seeds. Even apart from the beauty of the flowers during summer and autumn, Hedychium Gardnerianum is worth growing as a stove plant for its handsome infructescence during the winter months. A fine fruiting specimen is now one of the most conspicuous objects in the Palm-house at Kew. *G. N.*

STANDARD ROSES.—I thank "R. D." for his welcome support to the so-called doomed standard Roses. Those who have not noted some of the more recent transactions among Briers may rest assured that if doomed they are not likely to disappear just yet. I have long defended standard Roses for, among other reasons, the service they render us of raising the blooms up to the level of our easy enjoyment. But by raising the plants above the stifling atmosphere, shut in in back and forecourt gardens in towns or the suburbs, a yet more distinguished service is rendered by the so well abused walking-sticks, that is, the elevating stems of standard Roses. *Rosa.*

TRUE PARASITICAL PLANTS.—In one of your recent numbers there is a very interesting notice upon the cultivation of true parasitical plants. It would be a very curious specialty for an amateur or a botanical gardener of limited means, to devote himself to. I think there were attempts made in Holland (when and where, I cannot say) to grow on some species of Cissus some species of Rafflesia; I never heard any more about it. In the Botanic Garden of Berlin, I was shown on one of the lawns some large patches of Lathræa clandestina, and real gems they were, and the head of the garden was not a little proud of them, and justly so. In the copies of the publication of the Hakluyt Society, I very often find a very curious (although out of place there) sort of mildew like a very pretty black lichen. What can it be? Also, upon what plants are the Gerardias of the United States of America parasites? *Jean van Volxem.*

TILLANDSIA BULBOSA.—This is one of the most easily grown, and at the same time one of the most curious Bromeliads in cultivation. All it requires is to be attached to a piece of Tree Fern stem or similar substance, and to be suspended near the glass in a moist stove. The convolute leaves—not unlike those of the spiral Rush, but much shorter—spring from a swollen bulb-like base; the inflorescence, as well as a portion of the leaves immediately subtending it, is a rosy-red. Some well-flowered specimens are now to be seen in the Kew collection. *G. N.*

OUTDOOR GRAPES.—The article upon this subject in the *Gardeners' Chronicle* of February 12 carries my thoughts back many years to a time when people valued outdoor Grapes and such fruit as they could grow in their gardens for home consumption. I remember tasting fairly good wine made from Grapes grown near Stamford Street, Blackfriars, on a Vine which often bore Grapes enough to make a nine-gallon cask of wine. There are still old Vines in that neighbourhood, some of which have a history. It is said that the seasons have changed very much of late years, but I find that Grapes will still ripen on a good dark red or brown wall in the southern counties. If the bricks are light in colour it is a good plan to stain them with lamp-black and oil, to attract and retain the sun's heat. When neatly done, and the joints struck, it does not look unsightly. Glass is now so cheap as to be within the reach of almost every gardener, and as the humblest structure works wonders with the Vine, it is scarcely worth while trying to do without some kind of glass shelter. To those, however, who wish to try the experiment of growing Grapes out-of-doors I strongly recommend July Frontignan, as the earliest and best flavoured purple Grape for the purpose. I am surprised that it is so little known. It deserves a cool greenhouse, glass wall, or ground vinery, but it will ripen in the open better than any other Grape. I first noticed the variety growing on a red brick farmhouse in Hants thirty years ago, and I still keep it in stock. Like all other outdoor Grapes, and indeed all small Grapes wherever grown, it is useless for market purposes in England. Flavour alone will not suffice; there must be size also to please the British public. The July Frontignan is, however, a delicious Grape, a sure cropper, and not liable to mildew. The best companion to it is the Royal Muscadine. See Mr. Barron's *Book on Vines*, p. 211. *W. R.*

THE ROYAL HORTICULTURAL SOCIETY.—Whatever may be the fortunes of this Society henceforth, it is certain that a light roomy building in which to hold its meetings—and it may be shows—is indispensable. Whilst it remains at South Kensington it has, subject to certain parochial arrangements, the use of the great conservatory, which is, without exception, the best building for light, and the most suitable for the purpose to be found in London. It is not merely important that the place in which plants are staged should be light for spectacular reasons, but having regard to the importance of light to the committees—the Floral Committee especially—in judging of the merits of new things it is of the greatest consequence that plants found so bright and beautiful in the country light should suffer nothing when submitted to the judgment of the committees in London. When it is suggested that the Society should remove its headquarters to Chiswick a strong outcry is raised, although it must be admitted that now, with several competing lines of rail, and a regular tramcar service, this place is not so very much more difficult to reach than is the Society's present quarters in the Albert Hall. But it can be pleaded very strongly that at Chiswick much brighter and purer light may be found than can be obtained even at South Kensington, much less nearer London, and if it were finally determined to make the old gardens the home of the Society, whilst light and not expensive buildings might be erected there if needed, certainly the large vinery offers a first-rate place for committee meetings and all ordinary small shows [rather "forcing" in the dog days]. There is also the

advantage, that sundered somewhat from greater competitors for public favour—the Society might find in the residents of a wonderfully increasing neighbourhood a valuable body of local supporters. As far as the country is concerned there can be no doubt whatever but that the Society would gain in prestige were it to return to Chiswick. It was in association with that locality that the Royal Horticultural Society first obtained a reputation, and it is that association which will be remembered long after that with South Kensingtou is forgotten. Then there would always be the advantage, that the shows and meetings would be held in conjunction with the elements of interest found in the gardens, and these in the summer are many. Were the strength of the Society centered at Chiswick absoutely, the gardens could be greatly improved—indeed, they might become such a centre of horticulture as would astonish and delight gardeners everywhere. I have not yet heard any tangible argument why the Society's new home should be in London. There seem to be many reasons for its being found in the old classic region of Chiswick. *A. D.*

THE QUEEN'S JUBILEE: GARDENERS' ORPHAN HOMES.—Much as I approve of the suggestions of Mr. Penny and "H. J. C." anent this matter, I feel sure that in the present depressed state of agriculture, the consequent reduction of expense connected with gardening, and the low wages that gardeners receive, the scheme suggested is much too ambitious, and if attempted would surely fail. Though Mr. Penny suggests very modest sums indeed—"5*s.* from every gardener, and 2*s.* 6*d.* from journeymen, annually"—he does well to put the qualifying "if," because I am sure he would never get it. Why, how could he expect journeymen, who at most have 15*s.* per week, and many as little as 10*s.*, to give even the half-crown? I know they would not; whilst as to gardeners many hundreds do not receive more than 20*s.* a week, and must appear in decent clothing at all times, and their families also. It is, therefore, hardly reasonable to suppose that they would, or could, subscribe, unless the "screw" were twisted very tightly. There is an old saying, that "the unexpected generally happens," and if the saying were to prove true in this case, and some millionaire made us the offer of the buildings and the land for cultivation—in fact, put all in working order, conditionally on our maintaining the same—the offer would put us on our metal, and the thing would be accomplished, for many of us would be glad to subscribe at least four times 5*s.* per annum, and thus make up the lack of our less fortunate brethren. Having not a particle of faith to believe that such an offer will be made, and therefore none that the scheme (at present) is feasible, I suggest a more modest scheme, by which as gardeners we may appropriately celebrate this Jubilee; it is, that we combine in the effort to pull the Royal Horticultural Society out of the "Slough of Despond." There are two reasons why this would be an appropriate way of celebrating the Jubilee; first, it could not but be gratifying to the Queen, because of the personal interest the lamented Prince Consort took in the Royal Horticultural Society; and secondly (our help being tendered on the understanding that picnics, lawn-tennis, and giant bazaars for the sale of nicknacks shall be rigorously excluded), the new premises would be devoted solely to horticulture, and when once established fees from membership and charges for admission to shows, would render the scheme self-supporting, and thus poor gardeners would not be haunted by the nightmare of an annual subscription. The practical side is always best when money is concerned, and though I am but a poor gardener, I will give £5 if such a scheme be started, and pay it as soon as a treasurer is appointed. My name is known to the Editor, but in this place it is *W. H.*

BULB DISEASE AND ARTIFICIAL MANURE.—Your correspondent believes he has discovered that artificial manure is the cause of plant-disease; may it not be that the disease which has come under his observation has been coincident with the application of artificial manure? Why should the proper applications to the soil of the mineral elements of plants produce insect, fungoid, or any other class of disease? There are causes of disease quite independent of manures of any kind. Ireland was not remarkable for the free use of artificial manures when the Potato disease about forty years ago destroyed the crop; possibly a timely application of potash might have warded off the attack. The Vine growers of the Continent are not supposed to use much of the suspected nostrums, but their Vines were swept away by the Phylloxera; therefore it is possible that the bulb mite (it is very doubtful that the mite is the origin of the mischief) [not the least, we should say. Ed.] may attack bulbs whether they have ever been dressed with the nostrums or not. Your correspondent might reasonably have objected to the use of nostrums of unknown composition, as many of them contain chemicals which require to be used with great care, and if used improperly either kill the plants or reduce them to a sickly condition, in which case they are specially liable to the attack of any disease to which they may be exposed. There is now no necessity to have recourse to nostrums. Physiologists and chemists in this and other countries, notably M. Ville, of France, have thoroughly elucidated the principles of the growth of plants, and explained what are the elements which enter into their composition, and taught which of them are necessary to be added to ordinary soils to secure perfect growth. These are generally nitrogen, potash, and phosphorus. The addition of these in proper proportions [and at the right periods] to the soil will never produce disease or injure a plant in any way. *Edmund Tonks, Packwood, Knowle.*

FIREWOOD.—In addition to "bavins or pimps" for firewood, mentioned in the *Gardeners' Chronicle* of February 12, there are all the cones of Firs and Pines. One never sees these used in England; in Northern Italy, however, the empty cones of the Stone Pine, after the nuts have been removed, are universally utilised for lighting fires. The resin they contain makes them especially suited to this purpose. In England, however, people are carried off by the notion that everything must be done by machinery; and however cheap a thing may be, it is despised because it cannot be worked up on a large scale in some factory. Wherever one goes in Fir forests, he sees Fir cones strewing the ground besides twigs and brushwood. The cones require neither cutting nor tying; they might be simply gathered by children and carried in panniers on donkeys to a drying shed. In the summer they would become perfectly dry, and fit for use in winter. Probably all cones contain resin, more or less, which would make them still more suited to lighting fires. Who knows how many empty or partially filled railway-trucks and waggons are moving along the length and breadth of the country? These might, perhaps, carry this cheap material at almost nominal prices to centres of population, where they might be distributed by means of hand or donkey carts, as many other things are. At all events, if the higher classes despise such small things, the lower classes would be unwise to do so. The true economy of a nation requires that nothing should be wasted, and the utilisation of these small things would, in addition, give employment to a number of children and others, for whom it would be difficult to find profitable work. There is no good reason why true economy should not be taught to children in schools. By this is meant the art of making good use of one's senses and brains to supplement deficiencies of income, that is, to make every possible use of surrounding materials, in order to live and make oneself more comfortable than conditions would otherwise admit of. It should not be forgotten that servants of the higher classes oppose any measures that have in them any semblance of economy, simply because now it is not their interest, nor the interest of the purveyors, to economise for the benefit of masters. If, however, this true economy were taught in schools, in time it would probably become an everyday thought of all the people high and low. It is every day becoming more evident that if all the resources of the country were utilised, less money would leave the country, and more of it be left for the use of its people. *E. Bonavia.*

HARDINESS OF CAMELLIAS.—In the month of September last I planted out-of-doors in a corner having a northern aspect some Camellias of double varieties, such as alba plena, Chandleri, and others, they are now full of bloom-buds, not having dropped any during this severe winter, and are as fresh as if they had been under the protection of a glasshouse. There are several others out-of-doors here of the single red seedling varieties which have been exposed to all weathers for several years. The best place to plant them we found to be a shady corner, or partially under the shade of large trees. The soil employed for these plants is a mixture of road drift and peat. If the possessors of large plants that are exceeding the space that can be allotted them were to plant them out in such places as those indicated in well drained sites the finer foliage and abundant if shorter-lived bloom would reward the little trouble incurred. *W. Woods, Oak Tree House, Woking.*

MYRIOCARPA STIPITATA.—This is a remarkably distinct and effective foliage plant, although closely allied to our common Nettle (Urtica). It is a plant of noble appearance, especially in a young state. It has large oval leaves of a pale greyish-green, with an irregular margin of a lighter colour. When grown on freely it produces leaves from 12 to 18 inches long and 6 to 9 inches broad. In habit of growth it may be compared with Ficus elastica, as it grows erect and does not branch until it has been topped. But as the leaves do not possess any great substance they are easily damaged, and old plants generally have a ragged appearance. However, it may easily be propagated from cuttings, which will make good plants the same season. For propagating purposes any old plants may be cut back, and these will soon produce side shoots, which may be taken off when they have made three or four leaves. As soon as the cuttings are taken off a little dry sand should be applied to the ends, to prevent bleeding; they will root freely in an ordinary propagating case, and as soon as the plants are sufficiently rooted they should be potted on, using rough peaty soil, and a little manure, with a liberal addition of coarse sand. As soon as the pots are well filled with roots liquid manure may be used freely. It is remarkable that this fine-foliage plant is not enumerated in the catalogues of the leading nurserymen, either under the name of Myriocarpa or Bœhmeria, with which genus it is sometimes included. *A. H.*

HINTS ON GROWING CALANTHE VEITCHII AND VESTITA.—About the latter part of March shake the pseudobulbs out, and cut off all old roots, and repot in a compost of two parts peat, one of loam in a rough state, adding a good portion of dried cowdung and sharp sand, The pots found best are 32's, these being of a useful size for indoor decoration, The pots should be made three parts full with crocks. The bulb is then placed on the soil, and held firm in position with a few small sticks. When this operation is complete place the pots in a stove, and give no water, except with the syringe, until roots are emitted, shading them from the direct rays of the sun, otherwise the foliage will lose its fleshy texture and get sickly looking. Calanthes require plenty of water at the roots when growing fast, and an occasional watering with liquid-manure with soot added proves very beneficial. If all go well, by the beginning of November the plants should commence to throw up their flower-spikes, which may be maintained in good appearance by the timely removal of decaying blooms. Give them sufficient water to maintain the foliage to the last, or as long as possible, as nothing injures the Calenthes so much as to lose their foliage just when the flowers are expanded. *W. G.*

THE PROPAGATOR.

BOUVARDIAS.

The old cut-back plants will now be making young growths, cuttings of which should be taken and inserted in properly crocked 3-inch pots filled with light sandy soil, and a surfacing of sand, which in the process of putting in the cuttings is worked down to the bases of the latter. The pots should then be plunged to the rims in a hotbed, or in a hand-light containing 6 inches deep of sawdust in a forcing-house, and the cuttings be watered through a fine rose to settle the soil about them. As soon as they are rooted they should be potted off singly into small 60-size pots, pinching out the points of the shoots as soon as the plants make fresh growth, to cause them to branch. If they are likely to become pot-bound at the roots before the second week in June, the plants should be shifted into 48's, using a compost consisting of three parts fibry loam and one of leaf-mould and sand. They should, (having been duly hardened off), be planted out in a warm border 16 inches apart each way the second or third week in June, in soil similar to that indicated, and be watered at the roots. By repeated stoppings of the shoots and attention in the way of giving water at the roots, these will make nice bushy plants by the end of August, when they should be potted up. *H. W. Ward.*

VEGETABLES.

VARIETIES OF EGG-PLANT *v.* CULTURE.

Now that the Aubergine is habitually found in our markets in late summer and autumn, and you quote prices of them as of other vegetables, fruits, &c., it may be presumed that these fruits—like the Tomato, which was looked upon so suspiciously a few years since—are destined to become common articles of consumption in this country. But whether this be so or not, I should like to ask whether the experience of others at all agrees with my own in connection with their culture during the past year? I have only a greenhouse certainly, but the seedling plants grew robustly, and flowered early and well, but all the earliest blooms proved blind and fell off. So persistent did this habit become, that I only secured a few fruits a month or so ago, and these did not develope at all kindly into the anticipated "eggs." I noticed similar examples to my own, shown in the best collection of vegetables staged last year, and am justified in imagining that the season—albeit an apparently favourable one—may not have been favourable to them. I grew the ordinary white-fruited variety. As the long purple-fruited variety seems to be that most generally sent over from the Continent to the metropolitan markets, I imagine it may be more hardy and a freer variety. What experience have your readers with home-grown "eggs"? *William Earley.*

Nonpareil Green-top Red Beet.

This is the same Beet that was referred to in the *Gardeners' Chronicle* of May 15, 1886, p. 628, as being much grown by the Cheltenham market gardeners. We have had the sort in our possession for nearly forty years, aud gardeners and market growers in this neighbourhood have grown it largely ever since. It is a dwarf green foliage variety, and therefore not fit for a flower-garden plant. The gardeners hereabouts prefer it to all others; first, because it has but very little foliage, and therefore a large quantity of roots can be grown in a small space; secondly, because the shape of the root is so good, being that of Wood's Early Frame Radish, and scarcely ever forked; third, because the colour is so good, being decidedly bright crimson, with a very faint streak; and, fourth, by reason of the fact that the earthy taste is not so apparent as in other kinds. It is, as stated in the *Gardeners' Chronicle*, a shy seeder; in fact, in bad seasons it is difficult to ripen the seed at all; but we think this may be remedied by having the seed grown on the Continent, where the summers are longer. *C. Dimmick & Sons, Ryde.*

NOTICES OF BOOKS.

A MANUAL OF ORCHIDACEOUS PLANTS CULTIVATED UNDER GLASS IN GREAT BRITAIN. *Part I. Odontoglossums.* (James Veitch & Sons.)

In the notice accompanying this, the first of the series, the authors say:—"This manual is being compiled to supply amateurs and cultivators of exotic Orchids with a fuller account of the principal genera, species, and varieties cultivated under glass than is contained in the manuals hitherto in use. The rapid extension of Orchid culture during the last quarter of a century, resulting from the increased taste for and appreciation of this beautiful and interesting order of plants, has in our opinion, created the *desideratum* which we are now attempting to supply. The prominent place, too, occupied by Orchids in the columns of the Horticultural Press, and the surprising amount of practical and varied information respecting them disseminated through its agency has also stimulated the desire to obtain all the leading facts in a condensed form, to which easy reference may at any time be made." With this lucid and modest statement is launched the initial number of this long expected and much desired work. None will accuse Messrs. Veitch of hastening rashly into print, for theirs is the oldest and the finest Orchid establishment in the world, and the one from which a very large proportion of the new things figured or described in other works have emanated. In their study of Orchids, therefore, over so long a period the authors must necessarily have collected a vast amount of information—botanical, cultural, and general—which cannot fail to be of benefit and interest to the large class of orchidists, and the equally large number of botanists and plantsmen who are interested in Orchids in all parts of the world.

Taking the part under notice (Odontoglossum) as a fair sample of those which will be devoted to the other great genera (and certainly no more perplexing genus could be selected to begin with) it may safely be asserted that Messrs. Veitch's *Manual* will form an accurate work of reference for all subjects relating to Orchids. For the scientific classification and sequence of the genera, with but trifling deviation, the arrangement of Bentham and Hooker as elaborated in their *Genera Plantarum* is followed, the whole being set forth in as plain language as possible. The part devoted to "Odontoglossum" extends over eighty pages, and is profusely illustrated with excellent engravings of the leading types or species and varieties, together with, in many cases, illustrations of the side view of the labellum, column, and crest, which are of material assistance to the observer who would acquire an intimate knowledge of Orchids. Still further assisting such observers, and giving information in which the whole subject of the geographical distribution of the genus Odontoglossum may be seen at a glance, are two folding maps, the one showing the homes of the genus in the Andean region of South America, and the other its distribution in Mexico and Central America. In both these maps the Odontoglossum habitats are coloured orange. and the name of each species is legibly printed in blue letters across the part from which it comes. This information, taken in conjunction with the names of the districts and towns near each, and the particulars of climate, altitude, and other matters of importance concerning the genus in general and each species or section given in the letter-press, cannot fail to be considered a boon to all Orchid growers, and a great simplifier of the culture of their plants.

The work is opened by a table of "The Essential Characters of Odontoglossum," followed by an exhaustive exposition of the genus, the relation which the species or types hold to each other, and the position which the endless number of supposed hybrids hold to them. Then follow remarks on the geographical distribution of the genus, culture, potting, temperature, watering, ventilation, and shading—all of which subjects are tersely dealt with, the temperatures in all cases being given in Centigrade, with the equivalent Fahrenheit in brackets. At p. 13 commences a "Synopsis of Species and Varieties," each species being briefly described in plain English, and references to its figures for identification given, after which its sub-varieties are mentioned and a general history of its introduction and any other information about it procurable given, the intelligibility of the whole being aided by numerous foot-notes in which extracts bearing on the case are often embodied.

In dealing with the supposed hybrid forms—such for example, as those between O. crispum and O. odoratum—Messrs. Veitch have joined all the forms to one or other of the types thus:—O. crispum Andersonianum, O. c. Ruckerianum, O. odoratum baphicanthum, O. o. deltoglossum, O. o. hebraicum, using much the same argument for the course they adopt as those who advocate the separate specific names given to known garden hybrids do, viz., the unbroken line of connection between the two opposite types, which advocates for independent distinctive names allege it is impossible to satisfactorily portion into so few as two headings, pointing to—as an instance of the difficulties in the way of such a course—the fact that O. Andersonianum has been known to bear flowers identical with those of O. hebraicum on the same inflorescence (Rchb. f., *Gardeners' Chronicle*, vol. xiii., p. 470). Be that as it may, Messrs. Veitch make out a very good case, and, as we have said before, from their long connection and everyday life with Orchids, their opinion is entitled to every consideration. Touching on this subject, the authors say:—"In dealing, therefore, with Odontoglossum nomenclature, it appears to us that the simplest course to follow is to bring all such forms under the species they most nearly approach. This plan is by no means free from objection, but it has at least the advantage of grouping together a number of allied forms which, if described under separate names. would leave the acknowledged confusion nearly where it was." It will, therefore, be seen that the change in the nomenclature has been made in a laudable attempt to render the subject more intelligible, and not with a view to disturb botanical work already done. Other changes in the enumeration of the species are the exclusion of O. roseum (Lindley), now referred to Cochlioda, and O. vexillarium, O. Phalænopsis, O. Roezlii, O. Weltoni, O. Warscewiczii, passed to Miltonia. The work is excellently printed by Messrs. H. M. Pollett & Co. In conclusion, it is almost unnecessary for us to recommend the perusal of this able work to all interested in Orchids; doubtless, it will speedily find its way into all quarters where the study is pursued.

THE KITCHEN GARDEN.

PEAS.

Early varieties can now be sown in the open whenever the ground is found to be in a good workable condition; a warm sheltered border facing south should, if possible, be selected for the earliest sowings. The distance between the rows must be determined in a great measure by the height of the varieties grown, and also whether it be intended to plant the space between the rows with an intervening crop. It being advisable to make the most of all early borders, it is a good practice to adopt the method of so arranging the earliest Pea sowings, as to admit of a row or two between of some early crop such as Potatos or Cauliflowers, which require a somewhat similar position and shelter, and would also come to maturity about the same date, and be cleared away together—the necessary staking of the Pea-rows affording a considerable break and shelter to the crops between duringfrost and cutting winds Sow in open drills 6 inches wide, and cover to the depth of 2 inches. Where the soil is at all stiff and unworkable great advantage is derived by the addition of some lighter compost, comprising a mixture of burnt ashes, leaf-soil, old potting, or other light soil, which should be strewn in the drills before, and after sowing, in sufficient quantity to cover the seeds to the required depth; protection should be given whenever the seedlings are well above-ground by first drawing the soil slightly up on either side of the rows, and afterwards staking; some sprays or branches of Spruce or Laurel can also be intermingled amongst the stakes, to afford an additional shelter. Those sown in pots and placed in gentle heat, as advised in a former Calendar, will now be sufficiently advanced to be removed to a cold frame and gradually hardened off, preparatory to being planted out next month; care must be taken that they do not in any way become drawn and weakly or they will never succeed ultimately. As they advance the lights should be entirely removed during the day, and never quite closed, unless for the purpose of excluding frost, or some other equally cogent reason.

Broad Beans.

These also, that were sown in heat under similar conditions to Peas, must also be prepared for planting out by receiving precisely the same treatment. Sowing should also be made in the open for succession, in double lines, the seed from 4 to 6 inches apart and 2 inches deep in the soil, at a distance of 3 feet between the rows. *J. Austen, Witley Court.*

THE WEATHER.

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 42° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.			ACCUMULATED.	
	Above or below the Mean for the week ending Feb. 14.	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 4, 1887.	Below 42° difference from Mean since Jan. 4, 1887.
Principal Wheat-producing Districts.		Day-deg.	Day-deg.	Day-deg.	Day-deg.
0. SCOTLAND, N. ...	1° above	5	27	+ 11	— 1
1. SCOTLAND, E. ...	1 below	2	45	+ 18	+ 2
2. ENGLAND, N.E. ...	5 below	0	53	+ 11	+ 29
3. ENGLAND, E. ...	6 below	0	54	— 9	+ 51
4. MIDLAND COS. ...	6 below	0	57	0	+ 51
5. ENGLAND, S. ...	7 below	0	53	— 2	+ 33
Principal Grazing, &c., Districts.					
6. SCOTLAND, W. ...	3 below	0	37	+ 5	+ 5
7. ENGLAND, N.W. ...	7 below	0	55	— 3	+ 40
8. ENGLAND, S.W. ...	8 below	0	50	— 21	+ 33
9. IRELAND, N. ...	3 below	3	35	+ 8	+ 10
10. IRELAND, S. ...	6 below	3	39	— 2	+ 20
— CHANNEL ISLANDS	7 below	0	36	— 29	+ 22

DISTRICTS.	RAINFALL.			BRIGHT SUNSHINE.	
	More or less than the Mean for the Week.	No. of Rainy Days since Jan. 4, 1887.	Total Fall since Jan. 4, 1887.	Percentage of possible duration for the Week.	Percentage of possible Duration since Jan. 4, 1887.
Principal Wheat-producing Districts.	Tenths of Inch.		Ins.		
0. SCOTLAND, N. ...	6 less	29	7.0	23	15
1. SCOTLAND, E. ...	6 less	22	3.2	29	25
2. ENGLAND, N.E. ...	4 less	19	1.9	35	23
3. ENGLAND, E. ...	5 less	15	1.7	62	29
4. MIDLAND COS. ...	6 less	17	2.3	45	25
5. ENGLAND, S. ...	6 less	16	2.1	34	20
Principal Grazing, &c., Districts.					
6. SCOTLAND, W. ...	9 less	23	5.9	32	20
7. ENGLAND, N.W. ...	7 less	20	3.0	46	24
8. ENGLAND, S.W. ...	10 less	20	3.2	43	24
9. IRELAND, N. ...	7 less	21	4.0	48	25
10. IRELAND, S. ...	9 less	21	4.8	43	28
— CHANNEL ISLANDS	6 less	21	2.9	31	27

THE PAST WEEK.

THE following summary record of the weather for the week ending February 14, is furnished from the Meteorological Office:—

"The *weather* has been in a fine and very dry condition generally, although a good deal of haze has prevailed at times.

"The *temperature* has been slightly above the mean in 'Scotland, N.,' but below in all other districts, the deficit ranging from 1° in 'Scotland, E.,' to as much as from 6° to 8° over the greater part of England, the S. of Ireland, and in the 'Channel Islands.' The highest of the maxima, which were registered on irregular dates, varied between 43° in 'England, N.E.,' 50° in 'Ireland,' 53° in 'Scotland, N.,' and 54° in 'Scotland, E.' The lowest of the minima, which were recorded at most stations during the earlier part of the week, ranged from 18° to 20° in Scotland, from 20° to 21° in Ireland, and from 19° to 25° over England.

"The *rainfall* has been less than the mean in all districts; over the greater part of the kingdom the amount has been scarcely appreciable, while in many places none whatever has fallen.

"*Bright sunshine* has been more prevalent generally than for a long time past. In Scotland and the Channel Islands the percentage of the possible amount of duration ranged from 23 to 31, while over England and Ireland, where the percentage has been higher than during any week since that ending September 20, 1886, it ranged from 34 in 'England, S.,' to 48 in 'Ireland, N.,' and to 62 in 'England, E.'"

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING FEBRUARY 26. (AVERAGE OF THIRTY-THREE YEARS.)

February 21	39°.6	February 25	40°.1
" 22	39°.7	" 26	40°.2
" 23	39°.8	"	40°.4
" 24	40°.0	Mean for the week ...	40°.0

ENQUIRIES.

"He that questioneth much shall learn much."—BACON.

ASPHALTE TENNIS-COURT AND SKATING-RINK.—Can any of your correspondents give me their experience in making a tennis-court? Mine is a double object; first to have it to play on when the grass court will not allow it on account of rain, &c.: secondly, to use it for skating in frosty weather. 1. What is the best thing to lay it down with, and in what proportions? 2. What depth should it be laid, and what firm does this work? 3. What depth should it be flooded?—as I think if only a thin covering of ice it would soon cut through, and if falls occur they would be much more dangerous than if the ice were 3 or 4 inches thick. *Enquirer.*

ONION GROWING.—What weight of Onions will an acre of fair land grow in the North of Scotland, and do they sell as well as foreign Onions wholesale? *J. C.* [Your first question relates to a matter of arrangement between the parties. ED.]

WASP TRAP.—Will any of the readers of the *Gardeners' Chronicle* kindly put me in the way of obtaining an efficient and simple wasp-trap, such as may have been practically tried and found of service? The maker's name and address would oblige. *Wasp-pest.*

NOTICES TO CORRESPONDENTS.

TO THE TRADE.—Members of the Trade will oblige by sending notes of matters of Trade interest, Cultural or Commercial.

INTELLIGENT READERS, DO PLEASE NOTE.—*Letters relating to* ADVERTISEMENTS, *or to the supply of the Paper, should be addressed to the* PUBLISHER, *and not to the Editor.*

*** All communications intended for publication should be addressed to the "*Editor.*" Such communications should be *written on one side only of the paper*, and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

PHOTOGRAPHS, &c.—The Editor will feel greatly obliged to any reader who will forward photographs or drawings of gardens, plants, or other subjects of interest.

AUSTRALIAN FLOWERS?: *G. H.* We should say that one of the specimens was Humbugia decipiens, and the other Dodgea transparens. Seriously, why should you occupy our time with such manufactured specimens? Do you imagine that editors have nothing to do but play with you? One flower may be a bit of a Gilia, and the other may be a piece of Potentilla, both carefully mutilated as it would seem for the purpose of taking us in.

BUNCH OF GRAPES AT THE MANCHESTER INTERNATIONAL HORTICULTURAL EXHIBITION, 1881: *J. H. B.* Mr. Roberts, Gunnersbury Park, showed a bunch of Trebbiano, which weighed 20 lb. 3 oz.

BOOKS: *Forester.* Brown's *Forester* is the most complete book of the kind. The botany and physiology is, however, much in need of revision.

CALENDAR WRITING: *One of the Unfortunate.* No doubt some harm may be done in the way you suggest, but on the whole the good largely preponderates.

CHRYSANTHEMUMS: *T. Mackie.* Golden Gem, as seen by us last week, was a much better flower than any of those you sent to us, and is one that seems to be more suited for late flowering than Mad. C. Andiguier, Princess of Wales, Etoile du Midi, Sorce d'Or, &c.

COLOUR IN FLOWERS: *J. F.* The colours of flowers depend upon coloured juices contained in cells situated just beneath the skin of the petals. If two such layers of cells overlie one another, the colour will of course be modified. The formation of the colour depends upon certain chemical changes, dependent directly or indirectly on the action of light. Why flowers have different colours is more than we can tell. We know how it is, but we can no more tell you why than we can tell why your eyes are blue, and Jones' brown.

ERRATUM.—In "Roses," p. 209, third column, ninth line from bottom, for the "last two flowers," read the "first two classes."

EUCHARIS: *E. W. G.* Your bulbs are attacked with the Bulb mite, about which so much has been written and illustrated in these columns. Destroy the bulbs, turn out the soil, and start afresh.

JUBILEE GREEN: *R. Gilbert.* The Sprout obtained by crossing Brussels Sprouts with Chou de Burghley is delicious when cooked, it having none of the strong flavour of the Brussels Sprout, but rather that of Couve Tronchuda (the Portuguese Cabbage). If it be as hardy as Sprouts—and it would appear to be so—the ordinary Sprouts will be banished from the table in a short time.

NAMES OF FRUITS: *Apples packed with a shoot of Pinus.* 1, Baldwin; 2, not known.

NAMES OF PLANTS: *Southampton.* 1, not identified; 2, Populus? 3, Cleyera japonica variegata; 4, 5, not identified; 6, Cleyera japonica; 7, Buxus sempervirens, a curious variety; 8, 9, 10, 11, not identified; 12, Podocarpus japonicus variegatus.—*W. A, G.* Zygopetalum intermedia.—*W. P. Hiern.* Masdevallia infracta.

ONCIDIUM MACRANTHUM WITH BLACK MARKINGS: *A. Wilson.* The markings on your flower are due to some injury to the flower in the bud stage. Water might cause the appearance. The marks are not naturally formed.

POTATOS: *G. M. K.* The appearances in the tubers are those of the common Potato disease, but the mycelium has not yet presented itself. Further investigation will be made; and the results made known.

SIX BEST TREE OR PERPETUAL FLOWERING CARNATIONS: *W. W. E.* The two varieties, A. Alegatière and Miss Joliffe are very free flowering now. Of deep rose and pink varieties, Juliette and Mrs. Llewelyn are the best; La Belle is the freest white variety; Meteor is a very free scarlet. Whipper-in is another good scarlet. We do not know any dark crimson better than Mrs. Keen.

SEEDS OF LUCULIA GRATISSIMA: *E. H. C.* These are procurable from Messrs. J. Veitch & Sons, Chelsea.

VINES: *J. Langston.* Application should be made to M. Joseph Hans, nurseryman, Mülhouse (Alsace); MM. Simon Louis fréres, Metz (Lorraine); M. André Leroy, Angers (Maine et Loire); Garten Direcktor, Gut Carlburg, bei Pressburg, Hungary.

VIRGINIAN CREEPER BLEEDING AFTER PRUNING: *J. B.* Prune the plant in March, or just as the buds begin to move; no loss of sap will then accrue. There is no bleeding from small wound surfaces after leaf-growth has commenced.

CATALOGUES RECEIVED.

FRANK LAW, The Carnation Gardens, Rochdale—Carnations, Dahlias, Seeds, &c.

G. BRUCE, 35, Market Street, Aberdeen, N.B.—Spring Catalogue.

WEBB & SONS, Wordsley, Stourbridge—Abridged Spring Catalogue.

M. Campbell, Auchinraith, Blantyre—Herbaceous Plants, &c.
E. J. Jarman, Chard, Somerset—Seeds.
Soupert & Notting, Luxembourg—Extract from General Catalogue: Roses.
Thomas Horsman, 102, Godwin Street, Bradford—Garden and Flower Seeds.
Vilmorin Andrieux & Co., 4, Quai de la Mégisserie, Paris, France—Seeds of Trees and Shrubs.
James L. Boyson, Caen, Calvados, France—New Roses.
Peter Henderson & Co., 35 and 37, Cortland Street, New York, U.S.A.—"Everything for a Garden."
Thos. Bunyard, Ashford, Kent—Flower and Vegetable Seeds.
Thos. S. Ware, Hale Farm Nurseries, Tottenham, London, N.—Chrysanthemums, Hardy Florists' Flowers, Herbaceous Plants, &c.

Communications Received.—E, Burbery.—Frank Miles.—G. N.—W. B.—E. J.—T. Lewis,—W. A.—G. Layard.—R. D.—W. K.—A. T. (next week).—Vagabond.—W. B.—J. Green,—J. B.—C. D. & S.—W. C.—W. S.—C. W. D.—W. G. S.—Daffodil, Cork.—P. T. I.—H. A. P. —T. J. (thanks). — J. S. Wood—G. H., St. Albans—R. L. P. — T. W. S.

MARKETS.

COVENT GARDEN, February 17.

The subjoined reports are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list weekly, and are responsible for the quotations. It must be remembered that these quotations are averages for the week preceding the date of our report. The prices fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the prices at any particular date, still less can they be taken as guides to the price in the coming week. Ed.]

Business still quiet, with supplies much the same as last week. *James Webber, Wholesale Apple Market.*

Plants in Pots.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz.	6 0–18 0	Ferns, in variety, per dozen	4 0–18 0
Arum Lilies, dozen...	18 0–18 0	Foliage plants, various, each	2 0–10 0
Azaleas, per dozen ...	24 0–42 0	Genista, per doz. ...	10 0–12 0
Cineraria, per doz....	9 0–12 0	Hyacinths, 12 pots...	6 0– 9 0
Cyclamens, dozen ...	12 0–24 0	Lily-of-Val., 12 pots	12 0–24 0
Cyperus, per dozen .	4 0–12 0	Marguerite Daisy, per dozen	6 0–12 0
Daffodils, 12 pots ...	9 0–10 0	Myrtles, per dozen...	6 0–12 0
Dracæna terminalis, per dozen ...	30 0–60 0	Palms, in var., each	2 6–21 0
— viridis, per doz.	12 0–24 0	Pelargoniums, scarlet, per doz. ...	6 0– 9 0
Epiphyllum, dozen...	18 0–30 0	Primula sinensis, per dozen	4 0– 6 0
Erica hyemalis, per dozen	12 0–24 0	Solanums, per dozen	9 0–12 0
— various, dozen ...	9 0–24 0	Spiræa, per dozen ...	12 0–24 0
Euonymus, in var., per dozen	6 0–18 0	Tulips, 12 pots ...	6 0– 8 0
Evergreens, in var., per dozen	6 0–24 0		
Ficus elastica, each .	1 6– 7 0		

Cut Flowers.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Arum Lilies, 12 blms.	3 0– 5 0	Mignonette, 12 bun.	3 0– 6 0
Azaleas, 12 sprays ...	0 6– 1 0	Pelargoniums, scarlet, 12 sprays ...	0 9– 1 0
Bouvardias, per bun.	0 6– 1 0	Primulas, single, 12 bunches	4 0– 6 0
Camellias, 12 blooms	2 0– 4 0	— double, 12 sprays	1 0– 1 6
Carnations, 12 blms.	1 0– 3 0	Roses, Tea, per doz.	2 0– 4 0
Cyclamen, 12 blooms	0 4– 0 9	— coloured, dozen.	3 0– 6 0
Daffodils, 12 blooms	0 6– 1 6	— red, French, doz.	1 6– 2 0
Eucharis, per dozen	3 0– 6 0	— Safrano, Fr. doz.	1 0– 1 6
Gardenias, 12 blooms	12 0–30 0	Tropæolums, 12 bun.	1 0– 2 0
Hellebores, or Christmas Roses, 12 bls.	0 4– 1 0	Tuberoses, 12 blms....	2 6– 4 0
Heliotrope, 12 spr.	0 6– 1 0	Violets, 12 bunches...	1 6– 2 0
Jasmine, white, bun.	0 6– 0 9	— Parme, French, per bunch	3 0– 4 6
Lilies of the Valley, 12 sprays	0 9– 1 6	— Czar, Fr., bunch	1 6– 2 0
Marguerites, per 12 bunches	3 0– 6 0		

Vegetables—Average Retail Prices.

	s. d. s. d.		s. d. s. d.
Artichokes, per doz...	6 0– ...	Mushrooms, punnet	1 6– 2 6
Asparagus, French, per bundle... ...	21 0– ...	Mustard and Cress, punnet	0 4– ...
— English, per 100	12 0– ...	Onions, per bushel ...	4 0– ...
Beans, Kidney, lb. ...	4 0– ...	Parsley, dozen bunch	8 0– ...
Beet, red, per dozen	1 0– 2 0	Peas, per quart ...	6 0– ...
Brussels Sprouts, lb.	0 4– ...	Potatos, per cwt. ...	4 0– 5 0
Carrots, per bunch...	0 6– ...	,, kidney, per cwt.	4 0– 5 0
Cauliflowers, per doz.	3 0– ...	Rhubarb, per bundle	0 6– ...
Celery, per bundle ...	1 6– 2 0	Seakale, per punnet	2 6– ...
Cucumbers, each ...	1 0– 2 0	Shallots, per lb. ...	0 3– ...
Endive, per dozen ...	1 0– 2 0	Spinach, per bushel...	5 0– ...
Green Mint, bunch...	1 0– ...	Sprue, bundle ...	1 0– ...
Herbs, per bunch ...	0 4– ...	Tomatos, per lb. ...	2 6– ...
Leeks, per bunch ...	0 3– ...	Turnips, bunch ...	0 4– ...
Lettuce, per dozen ...	1 0– 1 6		

Potatos.—Markets very heavy, at the following prices:—Regents, 80s. to 100s.; Magnums, 70s. to 110s. per ton.

Fruit.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Apple, ½-sieve	1 6– 5 0	Lemons, per case ...	12 0–21 0
— Nova Scotia, brl.	8 0–12 0	Pears, per dozen ...	2 0– 4 0
Grapes, per lb. ...	2 0– 4 0	Pine-apples, Eng., lb.	1 0– 1 6
Kent Cobs, 100 lb. ...	65 0 70 0	— St. Michael, each	1 6– 6 0

SEEDS.

London: *Feb.* 16.—Messrs. John Shaw & Sons, Seed Merchants, of 37, Mark Lane, E.C., report to-day's market thinly attended, with but little business doing. A firm but quiet feeling now characterises the trade; this is often the case at this season, and is explained by the fact that the larger country houses have of course made their early purchases, whilst the time for sowing is not yet close enough at hand to cause any present consumptive demand. There is this week no material alteration in the values of either red or white Clover seed or Trefoil. For fine Alsike the tendency continues upwards. Spring Tares are still remarkably cheap. Hemp and Canary seed find buyers on former terms. For blue Peas the sale is slow.

CORN.

Averages.—The following is an official statement showing the average price of British corn, imperial measure, as received from the inspectors and officers of Excise, in the week ended February 12:—Wheat, 33*s.* 6*d.*; Barley, 25*s.* 7*d.*; Oats, 16*s.* 10*d.* For the corresponding week in 1886:—Wheat, 29*s.* 6*d.*; Barley, 29*s.*; Oats, 19*s.* 4*d.*

FRUIT AND VEGETABLES.

Columbia (East London): *Feb.* 16.—Fairly good supplies of all kinds reached this market. Trade was moderately brisk at prices as follows:—Apples, 7*s.* to 9*s.* per bushel; American ditto, 11*s.* to 17*s.* per barrel; Sprouting Broccoli, 1*s.* 6*d.* to 2*s.* per sieve; Brussels Sprouts, 2*s.* to 3*s.* do.; Savoys, 2*s.* 6*d.* to 6*s.* per tally; Greens, 1*s.* 6*d.* to 2*s.* 6*d.* per dozen bunches; Turnips, 2*s.* to 2*s.* 6*d.* do.; Carrots, 1*s.* 6*d.* to 2*s.* 6*d.* do.; Celery, 6*d.* to 8*d.* per bundle; Onions (English), 4*s.* to 5*s.* per cwt.; foreign do., 3*s.* to 4*s.* 3*d.* per bag of 110 lb.; Carrots, 15*s.* to 21*s.* per ton.

Stratford: *Feb.* 15.—The market has been well supplied during the past week, and a fair trade was done at the undermentioned prices:—Savoys, 3*s.* to 6*s.* per tally; Turnips, 2*s.* to 2*s.* 6*d.* per dozen bunches; ditto, 20*s.* to 30*s.* per ton; Carrots, household, 22*s.* to 30*s.* do.; ditto, cattle feeding, 17*s.* to 22*s.* do.; Parsnips, 6*d.* to 9*d.* per score; Mangels, 10*s.* to 15*s.* per ton; Swedes, 17*s.* to 21*s.* do.; Onions, English, 105*s.* to 115*s.* per ton; ditto, Dutch, 3*s.* to 3*s.* 6*d.* per bag; Watercress, 6*d.* per dozen; Celery, 6*d.* to 10*d.* per roll; Rhubarb, 2*s.* to 3*s.* per dozen bundles; Apples, 2*s.* to 2*s.* 6*d.* per half sieve; ditto, 4*s.* to 5*s.* 6*d.* per sieve.

HAY.

The following are the average of the prices obtained at the Metropolitan markets during the past week:—Clover, prime, 90*s.* to 100*s.*; inferior, 65*s.* to 84*s.*; hay, prime, 70*s.* to 90*s.*; do. inferior, 45*s.* to 60*s.*; and straw, 28*s.* to 42*s.* per load.

POTATOS.

Borough and Spitalfields: *Feb.* 15.—Best qualities met a fair demand and were in moderate supply, the principal part of present arrivals consisting of second and inferior qualities, for which lower rates are taken. Quotations:—Regents, 70*s.* to 110*s.*; Champions, 65*s.* to 80*s.*; and Magnum Bonums, 60*s.* to 115*s.* per ton.

Columbia (East London): *Feb.* 16.—Quotations: Scotch Regents, 60*s.* to 85*s.*: Magnums, 60*s.* to 100*s.*; Champions, 55*s.* to 80*s.*; York and Lincoln Regents, 60*s.* to 70*s.*; Magnums, 55*s.* to 75*s.*; Kent and Surrey Regents, 58*s.* to 75*s.*; and Champions, 55*s.* to 75*s.* per ton.

Stratford: *Feb.* 15. — Quotations: — Scotch Regents, 80*s.* to 95*s.*: Magnums, 80*s.* to 95*s.*; Champions, 50*s.* to 70*s.*; Fenland, 55*s.* to 80*s.* per ton.

NOVELTIES

WORTH HAVING.

PAPAVER PAVONINUM ("PEACOCK POPPY").

PAPAVER PAVONINUM (Peacock Poppy).—The present novelty is of dwarf habit. A conspicuous glossy black zone marks the petals near the base, the united bands forming a complete ring, which shows to great advantage on the brilliant scarlet ground colour. When fully expanded they are nearly 4 inches across; a plant of average size will produce a hundred flowers. It succeeds in any ordinary garden soil. It is a native of Turkestan and Afghanistan. Per packet, 1*s.*

ASTER "QUEEN OF THE MARKET."—This variety is a distinct and new race of Asters, blooming fully *a month earlier* than any other; similar in height and shape of flower to the Pæony-flowered section, and suitable either for outdoors or for pots, and comes into bloom *so very early* it will be found indispensable for Market Growers, either for cut bloom or pots.

Red, White, or Blue, separate, each 1*s.* per packet: mixed colours, 1*s.* per packet.

ASTER "WASHINGTON NEEDLE."—A new, very fine variety, of pyramidal growth, with needle-shaped very double flowers of 4 or 5 inches in diameter. This is the largest flowered Needle Aster in existence. A fine exhibition flower.

Light Purple, Peach-blossom, or Rose, each per packet, 1*s.*

DIANTHUS HEDDEWIGI, fl.-pl., "MOURNING CLOAK."—The colour of this magnificent variety is purple to black-purple, with beautiful large double flowers, having a white edge. The grave, striking colour of this new Pink is specially suited for mourning bouquets, wreaths, &c. Per packet, 1*s.*

MINA LOBATA, a magnificent and most attractive climber, 18 feet in height, flowers bright red, changing to orange. Per packet, 1*s.* 6*d.*

ZINNIA ELEGANS ROBUSTA GRANDIFLORA PLENISSIMA.—A particularly fine new class of Zinnias, differing from the older ones from its unusually robust habit of growth and the immense size (5 to 6 inches across) of its perfectly-formed very double flowers of various striking colours. It forms a handsome Dahlia-like bush of 3 to 3½ feet in height. Eight colours, mixed, per packet, 1*s.*

Prices to the Trade on application.

CATALOGUES of all Varieties of Vegetable and Flower Seeds,
including many good Novelties, Free by Post.

WATKINS & SIMPSON

Seed and Bulb Merchants,

EXETER STREET, STRAND

LONDON, W.C.

Send for an ILLUSTRATED PRICE LIST of

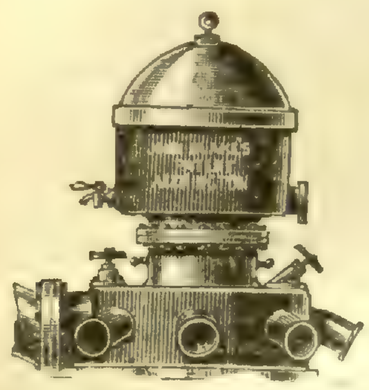
JOHN BLAKE'S
PATENT SELF-ACTING HYDRAULIC RAMS,

For Raising Water for the Supply of Towns, Villages, Irriagation, Railway Stations, Mansions, Fountains, Farms, &c.

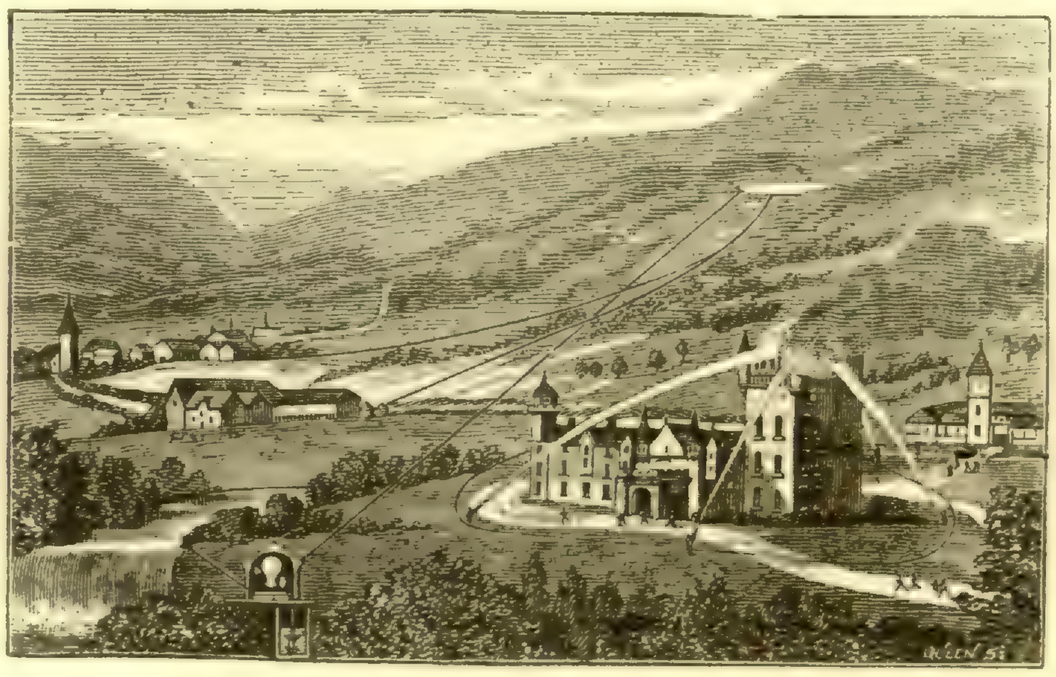
No Cost for Motive Power, which is obtained from a Stream of Water passing through the Ram.

NO OILING OR PACKING REQUIRED.

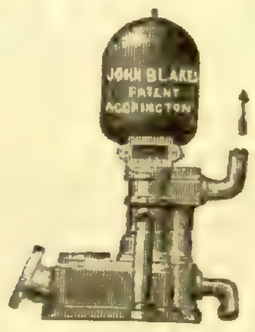
MADE IN SIZES TO RAISE FROM **300** TO **500,000** GALLONS PER DAY. WILL FORCE TO A HEIGHT OF **1500 Feet.**
SPECIAL RAMS for HIGH FALLS, to send up One Third of the Water passing through them.



This Ram will force up **200,000** gallons per day to medium heights. The patterns vary with the different sizes.



This View represents a Ram worked by impure river water, whilst pumping pure water from a well and forcing it to a small reservoir on the hill, at an elevation of 295 feet, and a distance of 1 mile, from which reservoir the water is gravitated for fire extinguishing and general requirements of mansion, stables, farm and village.



This Ram will force a part of the same water that works it, or will force clean water from a well or spring whilst worked by a stream of impure water. Rams on this principle can be supplied to force to a height of **1500** feet.

EXTRACTS FROM TESTIMONIALS.

From Sir FREDERICK A. MILBANK, Bart., M.P, 2, Moreton Gardens, South Kensington, London, March 30, 1886.

"Dear Sir,—I have much pleasure in saying that the Hydraulic Ram you put down for me at Thorpe Perrow gives great satisfaction, the materials supplied were of the best quality. I have had the Ram at work from the time it was put down and have never heard a complaint. It worked well all through the long winter, which I consider was a great and severe trial, as we had the thermometer, for weeks together, registering from 22 degrees to 10 degrees of frost.

"Yours truly, FREDERICK A. MILBANK."

From Colonel YOUNG, Agent to the Right Hon. Lord Londesborough, Londesborough Estate Office, Market Weighton, April 6, 1886.

"Dear Sir,—I have pleasure in stating that the Ram you put down in the park here, to supply Lord Londesborough's house and the village of Londesborough with water, in August last, has done its work remarkably well up to the present time, and we have had no alteration to make in it since it was completed and started by your workmen, and I consider it a great improvement upon the one previously in use for the same purpose.

"I am, yours very truly, THOMAS YOUNG."

From Mr. J. A. RUTHERFORD, Agent to C. F. H. Bolckow, Esq., Estate Office, Marton Hall, Middlesborough, September 26, 1883.

"Dear Sir,—I am glad to say that the Rams you put down on the Hambleton Estate, for Mr. C. F. H. Bolckow, are working very well. You undertook, with 16 gallons per minute, to send up 1500 gallons a day, and with enough water to work the Rams at full power, 2000 gallons a day. With a sapply of 11¾ gallons per minute they are lifting 2200 gallons, and when working full power, 3105 gallons per day are sent up to a height of nearly 400 feet. They made a clear start and have gone well since."

The Delivery Pipe, in the above case, is 9000 feet in length.

From HORATIO R. B. PEILE, Esq., Commissioner to Sir Michael Shaw Stewart, Bart., Mansion House, Greenock, August 13, 1883.

"I am glad to say that the Ram you fixed at Castle Farm, in November last, for Sir Michael Robert Shaw Stewart, Bart., continues a great success. The smallness of the driving water—2½ gallons per minute—is not more wonderful than the large proportion of water it sends up, viz., 720 gallons per day, through about 400 yards of delivery pipe, to an elevation of 75 feet."

From V. F. BENETT-STANFORD, Esq., M.P., Pyt House, Tisbury, Wilts, August 20, 1880.

"I have no hesitation in saying your Self-Acting Hydraulic Ram and Apparatus for extinguishing fire, which you laid down here, including about 1 mile of pipes, are very satisfactory. The Ram forces upwards of 5000 gallons per day to a service reservoir holding 25,000 gallons, at an elevation of 295 feet, being 70 feet above the roof of the house, from which reservoir the water is distributed to the house, stables, home farm, and several cottages, and in case of fire four jets can be thrown on to the house from different sides at a great force and large volume. I consider the work has been done well and efficiently, and does you credit."

From RICHARD MERCER, Esq., Sandling Place, Maidstone, December 10, 1883.

"Dear Sir,—I have much pleasure in stating that the Ram you started here about three years ago is still a great success. It is driven by water falling only 5 feet 6 inches, and sending up about 1500 gallons per day to a height of 126 feet, and delivering 50 per cent. more water than you promised."

From G. REDMAYNE, Esq., Brathay Hall, Ambleside, May 11, 1875.

"Sir,—I am glad to say that so far the Self-Acting Hydraulic Ram of your make, and supplied by Mr. W. A. Fell, of Troutbeck Bridge, is working very satisfactorily, and throwing up much more water than you promised to a height of 75 feet with a fall of only 3 feet 3 inches, Mr. Fell having previously fixed a Ram by a reputed maker, which was an utter failure, as it could not deliver any water at the elevation required."

From JOHN TAYLOR, Esq., The Rocks, Bath, August 22, 1878.

"The Self-Acting Hydraulic Ram you fixed here in March of last year continues to work well. It has only the same quantity of water and fall to work it as the water-wheel and pump which I used previously to force to a height of 294 feet, and yet the Ram sends up more than double the quantity of water that the wheel did to the same height."

JOHN BLAKE ENGINEER. ACCRINGTON, LANCASHIRE ENGLAND.

THE "SWIFT AND SURE" INSECTICIDE.

The Best and Cheapest Insect Destroyer.

Goes five times as far as any other preparation. Awarded Certificates of Merit at the Principal Shows.

PRICES:—8 oz. bottle with graduated measure, 1s. 6d.; 20 oz. ditto, 3s. 6d, (per Post, 4d. extra); per gallon, 10s. 6d. Special Quotations for large quantities.

THE PERFECT MILDEW DESTROYER.—Invaluable for destroying Mould and Mildew on Roses, Vines, &c. Prices: per 8 oz. bottle, 1s.; per 20 oz. do., 2s.

THE PERFECT WEED KILLER.—The best and cheapest means of effectually destroying Weeds, Moss, Lichens, &c., on Garden Walks, Carriage Drives, Stable Yards, Railway Stations, &c. It saves many times its cost in labour and eradicates weeds far more thoroughly than any hand weeding. One gallon makes 26 gallons for application. Price, per gallon, 2s.; 5 gallons, 1s. 9d. per gallon; 10 gallons, 1s. 6d. per gallon.

THE PERFECT WORM DESTROYER.—Invaluable for destroying Worms on Bowling Greens, Cricket Grounds, Tennis Courts, Lawns, &c., and removing them from the roots of Plants in Pots. It does not injure Grass or the most delicate Plant. Price, per 8 oz. bottle, 1s. 6d.; 20 oz. do., 3s. 6d.; per gallon, 7s. 6d. Orders for 10 gallons and upwards at special rates.

MANUFACTURED BY

THE HORTICULTURAL & AGRICULTURAL CHEMICAL COMPANY,

103, HOLM STREET, GLASGOW,

And Sold by all Seedsmen and Florists.

NOTICE TO THE TRADE.—We shall be pleased to submit sample of our pure Blood, Phosphatic, and Alkaline GRASS MANURE for Parks and Cricket Grounds. Price on enquiry.

To intending Tobacco Growers.—Please send for sample of our POTASH MANURE for the Tobacco Plant, at £7 10s. per ton.

Our special Grass, Potato, Fruit, and Plant MANURES; PEATS, SOILS, &c., are offered in bulk at rates to suit all requirements.

W. WOOD AND SON, Manufacturers, Wood Green, London, N.

FERTILITY,

The Best Garden Manure.

In Tins, 2 lb., 1s. *Larger quantities are charged, less.*

MILLER & JOHNSON, 30, Mark Lane, E.C.

Ground BONES, FISH GUANO, POTASH, CRUSHED HOOFS and HORNS, and all other MANURES, at lowest prices.

To Gardeners.

PROCTOR AND RYLAND'S

well-known

Special Garden Manures.

Pure Ground Bone for Vines, Potting, &c.

10s. per bag of 1 cwt. on receipt of Postal Order.

Birmingham and Chester.

BEESON'S MANURE is the best for all Horticultural Purposes. Sold in tins, 1s., 2s. 6d., 5s. 6d., and 10s. 6d., or 1 cwt. bags, sealed, 13s. each. By all Nurserymen or Seedsmen, or direct from Carbrook Bone Mills, Sheffield. Also pure CRUSHED UNBOILED BONES, any size, and guaranteed of the best quality.

PEAT—PEAT—PEAT.

GATERELL & SON, RINGWOOD, HANTS,

Are now prepared to receive Orders for the above.

GOOD SOUND PEAT, very fibrous, for Orchids, in sacks only

do. for Stove, Greenhouse, Hardwooded Plants, and Rhododendrons, in any quantity.

GOOD YELLOW FIBROUS LOAM, Coarse and Fine SILVER SAND, SPHAGNUM, &c.

Special low terms to the Trade. Price List on application.

THOMSON'S IMPROVED VINE and PLANT MANURE.—This valuable Manure is made up solely on our premises here. Every Bag and Tin has our Name on it. It can be had from all Nurserymen and Seedsmen, and direct from us, 1 cwt. and over carriage paid.

Our London Agent is Mr. GEORGE, 10, Victoria Road Putney, S.W.

WM. THOMSON AND SONS, Clovenfords, Galashiels, N.B.

GENUINE GARDEN REQUISITES

As supplied to the Royal Gardens.

BEST COCOA-NUT FIBRE REFUSE, 1s. 3d. per sack; 10 for 10s.; 20 for 18s.; 30 for 25s.; sacks included. Two ton trucks 25s., free on rail. Best brown fibrous Kent PEAT, 5s. per sack; 5 for 22s. 6d. Best black fibrous PEAT, 4s. 6d., per sack; 5 for 20s. Coarse Bedfords. SILVER SAND, 1s. 6d. per bushel; per ton, 25s. Pure LEAF MOULD, yellow fibrous LOAM, PEAT MOULD, 1s. per bushel. Potting composts, 5s. per sack. Fresh SPHAGNUM MOSS, 6s. per sack. Charcoal, Bones, Guano, &c. ARCHANGEL and PETERSBURG MATS from 12s. to 21s. per dozen. Raffia, Sticks, and Labels. SPECIALITE TOBACCO PAPER, 8d. per lb.; 28 lb. for 18s. Finest TOBACCO CLOTH, 8d. per lb.; 28 lb. for 18s. Price List sent free.—W. HERBERT AND CO., Hop Exchange Warehouses, Southwark Street, London, S.E.

HORTICULTURAL SOILS, MANURES, SUNDRIES, and BERKSHIRE POTTERY. Catalogue free per post, of every Horticultural Requisite.

BENJAMIN FIELD, F.R.H.S. (Son-in-law and Successor to J. Kennard), Swan Place, Old Kent Road, London, S.E.

TELEGRAMS—"FLORICULTURE, LONDON." Established 1854.

JENSEN'S

NORWEGIAN

FISH-POTASH GUANO

has given splendid results with

VINES, ROSES, CHRYSANTHEMUMS, AND TENNIS LAWNS.

The following Analysis is guaranteed:—

7 per cent. Ammonia.	20 per cent. Phosphates.
15 per cent. Potash.	10 per cent. Magnesia.

Only 5 per cent. Moisture.

RETAIL PRICES, CARRIAGE PAID.

2 lb. Tin, 1s.; Bags, 7 lb., 2s.; 14 lb., 4s.; 28 lb. 6s. 6d.; 56 lb., 10s. 6d.; 1 cwt., 16s.; 2 cwt., 30s. Bags free.

Write for Testimonials and Directions for Use.

J. JENSEN & CO., Ld.,

10, ST. HELEN'S PLACE, LONDON, E.C.

NATIVE GUANO.—Price £3 10s. per ton in bags; lots under 10 cwt., 4s. per cwt. Sample bag (1 cwt.) sent, carriage paid, to any station in England on receipt of P.O. for 5s.

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Orders to the NATIVE GUANO CO. (Limited), 29, New Bridge Street, Blackfriars, London, E.C., where Pamphlets of Testimonials may be obtained. Agents Wanted.

HONOURABLE MENTION and AWARD of MERIT Hull and East Riding Chrysanthemum Soc., 1886.

CERTIFICATE of MERIT, Scarborough Floral Society, 1886.

Especially adapted for cultivation of

FLOWERS, FRUITS, AND VEGETABLES.

Is not a Chemical production, but a purely natural Guano.

Useful everywhere alike, in Flower Garden, Conservatory and Greenhouse.

Packets, 1 lb., 6d.; 2 lb., 1s.; *postage extra.* Bags, 7 lb., 2s. 6d.; 14 lb., 4s. 6d.; 28 lb., 7s. 6d.; 56 lb., 12s. 6d.; 112 lb., 20s., *carriage paid. Of the principal Nurserymen, Seedsmen, Florists and Chemists, or direct from*

William Colchester, Ipswich.

The genuine bears the Trade Mark and Name in full.

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TWO PRIZE MEDALS.

Quality, THE BEST in the Market. (All sacks included.)

PEAT, best brown fibrous ...	5s. per sack;	5 sacks for 22s. 6d.
PEAT, best black fibrous ...	4s. 6d. ,,	5 sacks for 20s.
PEAT, extra selected Orchid	5s. 6d. ,,	5 sacks for 25s.
LOAM, best yellow fibrous ...	1s. per bush., 3s. per sack. (sacks included).	
PREPARED COMPOST, best		
LEAF MOULD, best only		
PEAT MOULD, ,,		
SILVER SAND, coarse, 1s. 6d. per bush., 14s. half ton, 24s. ton.		
RAFFIA FIBRE, best only	1s. per lb.	
TOBACCO CLOTH, finest imported ...	8d. lb., 28 lb. 18s.	
TOBACCO PAPER ,, (Spécialité)	8d. lb., 28 lb. 18s.	
MUSHROOM SPAWN, finest Milltrack ...	5s. per bushel.	

	Tins.	7lb.	14lb.	28lb.	56lb.	1 cwt.
CHUBB'S "PERFECT" FERTILISER, the Best Food for all kinds of Plants, Flowers, Fruits, Vegetables, &c. ...	1/6	3/-	5/-	8/-	14/-	22/-
CRUSHED BONES, best quality	1/2	2/-	3/6	6/-	12/-	
VIRGIN CORK, best quality only	—	3/-	5/6	10/6	17/-	

In bags.

HORTICULTURAL CHARCOAL, ditto, 2s. 6d. per bushel.

COCOA-NUT FIBRE REFUSE (by Chubb's special process), sacks, 1s. each; 10 sacks, 9s.; 15 sacks, 13s.; 20 sacks, 17s.; 30 sacks, 25s.; 40 sacks, 30s. Truck-load, loose, free on rail, 25s. Limited quantities of G., special quality, granulated, in sacks only, 2s. each. Terms, strictly Cash with order.

CHUBB, ROUND & CO.,

WEST FERRY ROAD, MILWALL, LONDON, E.

PEAT and SAND.—Light Brown PEAT for Nursery and Greenhouse Work, in four-ton trucks of 10 yards each, at 10s. per yard. In bags at 2s. 6d. per bag. Rhododendron and American Plant Beds, at 15s. per ton. Orchid Peat, 5s. per bag. Fresh SPHAGNUM, 7s. 6d. per bag. SILVER SAND, coarse or fine, 13s. per ton.

WALKER AND CO., Farnboro' Station, Hants.

PEAT—LOAM—SAND.—50 Acres Light Brown PEAT, full of fibre, 9s. per yard, in truckloads. Yellow Fibrous LOAM, best in England), 10s. per ton, in truckloads. SILVER SAND, 10s. per ton, in truckloads.

BRINKWORTH AND SONS, Reading.

MECHI'S SOOT AND SEWAGE MANURE.

A dry powder, carefully manufactured by Mechi's process,

WHICH IS DISTINCT FROM ALL OTHERS.

The very best Manure for Roots, Grass, Potatos, Wheat, Barley, Oats, Turnips, Mangels, Fruit, Vegetables, Hops, &c.

DESTROYS WIREWORMS, SLUGS, INSECTS, and GRUBS.

35s. per Ton loose; 40s. per Ton in bags; 4s. per Cwt. in bag.

Delivered Free on Rail or Boat.

Extract from the London DAILY CHRONICLE, *Jan. 6, 1887.*

"The Metropolis Sewage Company succeeded in proving that *sewage rendered a poor gravel farm of 200 acres or 300 acres the most productive piece of land in the United Kingdom.* They had grown superb Strawberries of very good flavour, capital Corn, Maize 15 feet high, and Vegetables as good as Covent Garden ever exhibited."

Post-office Orders payable at Mark Lane.

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Cloth and Fumigating Mixture,

Is celebrated throughout the United Kingdom, and acknowledged to be best, safest, and strongest it is possible to obtain, and contains the pure essence of Tobacco only. 6 lb., 1s. 6d.; 14 lb., 10s.; 30 lb., 20s.; the above is carriage paid to London or any railway station in Kent. Parcels sent by Post, paid:—2 lb., 22 stamps; 3 lb., 2s. 6d.; 7 lb., 5s. 6d.; 11 lb. 8s. 6d. Safe delivery is guaranteed on all parcels. Imported Tobacco Paper, &c., at lower rates. Our Tobacco Paper, Cloth, and Fumigating Mixture still stand the best extant. Used in Royal Nurseries, the gardens of the Nobility, by leading men of the Profession, &c. TRADE INQUIRIES SOLICITED.

Manufacturers, Merchants, and Importers,

DARLINGTON BROS.,

NEW ROAD, CHATHAM, KENT.

P.O.O., Cheques, &c., Darlington Bros., Chatham.

"Economy in the Garden."

W. WOOD & SON, F.R.H.S.,

Horticultural Specialists,

WOOD GREEN, LONDON, N. (Established 1850),

INVITE every lover of GARDENING to TRY their Special HORTICULTURAL MANURES, POTTING and STIMULATING COMPOSTS, INSECTICIDES, and other Specialties.

"LE FRUITIER," the Graduating Fertiliser for FRUIT, STRAWBERRIES, VINES, &c., is now admitted by all users to stand unrivalled.

"LIQUID MANURE POWDER," for perfecting EXHIBITION PLANTS and BLOOMS, has no equal for that purpose.

"THANATOS," the UNIVERSAL INSECTICIDE, is CERTAIN DEATH to MEALY BUG, RED SPIDER, GREEN FLY, and all other PLANT PESTS. Use it in powder, in water, or in paste.

A GRATIS COPY of WOOD & SON'S Popular JUBILEE ANNUAL, *YE LITTLE BOOKE FOR YE GARDEN*, sent POST-FREE, with Price Lists and 1s. Sample Tins, on receipt of order.

EXHIBITORS please send for particulars of Wood & Son's JUBILEE PRIZE CUPS and MEDALS OFFERED at the LEADING SHOWS in 1887.

EPPS'S SELECTED PEAT,

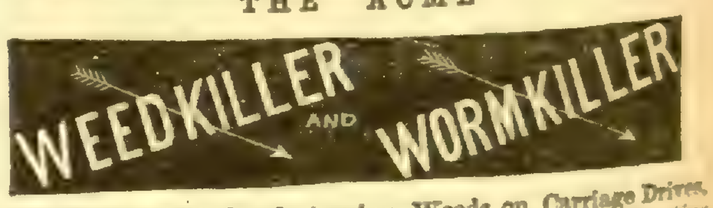
For CHOICE PLANTS, FERNS, HEATHS, &c.; also for RHODODENDRONS.

Specially Selected do. for Orchids.

LOAM, SAND, LEAF-MOULD, SPHAGNUM, COCOA-NUT FIBRE, CHARCOAL, &c., &c.; also all kinds of NURSERY STOCK. Prices on application to

EPPS & CO., RINGWOOD, HANTS.

THE ACME



WEED-KILLER for destroying Weeds on Carriage Drives, Garden Walks, Yards, &c. Prices:—Per gallon, 2s., tins included; 5 gallons, 1s. 6d. per gallon. Special quotations for larger quantities.

WORM-KILLER, for eradicating worms from Tennis Courts, Lawns, and plants in pots. Prices:—In bottles, 1s. 3d. and 2s. 6d. Sufficient to treat a full-sized Tennis Court, 21s. carriage paid. Particulars free from the Manufacturers.

The AGRI-HORTICULTURAL CHEMICAL COMPANY, Tonbridge, Kent. Sold by Seedsmen and Florists.

MATS—MATS.—Good clean, dry Dunnage Mats for Sale. 32s. per 100 on London Rails. Samples of 25 sent on receipt of 8s.

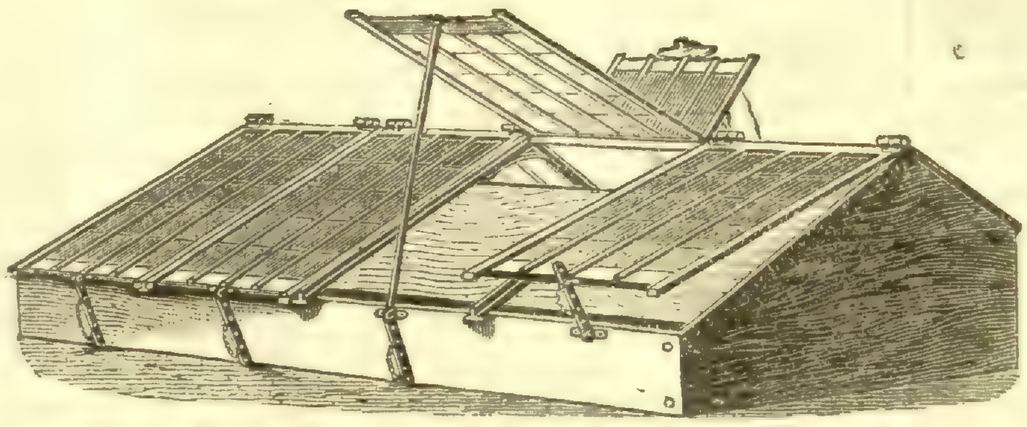
COCKS AND CO., 70, Mark Lane, E.C.

POSTAL BOXES for Plants and Flowers. PROPAGATING TRAYS for Sowing Seed, &c. CROSS, BOUQUET and WREATH BOXES. Sample free for six stamps.

T. CASBON, Box-maker, Peterborough.

BOULTON & PAUL, HORTICULTURAL BUILDERS, NORWICH.

Boulton & Paul's PLANT FRAMES are always in stock, ready to be sent away on receipt of order. They are made of best, sound, red deal, sawn from the best trees in the forest to our special requirements, and seasoned in a proper manner. The FRAMES are of 1½ in. boards, 13 in. high in front, 24 in. high at back, and 32 in. at the ridge, bolted at the corners, and easily taken to pieces if required. The LIGHTS are 2 inches thick, arranged to turn over, front or back, and provided with set-opes for ventilating, and the whole painted four coats. The Glass is ENGLISH, 21-oz. weight. PACKED and sent, CARRIAGE PAID, to any station in England and Wales, to Dublin, Belfast, Londonderry, Cork, Glasgow, and stations equivalent. Cases are allowed in full when returned.



No. 74.—Three-Quarter Span Plant Frame. All sizes in Stock.

CASH PRICES,

Including Use of Packing Cases.

	Length.	Width.	Price.
2-LIGHT FRAME	... 8 feet	by 6 feet	£4 12 6
3 ,, ,,	... 12 feet	by 6 feet	6 5 0
4 ,, ,,	... 16 feet	by 6 feet	8 0 0
5 ,, ,,	... 20 feet	by 6 feet	9 15 0

Smaller Frames are made. Lists post-free.

CATALOGUES

of Greenhouses, Heating Apparatus, Garden Frames in every variety made, Garden Implements, Water Carts, Pumps, and everything required for Gardens and Pleasure Grounds Post-free on application.

ESTIMATES for Greenhouses free on receipt of particulars.

LADIES and GENTLEMEN waited upon by appointment in any part of the kingdom.

A GOLD MEDAL (the highest award) has been awarded to us in open competition for general excellence in Horticultural Buildings, by the Society of Architects.

GREENHOUSES of every kind designed, erected, and heated.

Constructed so as to obtain, with the least obstruction to light and sun, the greatest strength and rigidity, at prices which, owing to unusual facilities, defy competition.

Gentlemen will do well to obtain an Estimate from us, for which no charge is made, before placing their orders elsewhere.

Illustrated Catalogues free. Richly Illustrated Catalogue, containing over sixty Plates of Winter Gardens, Conservatories, Vineries, Plant Houses, Forcing Houses, &c., recently erected by M. & Co., for 24 stamps.

MESSENGER & COMPANY, LOUGHBOROUGH.

CONTRACTORS TO HER MAJESTY'S WAR DEPARTMENT.

THE THAMES BANK IRON COMPANY,

UPPER GROUND STREET, LONDON, S.E.

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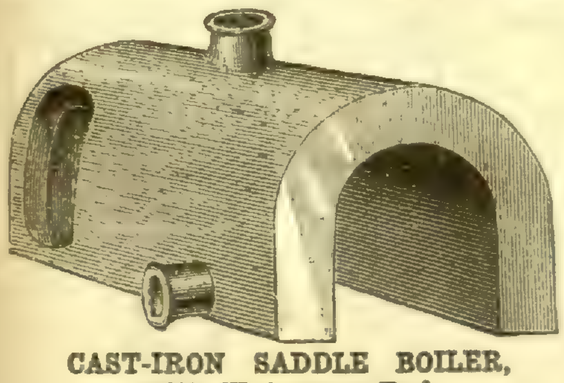

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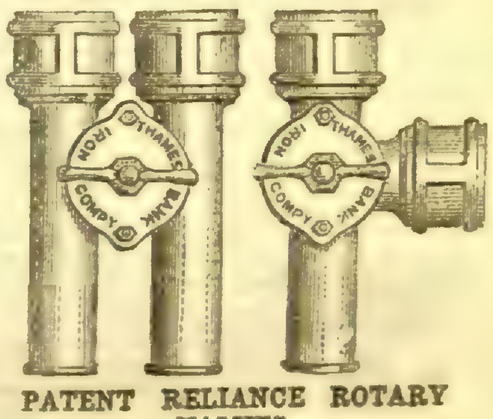

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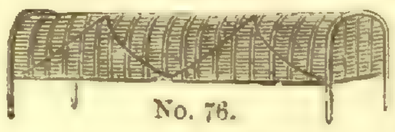

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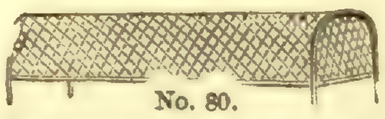

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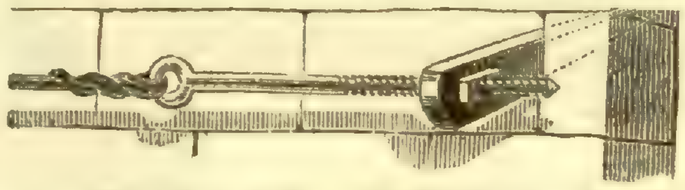

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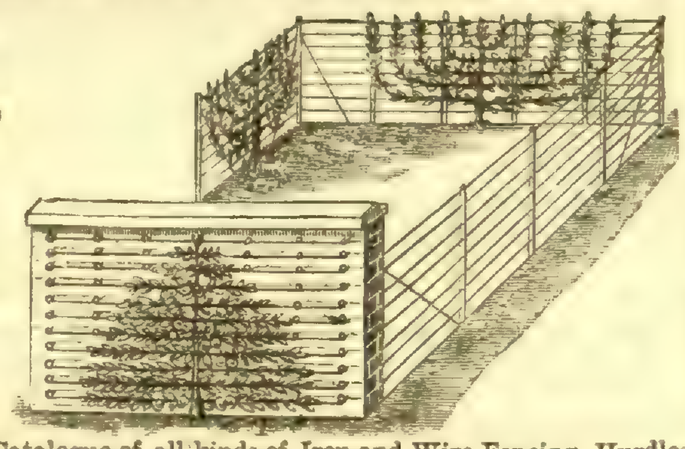

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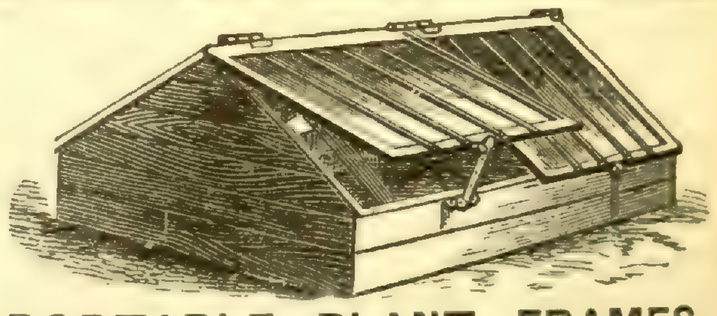

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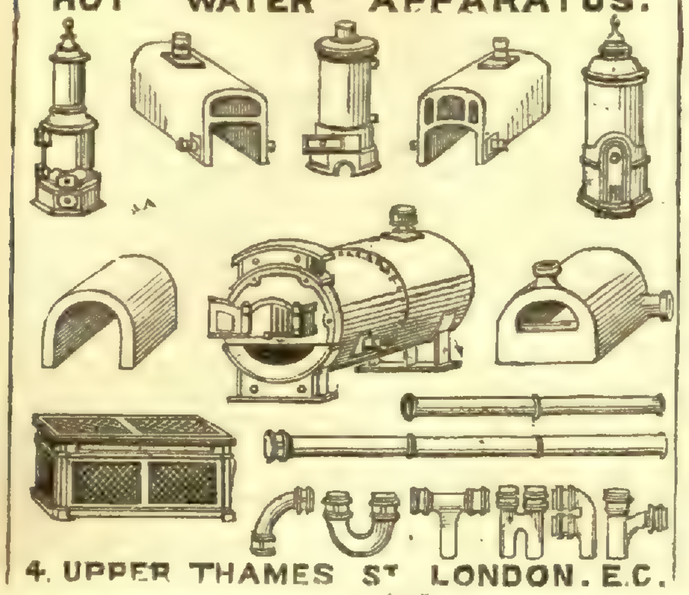

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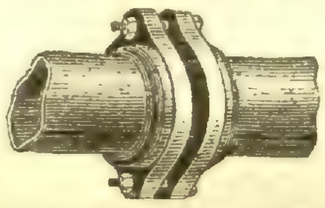

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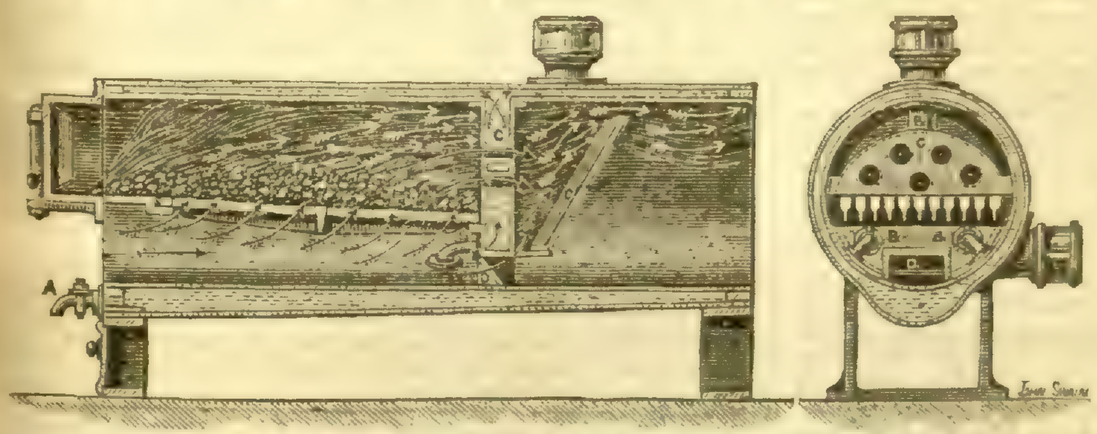

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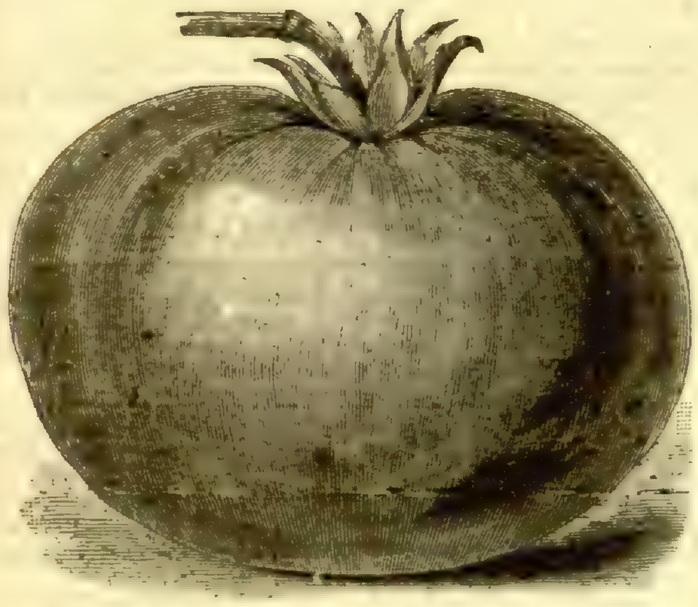

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CONTENTS.

Alton Towers 289
Books, notices of:—
Labour on the Farm ... 279
Industrial Ireland ... 279
"Proprietaire Planteur" 279
Bouvardia, the 282
Bulb garden, the 283
,, mite 290
Cordyceps Taylori ... 288
Cultural memoranda ... 278
Deutzia gracilis 290
Fern-wall tile 288
Florists' flowers 287
Flower garden 287
Fruits under glass ... 287
Gardeners' Orphanage ... 285
Gardening appointments 298
Herbaceous border ... 282
Hoop Petticoats 277
Horticultural sundries ... 281
Iceland, flora of 289
Ireland 291
"Journal de Botanique" 285
Lælia anceps and vars. ... 280
Law:—
Jacob & Co. v. Mansfield (Lily of the Valley) 287
Lilium auratum 290
Maximiliana regia ... 281
Narcissus, the legend of . 290
,, Pseudo-Narcissus var. Johnstoni ... 288
Narcissi, rare 286
National Auricula Society 285
,, Carnation and Picotee Society ... 285
Obituary:—
Le Grelle Dhanis, Mme. 291
Odontoglossum Williamsianum 278
Orchid notes 283
Orchids, Indian... ... 279
,, at Veitch's 286
Oxford Carnation and Picotee Union 285
Phytobiological observations 285
Plants and their culture 280
Potato, deterioration of . 290
Primula imperialis ... 285
Primulas at Carter's ... 286
Swanley, notes from ... 278
Taro plantation in China 285
Vegetable products and their cultivation ... 284
Weather 291

ILLUSTRATIONS.

Cordyceps Taylori 289
Fern-wall tile 288
Lælia anceps var. Sanderiana 281
,, anceps var. Stella 280
Narcissus Pseudo-Narcissus var. Johnstoni 288
Taro plantation in China. (See Supplement.)

THE LIVERPOOL HORTICULTURAL ASSOCIATION—EXHIBITIONS for 1887.
The SPRING SHOW of HYACINTHS, TULIPS, AZALEAS, FORCED HARDY PLANTS, &c., will be held in St. George's Hall on WEDNESDAY, March 16.
GRAND EXHIBITION in Sefton Park on SATURDAY and MONDAY, July 30, and August 1. The GREAT CHRYSANTHEMUM and FRUIT SHOW on TUESDAY and WEDNESDAY, November 22 and 23. Liberal and Special Prizes are offered. Schedules now ready and may be had on application to
EDWARD BRIDGE, Sec.
3, Cedar Terrace, Tarbock Road, Huyton.

PRESTON and FULWOOD HORTICULTURAL SOCIETY.
The NINTH GREAT SPRING FLOWER SHOW and FLORAL FÊTE will be held in the large New Public Hall, Preston, on THURSDAY and FRIDAY, March 17 and 18 next. Schedule of Prizes and other information from
Mr. JOHN ATHERTON, Fern Bank, Cadley, Preston.

BIRMINGHAM and MIDLAND COUNTIES CHRYSANTHEMUM, FRUIT, and FLORICULTURAL SOCIETY.
The TWENTY-SEVENTH ANNUAL EXHIBITION of CHRYSANTHEMUMS, FRUIT, &c., will be held in the Town Hall, Birmingham, on NOVEMBER 16 and 17 next, when the following liberal Prizes for Fruit will be offered, open to all England:—

	1st.	2d.	3d.
	£ s. d.	£ s. d.	£ s. d.
GRAPES, six bunches, not less than three varieties ...	5 0 0	3 0 0	2 0 0
,, three bunches, Black ...	2 10 0	2 0 0	1 0 0
,, three bunches, White (Muscats)	3 0 0	2 0 0	1 0 0
,, two bunches, White (Muscats excluded)	1 0 0	0 15 0	0 10 0
,, one bunch, White, any variety	1 0 0	0 15 0	0 10 0
,, one bunch, Black, any variety	1 0 0	0 15 0	0 10 0

Schedules ready in about a fortnight, and can be had on application to J. HUGHES, Secretary, Metchley Lane, Harborne, Birmingham.

Rhododendrons.
JOHN WATERER AND SONS, Bagshot, Surrey, are the Great Exhibitors of Hardy Scarlet and White RHODODENDRONS.
Their CATALOGUE is ready, and may be had on application.

Myrobella.
PRUNUS MYROBALANA, or CHERRY PLUM.—The best stuff for Mending Old Fences or Making New Ones. Grows fast in poorest soils. Much stronger than Whitethorn. It is also an excellent Stock for the Plum. A sample hundred, 2 to 3 feet, sent on receipt of 6s., 50 for 3s. Full further particulars of
EWING AND CO., Sea View Nurseries, Havant, Hants.

HARDY RHODODENDRONS and AZALEAS.—The most extensive stock in the Kingdom of the finest hardy varieties known.
☞ The Rhododendrons in Rotten Row and the Botanic Gardens, Regent's Park, are supplied by
ANTHONY WATERER, Knap Hill Nursery, Woking, Surrey.

CHOICE NAMED TUBEROUS BEGONIAS.—Send for a CATALOGUE of all the best Double and Single varieties at fully one-third less in price than charged by other well-known firms. Can also supply Seedling Whites, fine strain, 6 for 4s. free; grand for greenhouse or bedding-out.
MORLEY AND CO., Preston.

Strawberries a Specialty.
LOVEL'S STRAWBERRY PLANTS, 100, 2s. 6d.; 500, 10s.; 1000, 15s.
Sample and Pamphlet, 3d. Select LIST free.
W. LOVEL AND SON, Strawberry Growers, Driffield.

MARÉCHAL NIELS!—MARÉCHAL NIELS!
GROWERS OF ABOVE wishing to obtain best value, should send to
WISE AND RIDES, Covent Garden, W.C.

MESSRS. GREGORY AND EVANS, NURSERYMEN, Sidcup, and 285, 286, 287, 288, Flower Market, Covent Garden, W.C., are open to RECEIVE CONSIGNMENTS of Choice CUT FLOWERS in any quantity for their Commission Department. Boxes and Labels supplied.
Telegraph Address—"COMMISSION, SIDCUP."

Floral Commission Agency.
A. HILL AND CO., 52, Hart Street, Covent Garden, W.C., are open to RECEIVE CONSIGNMENTS of Choice CUT FLOWERS in any quantity. A. H. & Co., giving personal attention to all consignments, are thus enabled to obtain the highest market prices. All Cheques forwarded weekly. Bankers and good Trade references. Boxes and Labels supplied.

SQUELCH AND BARNHAM, North Row, Covent Garden, W.C., are OPEN TO DISPOSE OF any quantity of MUSCATS and BLACK GRAPES, TOMATOS, FRENCH BEANS, STRAWBERRIES, CHOICE FLOWERS, &c. Highest Market Prices obtained; Account Sales daily, Cheques weekly or as preferred by Sender. Baskets and Labels supplied. References given.

WANTED, large PALMS, TREE FERNS, and other large ORNAMENTAL FOLIAGED PLANTS, in EXCHANGE for ORCHIDS or othet PLANTS. Send full particulars.
The LIVERPOOL HORTICULTURAL CO, (John Cowan), Limited, The Vineyard, Garston, Liverpool.

WANTED, BOX EDGING.—Send sample and quote lowest price per hundred or per thousand yards to
J. & A. DICKSON AND SONS, The Queen's Seedsmen, Chester.

WANTED, Old Plants of "Mrs. Pollock" and other Fancy Gold and Silver Tricolor GERANIUMS, hardy PRIMULAS, HEPATICAS, SAXIFRAGES, Yellow PICOTEES, Flake CARNATIONS, Fancy Double and Pompon DAHLIA TUBERS, ECHEVERIAS and other CARPET BEDDING PLANTS; Blue LOBELIAS, SALVIAS, LANTANAS, PENTSTEMONS, HELIOTROPES, CUPHEAS. All above to be stock plants. Price per dozen or hundred. Also a few thousand various GERANIUM CUTTINGS.
RUBUS, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

WANTED. a strong healthy Fruiting NECTARINE TREE, Dwarf-trained Victoria or Elruge preferred. State size and price to
J. ROBSON, Nurseryman, Altrincham.

WANTED, Fidler's General Gordon, Fidler's Reading Giant, and Woodstock Kidney POTATOS. Send full particulars and price to
C. FIDLER, Potato Grower, Reading.

EDW. PYNAERT'S NEW PLANT CATALOGUE is now sent post-free on application.
EDW. PYNAERT, Ghent, Belgium.

Bedding Begonias.
JOHN LAING AND CO. have a grand stock of Tubers, carefully and specially selected to colour for bedding from our outdoor beds last summer, three shades of crimson, orange-scarlet, magenta, pink, rose, scarlet, white, &c. Per dozen, post-free, 6s.. Cultural Directions in CATALOGUE.
JOHN LAING AND CO., The Nurseries, Forest Hill, S.E.

TRUE CELESTIAL ROSES, on own roots, very hardy and very scarce, the buds most exquisitely delicate pink:—Small suckers, three for 12 stamps, by post; larger plants, 1s. and 2s. each.
A. MOSS, Chadwell Heath, E.

RHODODENDRONS.—Well budded, choice named kinds, 21s., 24s., and 30s. per dozen. Thousands to selecct from.
JOHN STANDISH AND CO., Royal Nurseries, Ascot.

LYCHNIS CHALCEDONICA, fl. rubro pl., undivided clumps, 25s. per 100.
LOBELIA ERINUS KAISER WILHELM, fresh pure seeds, 1 kilo., £5; 20 gramm., 2s. 2d. Offer by cash.
A. RATHKE AND SON, Praust, West Prussia.

To Aster Growers and Exhibitors.
WALKER'S IMPROVED EXHIBITION QUILLED ASTER.—The finest strain of Quilled Aster extant. Awarded during the past season First Prizes at the Crystal Palace (against sixteen competitors), Brighton, Oxford, Reading, Maidenhead, and other shows. In collections of twelve choice varieties, 2s.
JOHN WALKER, Seedsman and Florist, Thame, Oxon.

FOR IMMEDIATE SALE, Hardy Specimen CONIFERS, PALMS, and CAMELLIAS. See Advertisement in *Gardeners' Chronicle*, February 12, p, 199.
W. JACKSON AND CO., Nurseries, Bedale,
Best STRAWBERRIES, large transplanted Runners, £1 per 1000

Reduced Prices to meet Depression.
DESCRIPTIVE CATALOGUE, comprising fine transplanted FRUIT TREES, ROSES, Hardy CLEMATIS, RHODODENDRONS, CONIFERS, TREES and SHRUBS, CLIMBERS, FOREST TREES, &c., free on application to
GEO. JACKMAN AND SON, Woking Nursery, Surrey.

Grape Vines and Strawberries (in pots).
FRANCIS R. KINGHORN offers very fine stocks of the above in all leading varieties, true to name, LIST and Prices on application.
Sheen Nurseries, Richmond, Surrey.

For Sale.
RASPBERRY CANES—the famous Carter's Prolific. These Canes can be planted with perfect safety to the end of March. Not less than 1000 Canes supplied. Apply to ALBERT BATH, Sevenoaks, Kent.

Mangel Wurzel and Turnip Seeds.
H. AND F. SHARPE are now prepared to make special offers of home-grown MANGEL WURZEL and TURNIP SEEDS, raised in 1886 from specially selected Bulbs. The quality is excellent and the prices are very low.
Seed Growing Establishment, Wisbech.

To the Trade.
SEED POTATOS.—Magnum Bonum, "seed size," Beauty of Hebron, and White Elephant, true to name.
J. MARTIN, Hall Farm, Outwell, Wisbech.

"Imperator" Potato.
PETER LAWSON AND SON (Limited), Edinburgh, are prepared to Book Orders for the "IMPERATOR" POTATO, as sent out by them, also other leading kinds. Prices upon application.

HENRY ORMSON AND CO., HORTICULTURAL BUILDERS and HOT-WATER ENGINEERS, Stanley Bridge, King's Road, London, S.W. Designs for Conservatories, Greenhouses, and Heating by Hot-water free on application. See large advertisement, Feb. 5, p. 191.

SALES BY AUCTION.

Monday Next.—Sale No. 7360.
IMMENSE IMPORTATIONS FROM JAPAN, &c.
15,000 grand Bulbs of LILIUM AURATUM, 800 L. AURATUM MACRANTHUM, 650 L. SPECIOSUM ALBUM and ROSEUM, 1500 LILIUM KRAMERI, 1500 L. LONGIFLORUM, and many other species, in the finest possible condition; fine Clumps of IRIS KÆMPFERII, &c., just received from Japan; Hardy Home-grown LILIES to name; 7000 extra fine South African TUBEROSES, &c.

MR. J. C. STEVENS will SELL the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY NEXT, February 28, at half-past 12 o'Clock precisely.
On view morning of Sale, and Catalogues had.

Wednesday and Saturday Next.
Several Hundred First-class Standard, Dwarf, and Climbing ROSES, to name, from well-known English growers; FRUIT TREES, of sorts; Hardy Ornamental SHRUBS and CONIFERS, BORDER PLANTS, in variety; LILIUMS, GLADIOLI, and other BULBS for present planting.

MR. J. C. STEVENS will SELL the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY and SATURDAY NEXT, March 2 and 5, at half-past 12 o'Clock precisely each day.
On view morning of Sale, and Catalogues had.

Thursday Next—(Sale No. 7363).
DENDROBIUM INFUNDIBULUM, large masses.
,, CAMBRIDGEANUM, large masses.
,, WARDIANUM.
,, BRYMERIANUM, true.
MORMODES LUXATUM EBURNEUM.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., by order of Mr. F. Sander, on THURSDAY NEXT, March 3, at half-past 12 o'Clock precisely, grand importations of BURMESE and other ORCHIDS, the whole in superb condition, comprising strong and selected plants of the following:—Dendrobium infundibulum, in large and compact masses; D. Cambridgeanum, D. Wardianum, long stout-bulbed variety; D. Brymerianum, true; D. crassinode Barberianum, D. hedyosmum, D. densiflorum, D. capillipes, D. chrysanthum, in large masses; D. nobile, fine dark varieties; D. devonianum, D. Falconerii, D. thyrsiflorum, with bulbs nearly 3 feet long. Also a superb importation of the beautiful pure white-flowering Mormodes luxatum eburneum, consisting of large and fine bulbed pieces; fine lot of Cattleya Mendelii, C. Mossiæ, matutina, and other rare and choice ORCHIDS.
On view morning of Sale, and Catalogues had.

Special Sale of Orchids in Flower and Bud.

MR. J. C. STEVENS begs to announce that his next Special Sale of ORCHIDS, in Flower and Bud, will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, March 16, and he will be glad if gentlemen desirous of entering plants for this sale will send particulars as soon as possible.

Tuesday Next.
400 fine Standard and other ROSES of the leading kinds, CONIFERS, RHODODENDRONS, and DECIDUOUS SHRUBS, Standard and Trained FRUIT TREES, choice Double CAMELLIAS, AZALEAS, and other PLANTS, without reserve.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at the City Auction Rooms, 38 and 39, Gracechurch Street, E.C., on TUESDAY NEXT, March 1, at 12 o'Clock precisely.
On view morning of Sale. Catalogues obtainable at the Rooms, and of the Auctioneers, 67 and 68, Cheapside, E.C.

Tuesday Next.
AERIDES from PHILIPPINE ISLANDS.
CYMBIDIUM LOWIANUM.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, March 1, at half-past 12 o'Clock precisely, by order of Messrs. Hugh Low & Co., a large number of imported plants of CYMBIDIUM LOWIANUM, including many fine masses; also several hundred AERIDES, just to hand, from the Philippine Islands, all in the best possible condition.
On view morning of Sale, and Catalogues had.

Tuesday Next.
ESTABLISHED ORCHIDS.—Mostly without reserve.
Important to Gentlemen about to form collections.

MESSRS. PROTHEROE AND MORRIS will include in the SALE by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY NEXT, March 1, a large quantity of well grown ESTABLISHED ORCHIDS from various collections, many of them in flower or bud. The Sale will comprise a large assortment of Dendrobiums, Cypripediums, Masdevallias, Lælias, Odontoglossums, Phalænopsis, Cattleyas, 500 established Odontoglossum Alexandræ, and many others.
On view morning of Sale, and Catalogues had.

Wednesday Next.
1000 Grand Bulbs of LILIUM AURATUM.

MESSRS. PROTHEROE AND MORRIS will include the above in their SALE on WEDNESDAY NEXT, March 2.
On view morning of Sale, and Catalogues had of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Every Wednesday and Saturday.
SALES of CAMELLIAS, AZALEAS, PALMS, and other PLANTS in variety, from Belgium, and elsewhere; LILIUM AURATUM and many rare LILIES, also a collection of beautiful IRIS from Japan (see native drawings), 500 choice named Standard and Dwarf ROSES, FRUIT TREES, CARNATIONS, PICOTEES, English grown LILIES, and a great variety of hardy BULBS and PLANTS.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., every WEDNESDAY and SATURDAY, at half-past 12 o'Clock precisely each day.
On view morning of Sale, and Catalogues had.

Thursday Next.
The American Exhibition, Earl's Court, S.W.
Important to Nurserymen and Market Gardeners.
UNRESERVED CLEARANCE SALE of SEAKALE and RHUBARB, the ground being immediately required for the purposes of the Exhibition.

MESSRS. PROTHEROE AND MORRIS are instructed by the Directors of the American Exhibition Association to SELL by AUCTION, on the Premises close to Earl's Court Railway Station, on THURSDAY NEXT, March 3, at 12 o'Clock precisely, without reserve, 80,000 SEAKALE and 25,000 RHUBARB, principally Victoria, Champagne, and Giant Mint, &c.
May now be viewed. Catalogues may be had of Mr. GOLDRING, on the Premises; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Friday Next.
CATASETUM BUNGEROTHII.
CATTLEYA MOSSIÆ.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Shuttleworth, Carder & Co., to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, March 4, at half-past 12 o'Clock precisely, a grand importation of
CATTLEYA MOSSIÆ, in splendid condition, many in full leaf, collected from the same locality as those Messrs. Shuttleworth imported last Spring, from which many fine varieties have flowered.
CATASETUM BUNGEROTHII.—The entire consignment is offered of this most rare and lovely Orchid.
ODONTOGLOSSUM CRISPUM (the best type), ONCIDIUM PAPILIO MAJUS, CYRTOPODIUM PUNCTATUM, ONCIDIUM SPECIES, and also a fine lot of SACCOLABIUM CŒLESTE and AERIDES MITRATUM, collected by Mr. C. Roeblen.
On view morning of Sale, and Catalogues had.

Preliminary Notice.
The Downside COLLECTION of ORCHIDS.
Unusually IMPORTANT SALE of selected duplicate plants from this renowned Collection, consisting chiefly of examples matchless in point of rarity and culture, many being unique.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from Wm. Lee, Esq., to SELL by AUCTION, on the Premises, Downside, Leatherhead, in APRIL NEXT, in consequence of the overcrowded state of the houses, a selected assortment of ESTABLISHED ORCHIDS, comprising probably the most valuable assemblage of plants ever offered in a single day's sale.
N.B.—It is proposed to at once Catalogue the plants, many of which are now coming into flower. Intending purchasers will thus be enabled to inspect the lots, note the varieties, and mark their Catalogues accordingly.
Cards to view the Collection may be obtained at the end of next week of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Matlock Moor and Matlock Bank Nurseries,
MATLOCK, DERBYSHIRE.
TO NOBLEMEN, GENTLEMEN, NURSERYMEN, AND OTHERS.
HIGHLY IMPORTANT and ATTRACTIVE SALE of NURSERY STOCK.

MESSRS. ELSE AND SON have received instructions from Mr. George Farnsworth to SELL by AUCTION, upon the above named Nurseries, without reserve, on TUESDAY and WEDNESDAY, March 8 and 9, including several Acres of Valuable NURSERY STOCK, comprising upwards of 250,000 transplanted and bushy Rhododendrons, in sizes up to 2½ feet; large quantities of Evergreen Privet, Laurels, Cupressus, Retinospora, Yews, Hollies, &c. Sale to commence at 11 o'Clock prompt.
Descriptive Catalogues may be obtained on application to the Auctioneers, Matlock Bridge; or from Mr. GEORGE FARNSWORTH, The Nursery, Matlock Bank, one week prior to sale.
Matlock Bank Nurseries are situated close to Rock Side Hydropathic Establishment, and about half a mile from the Matlock Bridge Railway Station.

Cave's, Birmingham.
Attractive Two Days' Sale of NURSERY STOCK.

1800 Lots of NURSERY STOCK, including specimen Conifers, Roses, Shrubs, Fruit and Forest Trees, and specially selected Bulbs.—By AUCTION, MONDAY and TUESDAY NEXT, February 28, and March 1, at half-past 1 o'Clock punctually each day, without reserve.

FOR IMMEDIATE DISPOSAL, through ill-health, in an important Market Town, within 15 miles of Covent Garden, an Old-established NURSERY, FLORIST, and JOBBING BUSINESS, large Dwelling-house, Shop attached, with good frontage to the market-place, several Greenhouses and Frames, and 3 acres of excellent Land, mostly stocked and in working order. Seed Business can be taken as well if desired. Incoming very moderate, and is an opportunity that seldom occurs.
For particulars, apply by letter to C. D., 17, Norton Folgate, London, E.

To Nurserymen, Seedsmen, and Florists.

TO BE SOLD, a desirable BUSINESS, in the main street of an important Market Town, twenty miles from London, comprising a good Dwelling-house, a small Nursery, two handsome Seed Shops, Conservatory, nine Plant Houses, Potting and Store Sheds, &c. Lease, Stock, Fixtures, &c., about £500, a portion of which may remain if desired.
Address C. E. R., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

To Florists and Gentlemen's Gardeners.

TO BE SOLD, the Lease of a NURSERY, Greenhouse, Stock-in-Trade in full working order. Incoming low. An immediate purchaser will be liberally treated with.
For particulars apply to Mr. JAMES CLEMMANS, Surveyor, 5, Russell Villas, Seven Sisters' Road, Stamford Hill, London, N.

Old-established Nursery Business for Sale.

FOR SALE by Private Bargain, as a Going Concern, the well-known NURSERY BUSINESS carried on at Bangholm, Ferry Road, Edinburgh, and held by the Lawson Seed and Nursery Company (Limited) for many years past. The business was previously successfully carried on by Messrs. Peter Lawson & Son. All as previously advertised in the *Scotsman* of 19th and 22d January, 1887.
It is considered that the present is a favourable opportunity for any Public or Private Company acquiring on advantageous terms an excellent Nursery Stock.
Full particulars as to terms of sale or transfer can be had by principals or their agents on application in writing to Messrs. CHIENE AND TAIT, C.A., 67, George Street, Edinburgh, the Liquidators of the Company; or to Messrs. MACKENZIE AND KERMACK, W.S., 9, Hill Street, Edinburgh, their Agents.

To Cut Flower Growers, Florists, &c.

TO BE SOLD IMMEDIATELY, as a going concern, the ENTIRE STOCK, at The Nursery, Sandy Lane, Chester, consisting of many thousands of double and single Narcissus, Gladiolus The Bride, Eucharis, Hybrid Gladioli, Dahlias, Lilies, &c., especially purchased and planted for the production of Cut Flowers. Three Acres of Ground, Two Greenhouses, Cottage. Rent, £25 per annum.
Apply to Mr. WILLIAM EVANS, Crypt Chambers, Chester.

To Tomato, Cucumber, and Fern Growers.

TO BE SOLD or LET, on very advantageous terms, an ACRE of GROUND, with numerous Greenhouses, all well heated, and convenient house. Within easy distance of Covent Garden Market.
Full particulars and terms of Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, London, E.C.

Rhyl.

TO BE LET, a GENERAL BUSINESS PREMISES, with two commodious Warehouses attached. Agricultural Seed Business may be added with advantage to any business. Carried on for upwards of thirty years (owner retiring). Good House, with two Sitting Rooms, seven Bed Rooms, and close to the railway station at Rhyl.
Apply to Mr. J. JONES, 50, Kinmel Street, Rhyl.

Landscape Gardening.

H. F. MALLER (of the firm of B. Maller & Sons), late Pupil of the Crystal Palace School of Landscape Gardening, is prepared to FURNISH PLANS, or undertake any kind of the above work.—61, High Street, Lewisham.

SEAKALE PLANTS, strong, 40*s.* per 1000; Planting, good, 25*s.* per 1000. Dwarf ROSES, 20*s.* per 100. ASPARAGUS, 2-yr., 10*s.* per 1000; 3-yr., 15*s.* per 1000. All good quality, best money can buy. Cash with all orders.
R. LOCKE, Wrotham, Kent.

CŒLOGYNE CRISTATA
A few large Specimens for Sale.
Apply to W. B. LATHAM, Botanic Gardens, Birmingham.

ORCHIDS A SPECIALTY.
Stock immense in extent, fine in quality, moderate in price. Inspection invited.
HUGH LOW AND CO., Clapton Nursery, London.

DOUBLE CALTHAS.—Advertiser has a few hundred Single Flowering Crowns of this beautiful double CALTHA to sell at 3*s.* 6*d.* per dozen. 25*s.* per 100. See *Gardeners' Chronicle* last week, p. 245.
F. WALTERS, Nurseryman, &c., Abergavenny.
N.B.—Large clumps, 12*s.* per dozen.

BEGONIAS, superb and cheap.—"The strain of Begonias was equal to any we have seen elsewhere..." *Vide Journal of Horticulture*, August 26, 1886. Varieties for pot culture, from 6*s.* per dozen; for bedding, from 4*s.* per dozen. Descriptive LIST of sorts free. Extra choice SEED, single and double, 1*s.* and 2*s.* 6*d.* per packet. Special offer to the Trade. SCOTCH FIR, extra fine, 2 to 3 and 3 to 4 feet.
B. R. DAVIS, Yeovil Nurseries, Somerset.

FINE PYRAMID VICTORIA PLUMS and DAMSONS, 40*s.* per 100; RHODODENDRONS, fine hybrids, all colours, 1½ to 2 feet, 30*s.* per 100; strong bushy LAURELS, 10*s.* per 100; PLATANUS OCCIDENTALIS, 8 to 12 feet, £3 per 100.—W. JACKSON, Blakedown, Kidderminster.

NEW DOUBLE WHITE FUCHSIA, "MRS. SHORT."
MR. T. B. MORTON, *Florist, Darlington, writes*:—"I like Mrs. Short; it turned out very well. I think it will make a good market variety. I will take fifty plants." Sepals broad, coral-red, well reflexed; corolla pure white, nearly 2½ inches in diameter, and 2 inches in depth; dwarf bushy habit; requires no sticks. Price, 1*s.* each, larger, 1*s.* 6*d.*, post-free.
G. C. SHORT, Florist, Stokesley

CHARLES NOBLE, Bagshot, offers Nine kinds of LILIES, the best of recent introduction, 2 of each, 18, for 15*s.* cash.

CHARLES NOBLE, Bagshot, offers the finest selection of named RHODODENDRONS, AZALEAS, ANDROMEDAS, &c.

CHARLES NOBLE, Bagshot, offers the finest selection of CONIFERS and HARDY SHRUBS.

CHARLES NOBLE, Bagshot, offers general NURSERY STOCKS, including FRUIT TREES, AVENUE TREES, and others. All engaged in planting should see the Nursery and judge for themselves. A very fine selection of fruiting pyramid PEARS.
C. NOBLE, Bagshot.

Forest Trees—Forest Trees.

500,000 SCOTCH FIR — true native Highland. Best in the North of Scotland, transplanted, all sizes, to be sold unprecedentedly cheap. Sample and price on application to
D. STALKER AND SON, The Nurseries, Nairn, N.B.

NOVELTIES

WORTH HAVING.

ASTER "COMET."

ASTER, "COMET" (New Class).—The shape of the flowers resembles very closely a large flowered Japanese Chrysanthemum; the petals being long and somewhat twisted. Well grown produce from 25 to 30 perfectly double flowers, measuring from 3½ to 4½ inches in diameter. The colour is a lovely delicate pink, bordered with white. Per packet, 1*s.* 6*d.*

LOBELIA CAVANILLESI (Perennial).—A very showy species. One of the principal merits of this Lobelia is the beautiful, and in this tribe unknown, colouring of the flowers—the tube being brilliant scarlet with orange-yellow lips. Per packet, 1*s.* 6*d.*

LUPINUS HYBRIDUS fl.-pl. "PRESIDENT CLEVELAND."—New double-flowered form of this most free-flowering annual. The plants attain a height of 3 feet, and produce their flower-spikes of 8 to 10 inches in length in great abundance. The colour of the individual flowers is *purple, striped and shaded with rose, yellow, and crimson.* Per packet, 1*s.*

PHLOX DRUMMONDI ALBA fl.-pl.—This, the first *really Double Phlox* ever offered, may be considered an introduction of great importance among popular and showy annuals, producing a profusion of charming, densely double, pure white flowers. Per packet, 1*s.* 6*d.*

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Quite distinct—a very heavy cropper and large handsome pods. The best for eating. Per quart, 1*s*.

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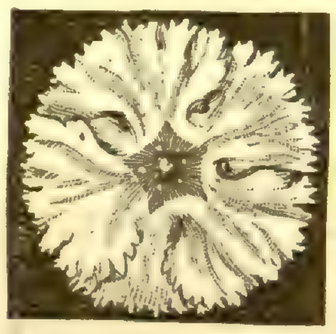

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RICHARD WALKER can supply the following for cash:—CABBAGE, Early Rainham and Enfield Market, 2*s.* 9*d.* per 1000 (its puffers always give 1200 on rail). Will sell cheaper than any man, sell cheap as they will. Every man knows Early Rainham. Enfield Market is the best grown Red for pickling, 4*s.* 6*d.* per 1000. ASPARAGUS ROOTS, best money can buy, three years old, 14*s.* per 1000. SEAKALE, planting, fine, 2*s.* 9*d.* per 100. White Spanish ONION Seed, 1*s.* 6*d.* per pound; Bedfordshire Champion, 1*s.* 8*d.* per pound; Nuneham Park, 1*s.* 9*d.* per pound.
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T. JACKSON AND SON, Nurseries, Kingston-on-Thames, and Royal Kitchen Gardens, Hampton Court.

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"DOUBLE FIRST-CLASS CERTIFICATE."

PRIMULAS, CINERARIAS, AND CYCLAMEN.

NEVER was there a time so absolutely necessary as now when all lovers of the above should "come and see;" for at this moment ours is the finest collection, the finest flowers, the finest display, and the best-kept in the world. Two First-class Certificates awarded to one flower, the only (second) instance ever known, which stamps ours far ahead of all others.

GARDENERS' MAGAZINE (Feb. 19, 1887) speaks of our Primulas thus—

"A box of Primula Flowers now before me, from Swanley, shows how rich and varied are the colours which are now to be found in this flower; the individual blooms are very large, and with great substance. The fringed flowers amongst the whites and crimsons are very attractive, but the most pleasing is a soft pink flower, that seems to be almost new. Almost every shade of red—some are particularly bright and clear—Swanley Purple is represented by large bold flowers of great excellence."

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All our seeds are beyond all question the finest in England.

"Mr. G. KILLICK, Nurseryman,
West Worthing.
"I am much pleased with the seeds you sent me; they have all come up, which speaks well for germinating quality.'

H. CANNELL & SONS,
THE HOME OF FLOWERS,
SWANLEY, KENT.

ROBERT NEAL begs to call the attention of Gentlemen, Builders, and others who intend planting this season, to his stock of FRUIT, FOREST, and ORNAMENTAL TREES, SHRUBS, ROSES, &c., which are in fine condition for removal, and comprise especially those kinds which are most suitable for Town Planting. Free delivery in own vans within a distance of six miles.
CATALOGUES on application.
The Nurseries, Trinity Road, Wandsworth Common, S.W.

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RHODODENDRONS.—Our Sweet-scented Greenhouse varieties, nice bushy plants, with buds, 2*s.* 6*d.* to 3*s.* 6*d.* each.
AZALEA MOLLIS Seedlings, fine bushes, well budded, each colour kept separate, 8*s.* to 9*s.* per dozen, 50*s.* to 60*s.* per 100.
,, PONTICA, nice bushes, well budded, 4*s.* to 6*s.* per dozen.
,, INDICA, best doubles, crimson, scarlet, pink, and white, nice dwarf bushes, well budded, 18*s.* per dozen.
DAPHNE MEZEREUM, red and white, full of buds, 3*s.*, 4*s.* to 6*s.* per dozen.
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CONIFERS,
CHEAP and FINE.

ABIES DOUGLASII, 14 to 15 inches, 70*s.* per 1000.
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PICEA CONCOLOR, 2 to 3 feet, 24*s.* per dozen.
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PINUS BOLANDIERI, 2 to 3 feet, 9*s.* per dozen.
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TAXUS (YEW), in great variety, 12 to 18 inches, 9*s.* per dozen.
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100 CONIFERS, in 50 distinct varieties, for 50*s.*
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DICKSON & TURNBULL,
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Beg to draw the attention of Planters to their large and healthy stock of transplanted FOREST TREES, SHRUBS, FRUIT TREES, GRAPE VINES (fruiting and planting), and ROSES; true native LARCH, 1½ to 4 feet; true native Scotch FIR, 9 to 24 inches; Mountain ASH, 3 to 8 feet; large stock of English YEWS, 1½ to 3 feet; CEDRUS DEODARA, 2 to 10 feet; PICEA NOBILIS, 2 to 4 feet; ARAUCARIA IMBRICATA, 2 to 3 feet; Standard double-flowering CHERRY, 5 to 7 feet; Double THORNS of sorts, 5 to 7 feet; HOLLY (Common), 1½ to 3 feet; Ornamental HOLLIES of sorts, Green and variegated, 5 to 8 feet; Standards, 8 to 10 feet stems. We have only mentioned those we hold large stocks of, and will be glad to furnish CATALOGUES and Prices on application.

CUCUMBER,
SHARPE'S EPICUREAN.

2s. per Packet (10 Seeds).

Epicurean will produce Cucumbers all the year round.

Epicurean is a fortnight earlier than Telegraph—a darker green, longer—more prolific, and better in flavour.

Trade Price and Special List of Novelties for 1887, *post-free on application.*

CHARLES SHARPE & CO., SLEAFORD.

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AËRIDES from the Philippine Islands.
CIMBIDIUM LOWIANUM.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, March 1, at Half-past 12 o'Clock precisely, by order of Messrs. Hugh Low & Co., a large number of imported plants of CYMBIDIUM LOWIANUM, including many fine masses; also several hundreds AËRIDES, just to hand from the Philippine Islands. All in the best possible condition.

On view morning of Sale, and Catalogues had.

COWAN'S SPECIALTIES.

CHOICE FLOWER SEEDS.

CINERARIA hybrida grandiflora (Garston variety), unsurpassed for size and form of flowers, and dwarf habit of plants, 1*s.* 6*d.* and 2*s.* 6*d.* per packet.

PRIMULA Sinensis Fimbriata alba, unsurpassed for size and substance of flower, 2*s.* 6*d.* per packet.

PRIMULA Sinensis Fimbriata rubra, unsurpassed for size, colour, and substance of flower, 2*s.* 6*d.* per packet.

PRIMULA Sinensis Fimbriata, extra fine mixed, 1*s.* 6*d.* and 2*s.* 6*d.* per packet.

CYCLAMEN persicum giganteum sanguineum, new, the most brilliant coloured Cyclamen yet introduced. Per packet, 2*s.* 6*d.*

CYCLAMEN persicum grandiflora, flowers of great size and substance, 2*s.* 6*d.* per packet.

CYCLAMEN persicum, saved from the best prize strain, 1*s.* 6*d.* and 2*s.* 6*d.* per packet.

BEGONIA, tuberous rooted, from the very best strains only, 2*s.* 6*d.* per packet.

CALCEOLARIA, extra choice strain embracing every shade of colour, 1*s.*, 1*s.* 6*d.*, and 2*s.* 6*d.* per packet.

CARNATION and Picotee from the very finest prize varieties, 1*s.*, 1*s.* 6*d.*, and 2*s.* 6*d.* per packet.

Collections of Choice Flower Seeds for Small Gardens, 5*s.*, 10*s.* 6*d.*, 15*s.*, and 21*s.*

FLOWER SEEDS of all kinds, of the best quality and at the cheapest rates. See illustrated and descriptive CATALOGUE, which will be sent post-free on application.

VEGETABLE SEEDS of the very best quality, and at the cheapest rates. See illustrated and descriptive CATALOGUE.
Complete collections for small Gardens, 10*s.* 6*d.*, 21*s.*, 31*s.* 6*d.*, 42*s.*, and upwards. All seeds carriage free.

ORCHIDS, an immense stock, suitable for cool, intermediate, and hot houses, and fresh importations are constantly being received.
12 best varieties for cool house, 24*s.*, 30*s.*, 42*s.*, and 60*s.*
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12 ,, ,, hot-house, 24*s.*, 30*s.*, 42*s.*, and 60*s.*
CATALOGUES with full particulars on application.

ROSES.—Splendid climbing Roses in 7-in. pots, with two or three shoots 8 feet to 10 feet long, 3*s.* 6*d.* each, Gloire de Dijon, Reine Marie Henriette, Celine Forestier, Cheshunt Hybrid and Belle Lyonaise.

Splendid climbing Roses in 7-in. pots with one and two shoots, 6 to 8 feet long, 2*s.* 6*d.* each: Gloire de Dijon, Reine Marie Henriette, Cheshunt Hybrid, Celine Forestier, Belle Lyonaise, and Waltham Climber, No. 2.

Splendid Dwarf Tea Roses, in 7-in. pots specially prepared for winter flowering in about 100 varieties, including Isabella Sprunt, Homer, Perle de Lyon, and Mrs. Bosanquet, 2*s.* 6*d.* and 3*s.* each, according to size. List on application.

VINES.—In the following and other varieties, unsurpassed by any in the country:—

Black Alicante, Black Hamburgh, Barbarossa, Buckland-Sweetwater, Foster's Seedling, Golden Queen, Gros Coleman, Gros Guillaume, Mill Hill, Hamburgh, Lady Downe's Seedling, Madresfield Court, Muscat of Alexandria. Strong planting Canes, 5*s.* each; strong fruiting Canes, 7*s.* 6*d.* and 10*s.* 6*d.* each.

The Company have an immense stock of all the above, and only really good plants will be sent to any who may favour the Company with their orders; and, should the plants sent not be satisfactory, they may at once be returned. Descriptive lists on application.

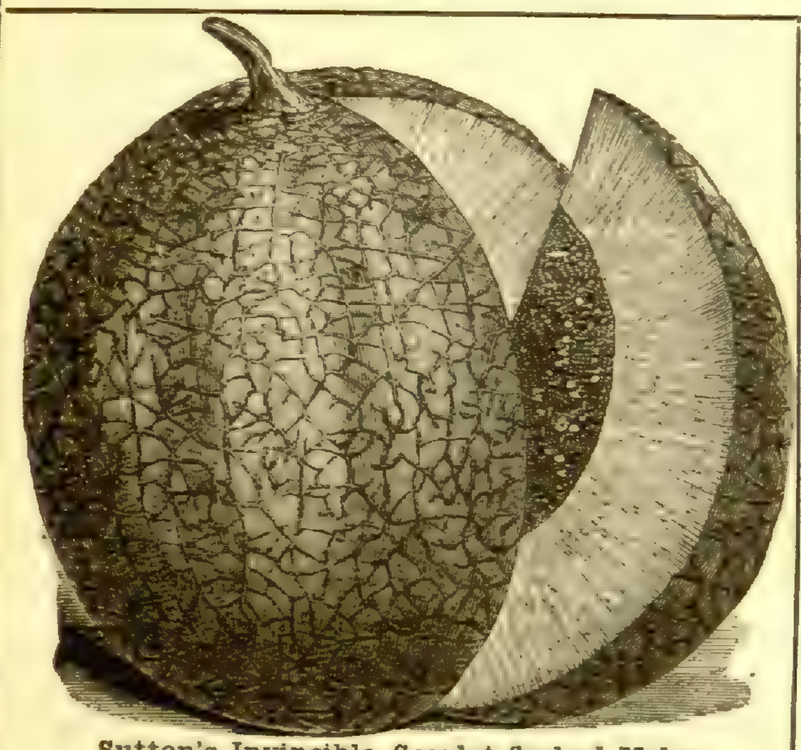
COWAN'S VINE and PLANT MANURE.—The Best Manure for Vines and Fruit Trees of all kinds, and also for Pot Plants. Prices as follows:—

Bags containing:—	1 cwt. 18*s.*	½ cwt. 9*s.* 6*d.*	¼ cwt. 3*s.*
Tins containing:—	7 lb. 2*s.* 6*d.*	2½ lb. 1*s.*	

Quantities of ½ ton and upwards sent carriage free.
Cash or reference from unknown Correspondents.

THE LIVERPOOL HORTICULTURAL CO.
(JOHN COWAN), Limited,
THE VINEYARD and NURSERIES,
GARSTON, LIVERPOOL.

SUTTON'S NEW MELONS.

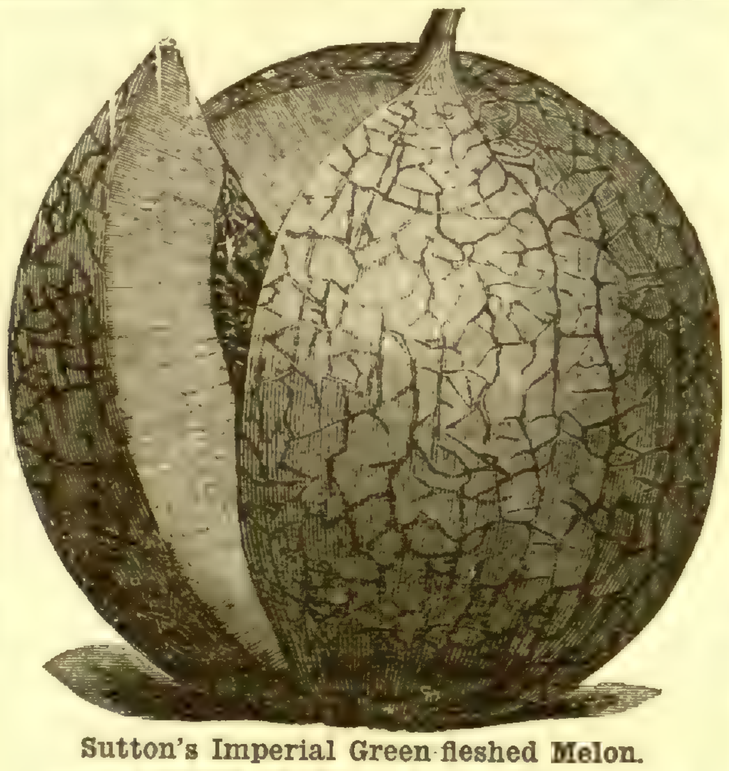


Sutton's Invincible Scarlet-fleshed Melon.

FIRST-CLASS CERTIFICATE Royal Horticultural Society, June 26, 1883.

"The Scarlet Invincible Melon has produced some very fine fruits, weighing over 4 lb. each, of most delicious flavour, beautiful thick flesh, equal in every respect to what you say of it in your *Amateur's Guide*."—Mr. W. BENTON, Gardener to W. H. Avery, Esq., Birmingham.

Per packet, 2s. 6d. and 1s. 6d., post-free.

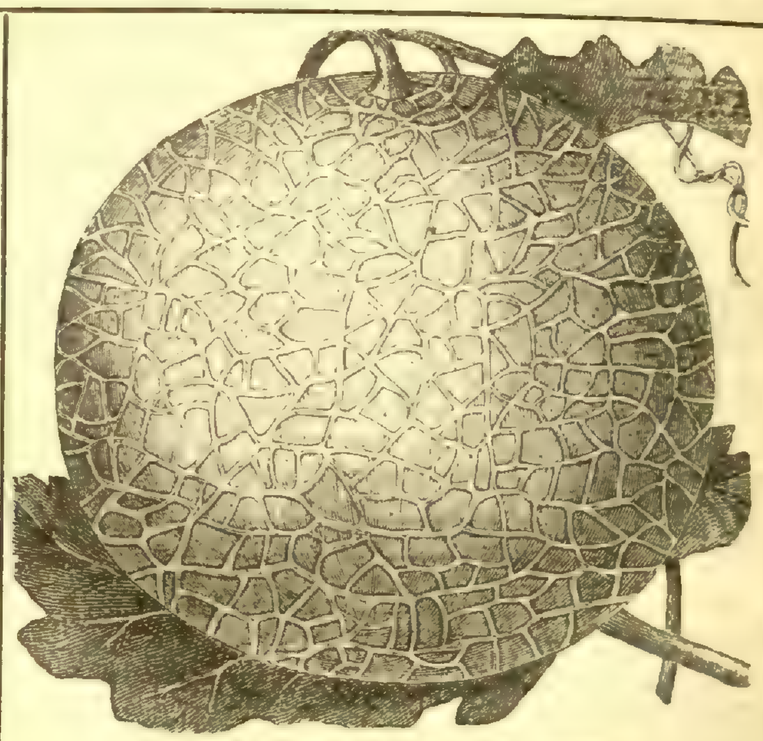


Sutton's Imperial Green-fleshed Melon.

Awarded FIRST PRIZE at the Royal Horticultural Society's Meeting, June 22, 1886.

"Your Imperial Green-fleshed Melon was first-rate, and very much liked here."—Mr. C. WILSON, Gardener to G. Rooper, Esq., Nascott House, Watford.

Per packet, 2s. 6d. and. 1s. 6d., post-free.



Sutton's Hero of Lockinge Melon.

FIRST, SECOND, and THIRD PRIZES at Royal Horticultural Society's Show, June 29, 1886.

"Your Hero of Lockinge Melon is the best I have grown for years. It grows freely, sets well, and above all the flavour is good; in fact, what I have seen of it during the past three years confirms the high opinion I had of it from the first."—Mr. GEO. MALCOLM, The Gardens, Willington Hall.

Per packet, 2s. 6d. and 1s. 6d., post-free.

SUTTON'S SEEDS
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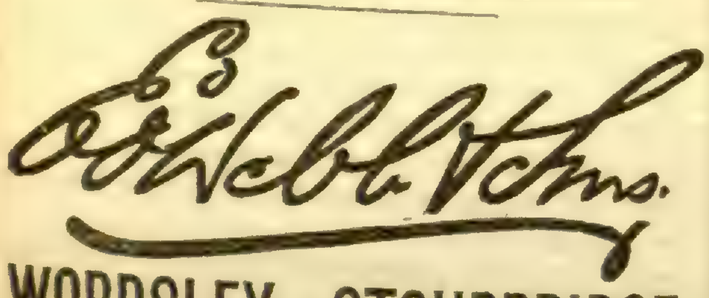

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THE

Gardeners' Chronicle.

SATURDAY, FEBRUARY 26, 1887.

HOOP PETTICOATS.

NARCISSUS BULBOCODIUM var. monophylla is the name by which the little Algerian white Hoop-petticoat, now becoming common in cultivation as a frame plant, is described by Sir Joseph Hooker, in *Bot. Mag.*, t. 5831, and figured in the *Gardeners' Chronicle*, 1870, p. 665. The varietal name was given after consultation with Mr. Baker, and was adopted by him in his *Review of the Genus Narcissus*, and, though it does not define the botanical character of the variety, that is no reason why it should be changed. It has been thought to be the same variety to which the name Corbularia cantabrica was given in Haworth's *Enumeration*, though he probably took the name from the habitat given by Clusius, for a white Hoop-petticoat, of which Haworth knew nothing. It has also been called Corbularia Clusii, because it was believed to be the white-flowered variety described by Clusius in his *History of Rare Plants*, about which we are going to speak. We may further observe that no Hoop-petticoat Daffodil is mentioned by Gerard, whose "Small winter Daffodil with a white flower" is evidently N. serotinus. Parkinson speaks of a white-flowered Hoop-petticoat found in the Pyrenees, "having the outer leaves or wings a little tending to green, and the trunk white or whitish." In this description he seems to follow Clusius. Now, as it is not at all likely that N. Bulbocodium monophyllus was ever found in the North of Spain, and as Clusius has always proved the most accurate and trustworthy of the botanists of the sixteenth century, it may be worth while to see what he says about the Hoop-petticoats. The following is translated from his *History of Rare Plants* (ed. Antwerp, 1601), p. 165:—

"In some of the hills of Portugal and Andalusia there grows another kind of Narcissus, of which the leaves are not broad, as of those described above, but very narrow and Rush-like: the scape is slender and bare, 4 inches high, and growing from a sheath on the top is a flower, consisting of six petals, greenish at first then pale yellow, widely expanded: in the middle of these is a yellow cup, oblong, like a wine-glass, &c. It was in flower in January, whilst

I was travelling from Lisbon to Seville. The natives call it Campanilla.

"After I had published *The History of Plants* noticed by me in Spain, Doctor John Mouton, of Tarbes, a very observant and trustworthy man, and an excellent botanist, sent me well-drawn figures of Rush-leaved Narcissus, which he had got copied from those flowering in his garden in the middle of March, 1576. He wrote me word that the roots had been given to him by a friend who dug them up in the Cantabrian Mountains on his way home from Galicia. (The Cantabrian Mountains are the continuation westward of the Pyrenees, and extend from the French frontier to Galicia.) In the year 1584 he sent me one bulb each of three kinds, all of which grew well and flowered in the following February, as I had kept them in pots and attended to them carefully.

"No. 1 was very like that which I have described above; in fact, I am certain it was identical. No. 2 had slenderer upright leaves, and a yellow flower—that is, a cup slightly crimped at the edge, and six perianth divisions, greenish at first, then pale yellow, &c. No. 3 had four or five very slender leaves, setaceous, green, procumbent, and spreading, out of which grew a small weak scape 4 inches high, and growing out of a membranous sheath at the top, a single flower weak in substance and uniform white. All these choice bulbs were killed by the severe winter of 1586."

It will be observed by this that Clusius never saw more than one bulb of white Corbularia, which flowered only once with him and was given to him out of the garden of a friend. The figure represents a small flower, borne at right angles to the scape, and having the perianth segments closely pressed against the corona. It bears five procumbent leaves. These characters hardly suggest C. monophyllus; it may possibly have been a white variety of C. nivalis, mentioned by Mr. Maw on p. 208, or more probably, considering what Parkinson says, a pale example of the small form of C. citrina. Still we do not doubt that the faithful and accurate Clusius described and figured what he saw. *C. Wolley Dod, Edge Hall.*

The White Hoop-petticoat Narcissus.

It would be difficult to over-estimate the value of this Narcissus at this dull season. It comes to cheer us in the very dullest season—December, January, and February, and yet it is but seldom met with in gardens. It has so many good points in its favour that it should be known to every lover of plants. Not one of the least of its recommendations is the ease with which it can be brought into bloom early in the winter season. Obtain some good home-grown bulbs, pot them in September, put them in a cold pit till the growth is well advanced, then put them into a warm greenhouse, and you can easily have them in flower by Christmas, or they may be kept in a cold pit where frost is kept out, and they will do just as well, but will be later in coming into bloom. The plants continue in bloom for several weeks. We have several 48-pots of bulbs, some of which were in bloom in the middle of the month of December. So free are they in blooming that to-day I observed some of the bulbs had two or three blooms from one bulb. They take but little room, a 48-pot easily holding six bulbs. They are not particular as to soil, but well ripening of the bulbs is a main point. All who want a supply of white Narcissus at this dull season should not lose sight of this gem seeing the ease with which it may be obtained. It is far more worth growing than many things that require much more time and trouble to flower well. I believe when it is better known it will be grown extensively. Amateur growers should not fail to give it a trial, and all who require choice cut flowers for bouquet work. *John Crook.*

Corbularias at Cintra.

Mr. Maw, in his paper on the distribution of this sub-section of the genus Narcissus, mentions the fact of his having found the form obesa at Cintra. The Moorish castle above this quaint Portuguese town is a favourite haunt for the Corbularias. Although the view from the ruined ramparts extends right across country to Mafra and Torres Vedras, the eyes of nearly all our party were mostly riveted on the golden garniture which glistened close to our feet. No spot seemed too sterile or too stony for these tiny bulbs to establish and reproduce themselves. The very stone steps, if only a scanty handful of soil chanced to lurk in any corner or the mortar to crumble, were invaded and occupied; not even were the rain-worn crevices and craters in the huge bouldery rocks left tenantless, but nearly all had their goldilocked inhabitants. A more delightful place for a botanist content with plants already discovered than Cintra could not well be prayed for. *Vagabond.*

Plants New or Noteworthy.

ODONTOGLOSSUM WILLIAMSIANUM, *Rchb. f.*

This appears to be the finest member of the group to which Odontoglossum grande, Insleayi, and Schlieperianum, belong. Mr. B. S. Williams, the lucky possessor of an unique plant (represented with four bulbs only in the *Orchid Album*, vol. iv., tab. 163), states that he sold his treasure to Count de Germiny, of Gouville, one of the most eminent orchidists of our days, whose fame will be trebled when the now neglected distichous species come once more into fashion—the Count having in the meanwhile formed such a collection as cannot be for many years, perhaps not at all, surpassed.

I suspected the plant was a hybrid between Odontoglossum grande and O. Schlieperianum. Mr. B. S. Williams states that it comes from Costa Rica, but whatever may be the knowledge of others, I have both species from Costa Rica. I think now I was mistaken. I have at hand five fine American inflorescences from a district in which, so far as I am informed, neither the one nor the other above-named species grows. They quite agree with my Williamsian document, and with the representation in the *Album*. The shorter, broader, blunter petals are to be seen in all the numerous flowers. The uncinate wings of column are constant.

Mr. B. S. Williams tells us, no doubt with no want of inward satisfaction, that he exhibited an inflorescence with twelve flowers, and I may say that I have at hand a Central American raceme with eleven flowers; so that no doubt under favourable circumstances, at the acme of development, we may even see more flowers.

I have little doubt that this excellent species will reappear on the scene. If somebody should say that it is a variety of O. grande, let him do so—say nothing. *H. G. Rchb. f.*

Cultural Memoranda.

DEUTZIA GRACILIS.

This deciduous hardy shrub is the most gracefully habited white flowering plant that adorns our forcing-houses and conservatories during the winter and spring months and the flower garden in early summer. The flowers, too, are most suitable for the making of bouquets, ladies' sprays, &c. Cuttings of the young growths taken off this month and inserted in 3-inch pots filled with sandy mould, and having a surfacing of sand, watered, and then plunged to the rims in a hotbed, will become rooted in a few weeks, when they should be potted off singly into small 60-sized pots in a like description of soil, and be put back in heat, watered, and after the roots have taken to the soil be stopped, subsequently (after the plants had been hardened off), planting them out in prepared soil in a suitable part of the garden, in rows one foot apart, andat the same distance in the rows, and afterwards attending to them in the way of watering and stopping of the shoots during their growing season. Thus treated they will make nice little plants for potting up in 4-inch and 6-inch pots towards the end of September, so that they may become established there by the fall of the leaf. *H. W. W.*

Freesia refracta alba and F. Leichtlini.

These beautiful fragrant bulbous plants are now in bloom here, and are very much prized as being very valuable for decorative purposes when cut or in pots. These bulbs are easily cultivated. We put them, about August 20 and the first week in September, into 6-inch pots, six bulbs in each pot, in well-drained good light loam mixed with a little sand; then place them into a cold frame or pit till the end of October; at about this date they are removed to a greenhouse. If required in flower early, the pots may be placed in a temperature of 60°. When they have done flowering we let them gradually dry off, and keep them dry till wanted again for potting. Lachenalias of various sorts are now in full beauty with us. These are treated in this way, and are also most useful, for vases, in either the conservatory or the house. The plants arrange well with Tulips and Hyacinths, as they neutralise and tone down their strong colours. *Wm. Smythe, Basing Park, Alton, Hants.*

Pot Roses.

After the plants have made a few inches of growth they will be greatly benefited by frequent waterings of liquid manure. This, in connection with an occasional surface-dressing of Beeson's manure, will cause the plants to develope larger and more solid blooms than would otherwise be secured from them. The Rose maggot, if not well looked after, will work havoc among the buds. When the leaves of the plants are folded it is an indication of the maggot being secreted therein. If the syringe is not sufficient to keep the plants free from the attacks of aphis, the house containing them should be fumigated with tobacco-paper a couple of evenings in succession when the weather is calm. *H. W. W.*

NOTES FROM SWANLEY.

One of the chief points of attraction amongst the multifarious collection of "soft stuff" here is the house full of zonal Pelargoniums. The colours of the flowers are so brilliant and refreshing to the eye after the barrenness without at this season of the year, that the beholder may be pardoned if he indulge in any extravagance in language.

Flowers are not grown at Swanley to be looked at there only, but are cut and disposed of daily without the aid of that modern invention the middle-man, thereby largely benefiting the grower, who has the most right to the value of his labours; and therefore we did not see the Pelargoniums in their first flush of beauty. We are nothing if not practical, and so will proceed to mention just a few that took the eye on "running through":—Romulus is a fine double, deep lake, of velvety texture; Belle Nancienne, the very cream of the whites, with a salmony centre; Madame d'Elloy, a very pale pink; Comtesse Sphean Disermer—we think there must be some mistake in this name,—the flower is semi-double, colour white, a dwarf grower, and very free; Swanley Gem; Meteor, an excellent scarlet, with a good truss; Lady Chesterfield; Edith George, a beautiful large truss, of deep rose; Limette, also very fine; Mr. H. Cannell, dazzling scarlet; Norah, of the palest rose; an improved Miss Hamilton. Every one having the means should have a small house for zonal Pelargoniums, fitted with a heating apparatus to maintain a genial temperature, and above all with a pipe running close down to the lower angle of the roof as a means of warding off damp from the plants in winter days, when ample ventilation is incompatible with the necessary intermediate-house temperature. With such a house bunches of gay flowers and plants with good heads of flower can always be obtained with a minimum of labour wherewith to enliven dwelling rooms and conservatories.

Cyclamens of the giganteum type are plentiful here, and found in great variety of colour and marking. Some exquisitely spotted flowers were observed, this

spotting finding place on the ground colour of most of the varieties. The plants are very robust, the leaf finely marbled, and the crop of flowers to come seemingly enormous. Mr. Cannell does not hurry on his Cyclamens with heat, and does not endeavour to get a full-grown plant within the period of a year, so that his plants do not fail when put under the ordinary conditions of culture.

The Cinerarias, which were only just showing colour, should be a fine sight in a month's time. These are just about the perfection of Cineraria growing—robust, stocky, every part well developed, without a trace of "fly."

The Primulas are excellent, several houses being filled with them, the fine doubles of various colours, and the singles of the sinensis sections, occupying different houses. Four rows, 100 feet long, of Primula sinensis, White Perfection, formed a fine sight. This variety is a great improvement on the Queen, the white purer, and the flower less puckered; Queen of Stripes, a pale rose, with an Auricula eye of an orange colour, is another good kind, shortly to be brought out; Emperor, a deep crimson-rose, of a velvety texture,is a notable sort.

The double kinds are particularly useful for greenhouse decoration, and are here always increased from cuttings.

The Begonia-house was filled with flowering plants of fibrous-rooted species; gigantea rosea, a very free-flowerer; nitida, nitida alba, carnea, Kurari, echinosepala, with curious prickly petals, flowers white; Gloire de Sceaux, a rose coloured flower, and bronzy foliage. Mr. Cannell finding his present amount of nursery garden much too small for the necessities of his increasing business, has taken a farm of 300 acres at Eeynsford, a station on the railway about 2 miles from Swanley Junction. This land lies on the slopes of a circular basin shut in by hills on all sides; and is admirably adapted for any kind of nursery business, fruit and vegetable growing. Twenty acres of this fertile vale have already been trenched, provided with roads, paths, and water; and are being planted with stock from Swanley. The terms of his lease of 40 acres out of the 300 are very favourable, so that with ordinary good management, the energetic founder of the Home of Flowers, and his descendants will have a larger and a better home for nearly a hundred years to come. Who will venture to predict what the florists' flowers may be in 1987, or what the area of the land devoted to them?

NOTICES OF BOOKS.

LABOUR ON THE FARM. By John Chalmers Morton. (Bradbury, Agnew & Co.)

This is one of the excellent series of Handbooks of the Farm, edited by Mr. Morton. The subject-matter precludes our dealing with it at all critically. It must suffice here to say that the book opens with a general statement as to the amount of hand, horse, and steam-power made use of in farms of different character, and which are managed on different systems. This is necessarily a statistical chapter. Then come chapters on steam-power, and that derived from water, wind, horses, or the thews and sinews of more or less intelligent and responsible labourers. These are explanatory and argumentative sections. The fifth chapter deals with the cost of the several farm operations, and the last with the distribution of the cost throughout each month of the year, according to the nature of the work to be done at each particular period. The book is written in that clear, straightforward and agreeable style that arrests the pleased attention of the reader, and compels him to respect the author, even in cases where he feels he must differ from his conclusions.

INDUSTRIAL IRELAND: *a Practical and Non-Political View of Ireland for the Irish.* By Robert Dennis. (Murray.)

This is a book which excites our warmest sympathy. No more potent means of putting an end to the unhealthy fermentation that characterises the neighbouring island can be suggested than healthy, profitable industry. The climate is so wet, much of the land so barren and relatively destitute of mineral wealth, that many in this country who do not know the facts of the case look upon any attempt to improve the industrial resources of the country as foredoomed to failure. Let such people read Mr. Dennis' little book. In the course of some two hundred pages he deals with a surprising variety of subjects—agriculture, cattle breeding, the butter trade, quarrying, timber, pottery, paper making, besides numerous minor industries that might be carried on in the cottages of the peasantry. After the perusal of these chapters no one can lay the entire blame of the present condition of Ireland either on the climate or on the soil. Resources there are awaiting development, and these not few nor unimportant. So abundant are these resources and so varied that it is almost with indignation that one reads of their misuse or neglect. Whether this arises from faulty systems of government or from hereditary racial characteristics it is not for us to discuss here. All that we can do is to thank Mr. Dennis for his book, and give a general support to his contention in those matters with which we are here concerned, such as the plantation of forests, the growth of Osiers, the growth of hay, the culture of soft fruit, green vegetables, root crops, and flowers for the London and other markets, bee and poultry farming. As to the advantages of afforestation on a large scale in Ireland there are not two opinions, but necessarily those advantages would be prospective. Immediate returns might be had, however, from proceedings such as bring wealth to the Scilly Islands and Western Cornwall.

LE PROPRIETAIRE PLANTEUR, &C. Par D. Cannon. (Orleans: Herluison.)

This is a little treatise full of useful practical hints on the subject of afforestation and decorative planting, and is designed for the information of landed proprietors and estate managers. Agricultural depression is as severely felt in "Protected" France as it is here: our neighbours have the further trial consequent on the ravages of the Phylloxera. The author shows the large extent of waste land (*en friche*) in France which might be profitably planted, and ultimately serve to compensate for the losses sustained by the agriculturists. So much of what Mr. Cannon says is applicable to this country, and in particular to Ireland, that we urgently commend this little treatise to the attention of our readers, and especially to that of our statesmen. To the landed gentry and the statesman the language in which this book is written will afford no obstacle, but for all that, we should be glad to see a satisfactory translation; in the meantime, we may endeavour to give our readers a general idea of its contents. The lessons they convey are in the main applicable to this country and to Ireland, and those that are of purely local interest may be passed over here.

Mr. Cannon advocates the importance of at once planting all land which is no longer profitable, either as pasturage or as arable, and to render worn-out waste lands productive by better systems of cultivation, appropriate manures or improved tools; and lastly, by planting all waste land not suitable for ordinary cultivation. The author speaks with the confidence that experience alone can give. What he preaches he has practised for the last fifteen years in Sologne, one of the poorest regions of France, but which is now in process of rapid transformation, and in spite of agricultural depression is comparatively and increasingly prosperous.

In the cultural enterprise of the present day, the margin which represents the difference between profit and loss becomes daily narrower, from the effect of competition and increased cost of production. Every error in management, every useless extravagance in planting may, therefore, engender serious loss in the future, the ill-effect possibly not becoming apparent till long after the cause; for if Art in general is long and life is brief, the art of forestry is specially long, for the life of the planter only corresponds to the infancy of the tree.

In the first instance, then, Mr. Cannon counts the cost, and bids the intending planter calculate the ratio of cost to the probable ultimate yield; he gives instructions as to the selection of appropriate sites, and of trees suitable for particular soils. He details the necessary operations, and shows how economical is good and careful work—how wasteful is inefficiency or false economy. In France a remission of taxation for thirty years is granted to those who engage in planting waste or unproductive lands, and similar remissions or compensations are granted for losses by storms or frost. To obtain these *degrèvements*, however, a good deal of red tape seems to be unwound and wound up again.

Having thus given general directions to the would-be planter as to the relative advantages of sowing, planting, or transplanting, and given instructions as to the methods of doing each operation, and of testing the quality of seed, the author proceeds to deal with individual trees in a manner at once concise and accurate, giving just what the planter is likely to want, and no more—indeed, if it is incumbent on us to point out a defect, it must be that the author errs on the right side, and is over cautious, not in what he recommends, but in what he passes over.

As an illustration of our meaning we may refer to several trees of great promise as forest trees, but which are only spoken of as ornamental subjects. The trees we allude to are the Douglas Fir, the Nutka Cypress (Cupressus nutkaensis), the Thuia gigantea, the Nordmann Fir (Abies Nordmanniana), and the Red-wood (Sequoia sempervirens). All these have now been introduced and grown for a sufficiently long time to show that they are hardy trees of great promise, and which therefore might be gradually and tentatively introduced into plantations for profit. We might mention others, especially among the new Japanese introductions, but their period of probation has, as yet, been too short. Of course the objection of cost is the great impediment, but one which would be removed in the case of the trees mentioned, just as it has been in other cases.

The thoroughly practical character of the book is happily expressed in the French proverb with which the book concludes, "C'est en forgeant qu'on devient forgeron"—a statement that no one will controvert; but for all that, a book as good as this one is saves labour and time, and is calculated to be of very great assistance to the forester.

INDIAN ORCHIDS.

Conditions under which They Grow.—Deciduous varieties of Phalænopsis are principally confined to the mainland of India and Burmah. Plants of this genus growing in the Archipelago are not as a rule deciduous, the climate of the islands never attaining the dryness of the mainland.

Phalænopsis Lowii.

This plant loses all its leaves in its native habitat directly after flowering. It grows on limestone rocks, and on the branches of small bushes, growing in the crevices of the rocks. The ranges of limestone hills on which it grows, rise suddenly out of the delta of the rivers Gyne, Ataran, and Salween, Tennasserim, Burmah. The country surrounding these hills is under water the geater part of the year, and the rainfall is excessive. By the end of November the country dries up, and on January 1 both flower-stems and leaves have dried up, nothing remaining but the roots. The roots cease to grow, but are kept plump by the heavy dews which fall at night. The resting season is short, as showers fall in March, when the plant at once begins to put forth fresh leaves.

Some observers have noted that the plant

grows on the rocks exposed to the hot sun without receiving any injury. This is only correct to a certain extent; critical examination of the statement would elicit the fact that the plant does not grow on the south-west side of the hills; it grows on the north-east side, and is thus protected from the effects of the afternoon heat of a tropical sun. These limestone rocks are covered during the rains with many beautiful annual Balsams and tuberous Begonias. This will give a hint to gardeners of the sort of moist heat required to grow P. Lowii to perfection. It likes a little moss in cultivation, but cannot bear peat. During the rainy season it receives an immense supply of water at the roots. It rejoices in plenty of light and a fair amount of sun, as large trees do not grow on the limestone rocks.

Phalænopsis Parishii.

This plant, a native of Moulmein, loses its leaves, during the dry weather, in moist localities. If the rains set in late, before the leaves get a fair start, it is not unusual to see the plant in flower before the leaves develope. It is generally found on boughs of trees covered with moss, it is subject to great heat and moisture during the growing season. In cultivation it will retain its leaves throughout the winter, if the moss at the roots is kept slightly damp (not wet) during the resting season. To flower it well it is necessary to start it as early as possible, so as to encourage leaf growth. No doubt it flowers better when the leaf growth is luxuriant.

Phalænopsis Listeri.

This plant, allied to P. Parishii, grows in India under similar conditions.

Phalænopsis (Doritis) Wightii

is found in Burmah growing with P. Lowii. It grows on small bushes—not on the limestone rocks. It is subject to exactly the same conditions, and is almost as deciduous as P. Lowii, the leaves, however, being more leathery, and able to stand the sun and dry winds. Large plants are able to retain a few of their leaves during the dry weather.

With these deciduous Phalænopsis we cannot much improve upon Nature. The great object in cultivation should be to start them in growth as early as practicable. In Nature the earlier the rains the larger the leaf growth and the finer the flowers produced. *Emeric S. Berkeley.*

LÆLIA ANCEPS AND ITS VARIETIES.

The varieties of Lælia anceps recently introduced are so numerous and so beautiful that they have deservedly found great favour with Orchid growers and in several of our best collections considerable space is devoted to them. Among the largest and best cultivated collections of the varieties of Lælia anceps is that in Baron Schroeder's famed garden, under Mr. Ballantine's care, from whence we received the specimens from which our illustrations (figs. 58 and 59) were prepared. It seems strange that, notwithstanding the hunt which has all along been going on for new Orchids, the original rose and crimson form known as the type, which first flowered with Messrs. Loddiges in December, 1835, and which was figured in the *Botanical Register*, t. 1751, in 1836, and afterwards in the *Botanical Magazine*, t. 3804, from His Grace the Duke of Bedford's plant, in 1841, should, with its darker-tinted variety, L. a. Barkeriana, for so many years be the sole representatives of the species; no sign of the beauty of the white forms to be revealed to us being seen until the first white variety and still the finest, Lælia anceps Dawsoni, flowered in 1867 in the collection of T. Dawson, Esq., Meadowbank, near Glasgow. For purity of the white of the sepals and petals, their breadth and symmetrical arrangement, the fine form and bright hue of the purplish-crimson of the labellum, and other qualities which make up the standard of general excellence, this fine variety has never been rivalled, but approaching it near enough to be spoken of as worthy associates are L. a. Sanderiana (fig. 59), which gives a distinct reminder of L. a. Dawsoni, with some little defects in shape and a lighter tinge of crimson on the lip; L. a. Stella (fig. 58) pure white with yellow throat marked with light crimson lines, and L. a. virginalis, the finest pure white with no other colour than yellow in the throat, which was certificated to F. A. Philbrick, Esq., at the Royal Horticultural Society, in December last year, the two other varieties named justly receiving the same honour at the first meeting in 1887.

L. a. Williamsi has pure white medium sized flowers in which the throat of the labellum is tinged with yellow, and marked with dark chocolate lines, which, unless viewed very closely, appear to be black; L. a. Veitchiana is a distinct form, with clear white sepals and petals, and well formed labellum, marked with crimson lines in the throat, and tinged with purplish-blue on the front lobe, and side wings which clip the column. L. a. Calvertiana is like a narrow petalled and pale form of L. a. Dawsoni; L. a. Hillii, a comparatively small flowered variety with white sepals and petals, and labellum marked inside with yellow, and tinged with pink on the front portion. L. a. alba and L. a. vestalis are both fine white forms, and L. a. Percivaliana, L. a. blanda, L. a. leucosticta, L. a. rosea, and L. a. delicata, all more or less pink or rose tinted varieties, which have with others been duly described in the columns of the *Gardeners' Chronicle*, as they appeared—the last of these, L. a. Schroderæ (p. 72), being an entirely new form with blush sepals, rose petals with purple tips, and showy white, yellow and purple lip. Most of the varieties of L. anceps are fragrant, and all are good lasting blooms, so that they are sure to find favour with all lovers of good flowers. Of course now that large importations of L. anceps varieties promise to give us endless variety, the same difficulties will be experienced in classifying them which have presented themselves in other large sections composed of one species; but careful study of the peculiarities of each will invariably give a key by which they may be identified. *J. O'B.*

Fig. 58.—Lælia anceps var. Stella: flower white, throat yellow with crimson lines.

Plants and Their Culture.

TEA ROSES.

Teas, as a class, are decidedly more useful for indoor culture than are any others. In the first place they are better adapted for training on pillars and trellises, and, secondly, they produce a valuable succession of chaste blooms for cutting purposes. Where planting was not done in the autumn it may receive attention now, and in preparing the borders or beds the thorough drainage of their sites must be first seen to, and the compost, which may be 2 feet in depth, must be made quite firm, and should consist of good strong loam moderately enriched with decomposed manure, and made porous by a sufficiency of sharp sand or old mortar rubble. In planting

shake the soil from the roots, which spread and cover, pressing the compost firmly around them, and then mulch with short manure, and give sufficient water to settle the soil. When growth commences the weakest shoots should be rubbed out, and the strongest trained about 8 inches apart, and encouraged to grow to as great a length as possible without being stopped. It is a mistake to train them thickly, so that the foliage becomes crowded, as this prevents the wood being properly matured, and is thereby is not only detrimental in lessening the number and quality of the blossoms, but accelerates an attack of mildew—the Rose's most deadly enemy. The most efficient remedy we have tried in our small Rose-house for destroying this parasite is a weak solution of sulphide of potassium, which has been frequently recommended in this journal. For meeting an early spring demand for blossoms we cultivate a number of plants in pots, which are repotted in autumn, and are introduced a few at a time into heat when each Peach-house or vinery is started; in this way a lengthened supply may be kept up. All the pruning pot-plants need is to have their weak growths removed, and the strong ones shortened, if it is undesirable to tie them in. During the time the plants are in active growth they should be afforded mild liquid manure every alternate watering, or be lightly top-dressed occasionally with concentrated manure. Like many other subjects, the varieties of Tea Roses have become too numerous for ordinary growers to cultivate all. The following is a selection of good ones:—David Pradel, Jean Ducher, La Boule d'Or, Madame Lambard, Madame Willermoz, Maréchal Niel, Marie Van Houtte, Niphetos, Souvenir d'un Ami, W. F. Bennett, Reine Marie Henriette, and Madame Bravy. *T. Coomber, Hendre Gardens, Monmouth.*

Fig. 59.—Lælia anceps var. sanderiana: flowers white, disc of lip crimson. (see p. 280.)

THE COCORITE PALM

(Maximiliana regia).

The full-page illustration in the *Gardeners' Chronicle* of February 12 last gives a very good idea of this magnificent Palm as seen growing in the openings in the bush on the river banks in British Guiana. One point, however, which no picture can give, and which constitutes the peculiar beauty of the Cocorite Palm, is the way in which the light and shade are constantly changing places on the curled leaflets as they flutter in the breeze with a delicious rustling motion, as if dancing for joy. They are sure to come out a little indistinct in a photograph, for they are never still for an instant.

In the dense wall of green on each side of the river it is difficult to distinguish one tree from another, but here and there we come to a clearing where these superb trees appear to the greatest possible advantage. They do not grow close together in a grove, but a little way apart, as if planted for ornament on a lawn. Perhaps the most beautiful stage of growth is that represented in the illustration, with the noble leaves rising straight from the ground; but the tree does sometimes develope a stem 60 feet high. When only half this height the trunk is often invisible, being completely covered with creepers and Ferns. The finest of these plantations of Cocorites, as they may be called, that I saw was up the Demerara River, at Arima, where the steamer stopped for the night, and I was able to go right up to the trees and observe the construction of the leaves. The leaflets are rounded at the tips, and are set on at different angles in groups of four or five, so that they seem to bend and arch all round the leaf-stem, hiding it just as the quill is hidden in a beautifully curled ostrich-feather. The upper surface is deep green, and they are whitish underneath.

The Indians in the interior make darts from the leaf-stems, and use the leaves for thatch. They eat the outer pulp of the berry, as well as the kernel, and press oil from the seeds. The two other Palms I noticed most on the river banks were the Æta (Mauritia flexuosa), which has splendid fan-leaves, and a stem like a grey stone column; and the graceful Manicole, our greenhouse favourite, Euterpe edulis. *G. Layard.*

HORTICULTURAL SUNDRIES.

MESSRS. CORRY, SOPER, FOWLER & CO.

A very comprehensive word—Sundries! In the present instance it seems to include everything pertaining to a garden except the garden itself and its living contents, and until a visit is paid to such an establishment as that which we are about to mention, even the gardener will fail to realise how vast and how varied are the garden requisites that are catalogued as sundries. Messrs. Corry and Co., of Finsbury Street, describe themselves as "Wholesale Horticultural Sundries Merchants to Nurserymen, Seedsmen and Florists," and in addition to their showrooms and warehouses stuffed to repletion, yet in perfect order, they have at Shad Thames—as manufacturers of manures, including Standens', and insecticides, and of all sorts of Tobacco-preparations for horticultural use, as well as sheep and cattle dressings—a factory and bonded Tobacco stores and warehouses. Here they have for many years manufactured, free of duty, under the supervision of the Board of Customs, those preparations of Tobacco which have been widely used for the destruction of those particular forms of animal life which occasion diseases, especially in the skin, among the live-stock of the farm, as well as those other preparations having nicotine for their essential element, and known for their excellent effects in settling, so to speak, the corresponding parasites that affect plants, such as scale thrips, greenfly, red-spider, mealy-bug, American blight, and so forth. Tobacco would be absolutely useless without the presence of its active principle, and, therefore, in the manufacture of preparations for fumigating greenhouses, and of those other articles known as "London Tobacco Juice" and "London Tobacco Powder" they obtain, duty free, the best Virginian or American leaf Tobacco. With the assistance of scientific chemists, they have the most suitable apparatus for securing the essential oil of Tobacco.

It is, however, with "nurserymen's, seedsmen's, and florists' sundries" that their great place at Finsbury Street is filled. As for the contents of these successive store-rooms, there are a thousand articles which a wealthy horticulturist, on seeing them, would wish to possess; and nothing can be used, few things imagined, in connection with gardening and certain arts connected therewith, which are not here in great quantities. Cork for aquarium, aviary, balcony, ball-room, cascade, conservatory, fernery, fern-case, garden borders, grotto, orchestra, rink, rockery, stage scenery, summer-house, waterfall, window-case, wall, or what not—you will find patterns and designs here, and you may have estimates of the necessary work, all to be done in virgin cork; so with rustic woodwork and garden furniture, you may see here nice little huts, as in the recent Exhibition grounds at South Kensington, hanging-baskets, wall brackets, flower-pot stands,

garden seats of Yew tree, tables, or Fern-cases zinc-lined, or anything else in the same line.

There is scarcely anything you cannot find here. Take cutlery, or syringes, or garden-engines, or water-barrows—here they are in all sorts and all sizes. A very large trade is done in syringes. You may have a German or an inferior English syringe, costing little, and not good for much—a light syringe, poorly fitted, and very inferior to a good English-made article, having weight and substance, made of brass, and lasting for years—Cooper's patent, throwing a fine spray for tender foliage, is a good thing of the kind. But we must not stop too long in one place if we wish to inspect one-half of this attractive exhibition.

Passing on we come upon baskets. Here is the Princess basket, used by ladies in picking flowers, and many other kinds made of wicker, wire, wood, cane, or Rushes; fancy baskets, punnets, or useful Sussex trugs, which ought to be used in every garden, for holding fruit and vegetables, or such things as weeds, stones, or rubbish of any kind, which may be gathered into these cheap and strong receptacles. A new industry of recent years is represented in these ample stores by a large stock of metal and porcelain wreaths and crosses, representing such flowers as Asters, Camellias, Carnations, and Roses, and leaves of the Ivy, Oak, Rose, or Vine. They are all painted after Nature, and some of them are artistically made and somewhat costly, the prices ranging from 12*s*. to 300*s*. per dozen. Some of the most beautiful of the wreaths, which are specially adapted to the decoration of public as well as private rooms, halls, churches, tombs, or statues, are made of dried flowers, such as the white and pink Rhodanthes, Cape flowers, and Cape silver leaves, resembling satin ribbons, and dried Ferns. Among the most exquisite of the flowers which are now imported for decorative purposes is a "Californian Thistle," as large as a Teazle, and well named the Fairy Flower, is one of the most beautiful. Thistle heads are fugitive, but the Fairy Flowers are really the hairs surmounting the seeds of a species of Asclepias reversed and tied together by their points by fine wire. The white Cape flowers may be purchased in convenient boxes, wired or loose; and Statices by the pound, and many other kinds and colours per pound, per dozen, or per thousand.

The list of dried flowers, grasses, mosses, and artificial plants and leaves is a long one, the articles in this department filling ten pages of Messrs. Corry's catalogue; and perhaps the most interesting of many rooms and floors is that in which a number of women and girls are engaged in making wreaths and bouquets, weaving and tying flowers and grasses, and blending them with Ferns and leaves. The various Ferns and many mosses are dried on the premises, while a great many of the flowers and grasses are dried in those warmer countries which produce them. In this line we are much indebted to the Mediterranean countries, especially for the Palms. Grasses come from abroad in great variety, especially from Germany and Italy, but also from California, and the Pampas from Canada. In this large class we may name Avena fatua, A. sterilis, Agrostis pulchella, Uniola paniculata, Stipa pinnata (Feather-grass), Millet, Phalaris canariensis, Briza maxima, and B. media; and we will close this long list with the Bulrush.

In another department we come upon Fern cases, Hyacinth glasses, window boxes and aquaria, empty here and very various in shape, size, and cost; as well as ornamental flower-pots in china, Wedgwood, terra cotta, majolica, and other ware. There is much to admire here, but too much for description. The stocks of articles in large demand are immense. There are 150 boxes of bouquet-holders, and bouquet-papers, some of the latter being elegantly trimmed and embroidered in satin, swansdown, or tulle, and bordered with real lace.

Sticks, labels, glass and paints, canes for sticking Chrysanthemums, and wooden stakes for Dahlias are bought by hundreds of thousands by the firm, and they had already sold over a million sticks last autumn on November 9. Bamboo canes are imported from the East Indies; sticks, plain or painted and of various lengths, from Germany, in bundles of 100. Among the requisites is raffia fibre, the best material for tying, and is obtained from the Palm tree of Madagascar (Raphia ruffia), also Cuba bast, the best budding cotton, Archangel mats, and others; tarred twine, Bedfordshire sand, charcoal, bones, all sorts of manures for Vines and plants in pots, zinc labels, indelible ink, Verbena pins and various pegs, and who shall say what else in the miscellaneous line! Then there is a very ingenious machine for cutting zinc labels; and Daisy grubbers, Asparagus knives, lines and reels, and garden rollers, water-pots, and exceedingly convenient fruit gatherers and flower ditto—(one of the latter, enclosed in a walking-stick case, is a capital thing, and would prove a welcome gift—18*s*. 6*d*.)—with all garden tools required. They also import large quantities of French *secateurs* and pruning tools.

We have not enumerated a tithe of what we might have done, but we have said enough to show how many interests are concerned, what an extent of varied industry is employed, and what an amount of capital is invested in a pursuit which the unreflecting might think of but minor importance from a commercial point of view.

THE HERBACEOUS BORDER.

POLYGALA CHAMÆBUXUS.

It is somewhat remarkable that this plant is not more frequently met with, seeing the great number of years it has been under cultivation. The first we hear of it is that it was cultivated in the Oxford Botanic Garden about 1658, and now we have not more than two or three forms. Both Clusius and Jacquin mention a variety with calyx and wings of a beautiful purple; and Scopoli, who greatly admired this plant, has noticed four distinct varieties, which he describes as follows:—"One with white wings and a yellow keel, one with white wings and the keel red at the tip, one with red wings and the tip of the keel yellow, and one with red wings and keel, but the tip of the latter variegated with red and yellow." It is known under the name of Box-leaved Milkwort, and is an elegant little evergreen shrub, bearing little resemblance to any of the other species; indeed, both Tournefort and Haller considered it of a distinct genus. In the typical plant the calyx is composed of three nearly white divisions, the two outermost petals also nearly white, and the third, which forms the keel and contains the stamens and pistil, is whitish at the base, changing to yellow or bay towards the tip, and often purplish in a variety. The variety called purpurea is by far the best and showiest in cultivation, and as it continues flowering more or less from May to October, it is found extremely useful for the rockery. It prefers a light rich soil, and we find that it grows more freely in a partly shady spot; a few large stones introduced around the plant are very beneficial to it, and the roots will be found to seek their cool shelter almost in preference to the soil. It may be propagated by division, but as it takes a considerable time to establish itself after this process we prefer cuttings. They are taken off in autumn, and placed in pots in a cool frame, and they will be found to have made sturdy little plants towards the next spring.

Mimulus Fremontii.

This is a pretty creeping Monkey-flower, lately introduced from Santa Barbara in California, somewhat resembling Erythræa diffusa, both in the size and shape of the leaves, and in the slender procumbent stems. It forms nice fresh green tufts, rooting at the nodes or joints as it creeps along, and is thereby very easily propagated; each of the nodes emits a few thread-like roots, which soon take firm hold when placed in fresh soil. The flowers are not by any means large for a Mimulus, though large for the size of the plant; but their size is amply compensated for both by quantity and effect, the corolla being bright crimson and very handsome, nestling among the tiny leaves. The flower is funnel-shaped, with a wide spreading limb. It is nearly allied to M. Bigelovii and M. nana, neither of which is yet in general cultivation, but from what we have seen of them we can assure growers that there is yet a treat in store for them. *D.*

Portulacas.

When well grown and planted so as to bloom in masses or small beds in the summer months, few lowly plants exceed in beauty the Portulacas. Being a succulent plant abounding in sap, its roots are nevertheless few, and delicately fragile; it is needless to say that the best cultural results may be looked for on south aspects, protected hillsides, &c., in the warmer parts of the island. Like the South American Purslane (Portulaca sativa), all the hardy annual species appreciate enriched, well worked, thoroughly drained deep soils; and dislike crude lumpy soil in any form. Probably the charm of these plants consists in their prostrate form of growth, very large flowers, comparatively speaking, and the endless variety of their lovely colours. Until recent years single-bloomed forms only existed; during recent years, however, double flowers have been raised which are reproduced true from seed, precisely as are the single-flowered varieties. Cultivators differ as to whether the minute seeds should be sown upon the bed or border whereon the plants are to grow, or in pans and boxes for subsequent transplanting. My experience is, that excellent results have accrued from both.

When properly treated it is all-important, as has been said, to choose a warm site and a dry subsoil. Manure and neatly dig this over, then prepare a heap of compost, by adding equal parts of sandy loam, decayed manure, and soil of a peaty nature together; break these materials very fine, mix thoroughly, and cover the bed with it to a depth of 6 inches or less; or, if a long row is to be grown, place such compost in an elevated row 7 inches in depth where it is intended the display shall be. Pat this down into somewhat conical shape, but with a flat surface. Sow the seeds thereon about April 20, and very slightly cover with fine soil. When the plan of transplanting is intended, sow the seeds about the end of April. Grow the seedlings on to a fair size, and transplant during showery weather, taking care not to bury the plants beyond the root base (at the time of transplanting), watering them in freely as necessary. It will be seen I am adverse to late seed sowing, as plants are known to come up occasionally from self-sown seed, and to transplanting seedlings when too young, which is also a mistake frequently made. *William Earley.*

THE BOUVARDIA.

A few remarks on my system of propagation may prove acceptable to some who have not met with that success in the management of this plant which is not only possible, but easy of attainment.

Cutting-up the Roots.

When the plants are done blooming cut them over close to the soil, and shake the roots free from the soil. With the knife trim off all the small fibrous parts, and cut the strong roots into sections of from three-quarters to one inch in length, splitting the remaining portion of the stem, if strong, into four, if otherwise, into two parts. Prepare some cutting pans or boxes, fill them to within 1½ inch from the top with a mixture of one part leaf-mould, one part charred garden rubbish, and two parts sand sifted through a half-inch sieve. On this lay the chopped roots and stems, and cover with three-quarters of an inch of the same compost. If the soil be dryish, give a watering of tepid water, through a fine rose. Place the boxes in a structure which has a temperature of from 65° to 70°—a Melon-house is just the place. The young cuttings will soon show themselves above the ground, and with the leaves will appear the roots also.

Potting-up.

When the shoots have developed three pairs of leaves, lift carefully with a stick, and pot in small 60-pots, in a compost similar to that recommended for the cuttings. Let the young plants get well established in these pots, and remove them to an intermediate pit or house, keeping the young plants as close to the glass as posssible. In a short time it will be necessary to repot. This time the compost should be a little rougher, and for one part of the sand used, substitute one of good sound loam.

After-Treatment.

After the plants have taken to their new shift a system of pinching the shoots should be adopted, and the plants should receive a free admission of air. Towards the end of May, or early in June, it will be safe to trust them out-of-doors. An old frame which has been used for forcing Potatos, on the top of a spent leaf-heap, will be found a suitable place. A similar compost to that recommended for the second shift, but coarser, with a little less sand and a little more loam, should be spread to a depth of 6 or 8 inches. The plants should be turned out of their pots and planted in this, from 10 to 12 inches apart. The whole should receive a good watering with tepid water through a rose. The sashes should be placed over them for a few days, and they should be gradually hardened off till they are removed entirely. The treatment is now pinching and watering. By the month of July they will commence to throw up strong shoots from the soil; these should be allowed to grow without pinching, as they are the shoots from which the crop of flowers is to be obtained. See that they never suffer from want of water, and alternately water with Thomson's manure and dung-water.

The Blooming Stage.

About September the points of the shoots will begin to show signs of setting for flower. They should now be lifted and potted, a dull day being chosen for the operation, if possible. The plants should be carefully lifted with a fork, to preserve the fibry roots; pots should be had in readiness for their reception. The weakest will go into 6-inch pots, but the strongest ones will require 8-inch and 9-inch for their accommodation. As potting proceeds neat sticks should be placed in the pots, and the plants trained at once. A deep cold pit should be in readiness for their reception, and this must be kept close, well shaded, and the plants constantly dewed with the syringe, till they have taken after the shift and can bear the light, when a free admission of light and air should be given them. They can be removed as required, and receive a little heat to develope their flowers. I treated 700 plants in the above manner last year, and we have reaped an abundant harvest of flowers all through the winter, and yet there is a quantity. The only insect which troubles the Bouvardia thus treated is greenfly, but a little weak tobacco-water from a fine-rosed syringe keeps them clean. *Wm. M. Baillie.*

The Bulb Garden.

MERENDERA CAUCASICA.

Flowering now in the Lily border at Kew is a bulb which we think ought to be more generally diffused. It is never later than the beginning of February in opening its charming white flowers, and were it grown in large patches instead of only a few bulbs would no doubt present a welcome feature. Coming from the Caucasian mountains it is perfectly hardy in the open border, and so dwarf and sturdy that protection of any kind can be very well dispensed with. M. robusta, a near ally of M. caucasica, is also in flower, and though not to be compared with the above, its flowers being smaller, it is still worthy a place in every garden where spring flowers form the chief desideratum. They grow well together, and increase in such a way as to give hopes of their being more widely distributed before long. The Eremurus close by are already beginning to shoot their leaves up, all of which seem strong and healthy after their warm covering. *D.*

Iris reticulata var. sophenensis.

This pretty little Iris is now in bloom in the greenhouse at Kew, having simply received the protection afforded by a cold frame during the winter. It was fully described by Dr. Forster in these pages for April 11, 1885, where its chief differences from the type and the principal varieties are fully stated. Although a decided acquisition on account of its flowering so much earlier I do not think it will ever take the place of the old and well known I. reticulata. I. sophenensis, named from Sophene, the old name of the district around Kharput, produces its flowers, and is well-nigh full blown before the leaves make their appearance. It is very dwarf at this stage, the flowers rarely more than 1 or 2 inches from the ground. The lamina is of a light reddish-purple marked by a low ridge of orange-yellow, duller than in the type. Standards reddish-lilac with scarcely visible lines. It seems to do very well with pot culture, but in all probability flowers much too early to be useful in the open air without some kind of protection, which is not always covenient. *D.*

Daffodils: the small white Moschatus Varieties of the Pyrenees.

These pretty little forms must be found on the Pyrenees at very high altitudes, or else on the southern slopes (Spanish side), where sunshine would be retarded. I have 3000 bulbs planted since August against a south wall in my garden at Temple Hill, and they are now only appearing above the soil—in appearance of foliage similar to Snowdrops. Will collectors say whether my surmise be correct, and why? because pallidus præcox, variformis, &c., are in full flower this day (February 14). Tortuosus minor is a much better name for them, as all the blooms are most beautifully tortuous and unique in this respect. See Daffodil note in *Gardeners' Chronicle*, February 19, p. 247, and read tortuosus minor for "fastuosus."

Forcing Caltha palustris (see p. 245, *Gardeners' Chronicle*).—I have anticipated M. Carrière in the way in which the soil is kept moist. I put the plants in a 7-inch pot, and cork the hole of an 8-inch pot; the latter is filled with water, the smaller pot is stood within it, and charcoal drainage used to keep the soil pure in the 7-inch one. *W. B. H., Cork.*

Orchid Notes and Gleanings.

SOME PLANTS IN FLOWER AT KEW.

Lycaste jugosa.—In the Orchid collection at Kew are two or three well-flowered examples of this interesting and somewhat scarce Orchid, which was figured many years ago in the *Botanical Magazine*, under the name of Colax jugosus. It is a Brazilian plant, with long oval pseudobulbs, 2 or 3 inches in length, dark green lance-shaped pointed leaves about 9 inches long, and three or four flowered spikes. The sepals are pale cream coloured, the petals white, transversely blotched with dark chocolate-purple, and the three-lobed lip thickly dotted with purple.

Spiranthes colorata.—This pretty terrestrial Orchid is well worth growing for its handsome erect spikes of red flowers, the bracts also being highly coloured. It remains for a considerable time in full beauty, and it seems strange that so charming a plant should be so curiously neglected; there is no mention of it even in the last edition of Williams' *Orchid Growers' Manual.* Some pans of it at Kew are now amongst the most conspicuous objects in the Orchid collection. Formerly it used to be grown under the name of Stenorhynchos speciosa,

Pleurothallis glossopogon, now in flower in the Kew collection, is a very strange and striking species, with probably the largest flowers in the genus, In general appearance it resembles P. scapha—perhaps an almost equally uncommon species—figured in these columns, vol. xv., p. 784. Large as are the flowers of the last-named plant, a fine specimen of which we recently saw in Mr. Bull's establishment at Chelsea, those of P. glossopogon are about double the size—the unopened buds being about the length of a man's middle finger. A figure from the Kew plant has been prepared for the *Botanical Magazine.*

Mormodes colossus.—A good plant, with a couple of erect spikes nearly 2 feet in height, each bearing about a dozen large flowers, is now to be seen in the Kew Orchid collection. The individual flowers measure about 5 inches across, the narrow, spreading or reflexed sepals and petals being pink-tinted, somewhat flushed with yellow towards the tips. The species is a native of Central America, and was figured in the *Botanical Magazine*, t. 5840. *G. N.*

Sophronitis grandiflora rosea.

It may be interesting to know that we have a plant of the pink-flowered variety of this Orchid in flower here at the present time, it being the second plant of the kind that has flowered with us this season. The plant has three leads, but only one of them is strong enough to flower, they being the first growths made in this country. I have seen two plants of this variety at the garden of Mr. Peacock, of Sudbury House, Hammersmith, and from comparisons made with the several plants it would appear that the rose-coloured variety is not so vigorous as the type, but it is very distinct in habit of growth, both bulb and leaf being much shorter than those of S. grandiflora. We have six plants that were purchased at one time from Messrs. Low & Co., Clapton, which appear to be of the same habit, and indeed two of them have already produced pink flowers. *H. A. Page, Mount View, Sheffield.*

Calanthe nivalis and Turnerii.

A collection of these popular and useful winter Orchids will not be complete without a few plants of the above late sort. By having C. Veitchii, C. rosea, C. lutea, and the above, a succession of Calanthe flowers may be had from the end of October to the end of February. Turneri and nivalis are about at their best with me now, and Veitchii was well in at the end of October. *O. T.*

Orchids at Mr. Philbrick's, Bickley.

This collection is well known to contain some choice and rare specimens, which are well cared for by Mr. Heims, the experienced gardener. At the time of my visit, about the third week in February, the choice white varieties of Lælia anceps were nearly over, but the collection contains handsome specimens of the best varieties, including an excellent one of L. anceps Dawsoni; this had eleven bulbs and four leading growths, all of them strong enough to produce flowering spikes. Cattleya Percivalliana is in flower; two of the forms are very richly coloured. Cœlogyne cristata maxima had thirty spikes on one plant, with six or seven flowers on a spike. Other large specimens had a charming effect arranged in the Cattleya-house. The singular-looking Scuticaria Steelii had produced two of its yellow flowers blotched with reddish-brown. I counted fifty blooms of Cattleya Trianæ, some of them very handsome varieties. Now that this handsome early flowering Cattleya can be purchased as cheaply as any other stove plants no warm house should be without them. The pale coloured forms rank in some collections as a species under the name of C. Warscewiczii.

The small span-roofed house set apart for the culture of Phalænopsis is at present very attractive; containing as it does some very remarkable specimens in the best varieties of the various species. P. Schilleriana is remarkably well bloomed, some of the spikes having eighteen well formed flowers; P. Stuartiana is also very distinct, forming most elegant spikes, two varieties being considerably ahead of their fellows, by reason of the dense clusters of minute dots on the lateral sepals; P. amabilis is also producing numerous spikes of large flowers. A plant of P. casta × was producing a spike of probably the largest flowers of this species yet seen. The flowers were 3⅛ inches by 3 inches. This is a natural hybrid between P. amabilis and P. Schilleriana. All the Phalænopsids are cultivated in Teak baskets suspended near the roof, and they succeed quite as well on the sunny as on the shady side of the house. A very regular moist atmosphere is kept up by evaporation from the borders, which have been planted with small leaved plants with variegated foliage, which also have an excellent effect. *J. D.*

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APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

WEDNESDAY, MAR. 2—Society of Arts, at 8 P.M.

THURSDAY, MAR. 3—Linnean Society, at 8 P.M.

SALES.

MONDAY, FEB. 28 — Twenty thousand Liliums in variety, from Japan, &c., at Stevens' Rooms.

TUESDAY, MAR. 1 — Roses and other Plants, at the City Auction Rooms, by Protheroe & Morris. Imported and established Orchids, at Protheroe & Morris' Rooms.

WEDNESDAY, MAR. 2 — Lilies and Plants, at Protheroe & Morris' Rooms. Hardy Plants and Bulbs in variety, at Stevens' Rooms.

THURSDAY, MAR. 3 — Seakale and Rhubarb, on the Premises of American Exhibition, Earl's Court, by Protheroe & Morris. Importations of Orchids from Mr. F. Sander, at Stevens' Rooms.

FRIDAY, MAR. 4 — Imported Orchids, at Protheroe & Morris' Rooms.

SATURDAY, MAR. 5 — Roses and other Plants, at Protheroe & Morris' Rooms. Hardy Plants and Bulbs in variety, at Stevens' Rooms.

Vegetable Products and their Cultivation.

If there was one thing more than another which struck the thoughtful visitor to the Indo-Colonial Exhibition of last year, it was a feeling of surprise at the vast resources afforded by the vegetable kingdom. Even those more or less familiar with vegetable products of various kinds from different countries were compelled to own that they had never before so completely realised the immensity and diversity of the means at our command. At a time when botany, or one portion of it, is falling into disrepute, as witnessed by its recent partial exclusion from the curriculum of the Medical Schools and of the Universities, it is worth while calling to mind the fact that it is to botanists, and to systematic botanists in particular—to the very class whose labours just now are held in relatively little esteem—that we are indebted for a knowledge of these resources; not wholly, of course, but mainly so. Witness what was done for economic botany in the past by the Roxburghs, the Wallichs, the Wights, the Royles. Call to mind what has been done by the Hookers, father and son; by Lindley, by Ferdinand von Mueller, by Hanbury, by Markham, and many others that might be mentioned. Think what is being done now by Dyer, by Morris, by Watt, by Duthie: and it will be seen that the botanists of what is now called the old school have been the chief agents in bringing to light, identifying and developing, those products, the importance of which has been so forcibly brought home to us. Consider, too, for a moment on the one hand the depressed state of agriculture, and on the other the host of matters awaiting development, and for which development increased knowledge, botanical, chemical, and cultural, is demanded, and it will surely be seen that this is no time to depreciate the study of systematic botany. We cannot, however, stop to discuss this part of the question. It may aid others to do so, it may promote the extension of profitable knowledge, if we make passing allusion to some of the various conferences and lectures delivered relating to vegetable products, and which are the more or less direct outcome of the Exhibition.

Reports on special subjects—such, for instance, as on fibres for textile purposes, for paper-making, and for mats, ropes, and basket-work, have appeared. During the discussions that took place many interesting facts came out on the uses of the products under notice; thus, on the question of vegetable fibres suitable for substitutes for silk, a sample of Jute was exhibited by Mr. Cross which had been subjected to a chemical process, the effect of which was to reduce the fibre to its ultimate fibrils, and at the same time to increase the durability of the substance. "This chemically treated Jute," it is stated, "was much admired, the more so as it was almost impossible to distinguish the fibre from Tasar silk."

Amongst substances suitable for paper-making the bark of Bauhinia Vahlii was considered the most hopeful, and it seems that since the Conference a number of paper makers and textile manufacturers have applied for and obtained samples of the Bauhinia fibre; and it seems likely that, as a direct outcome of the recent Exhibition, this plant will become an important one for a number of applications.

On the subject of perfume-yielding oils, the otto of Ilang Ilang (Cananga odorata) is said to have been the first ever exhibited from India; while the tubers of Cyperus rotundus, and the oil prepared from them, were pronounced quite new to Europe. This substance is said to be largely used in Upper India to perfume clothes, and an essential oil is prepared from the tubers.

Of oils suitable for candle and soap making, that from the seeds of the Mahwa (Bassia latifolia) was thought to be the most hopeful; it was stated to be harder than Cocoa-nut oil—a fact, in the candle trade, that would make up for its slightly inferior quality; Messrs. Price & Co. report it to be worth £35 per ton. It is believed that it has never been, to any great extent at least, experimented with for the purpose of the European soap trade, although the people in Guzerat and other parts of India make soap largely of it. With reference to dye products, it is stated by Mr. Mu Rharji, that the Charila of the Punjaub (Parmelia Kamts-Chadalis) is employed in India to a considerable extent in calico printing, but with the object of imparting a peculiar perfume, and a very pale rose-tinge to the fabric.

Perhaps one of the most important of the Conferences was that on Tobacco and cigars. "Most of the samples of leaf exhibited were pronounced almost unsaleable from being packed too hard, having a bad smell, and being often perforated, and even broken, and indeed in many cases almost rotten, due to imperfect curing. . . . A few samples were, however, much admired, and one or two brokers were authorised by the manufacturers to take steps to procure large quantities if the price was found suitable." It was strongly urged that the leafstalks should be cut off at the base of the blade and never exported to England. It was pointed out that about 75 per cent. of the Tobacco cut for the pipe is sold in the shape of shag at 3*d.* an ounce, retail. The manufacturer sells this at 3*s.* to 3*s.* 2*d.* a pound; so that, taking the average cost of Tobacco at 6*d.* and the duty at 3*s.* 6*d.*, the article is being sold at considerably below cost price. This is due to the fact that the raw Tobacco comes into the manufacturer's hands in a dry state, and the profit is made on the increased weight due to moisture absorbed. A Tobacco must, to use the technical expression "drink well" to be profitable, but if the importer has to pay duty upon a heavy section of the parent stem dangling at the end of a long and heavy leafstalk it is impossible that he can make a profit. Indian native leaf is also very injuriously coated with sand and dirt, which, apart from the trouble of cleansing which this necessitates, greatly increases the duty by raising the weight. England is, one might almost say, well enough supplied with Tobacco without the aid of India, and with numerous disadvantages it is scarcely likely that India can take an important place in the supply of Tobacco unless radical improvements are effected. Tobacco on importation should contain not more than 10 per cent. of water, for although the duty is raised when there is less than 10 per cent. of water, it is not lowered when there is more. This is a most important consideration, and one that cannot be too forcibly urged, for, as has been stated, the profit in the Tobacco trade is due to water, but it is fatal if the importer has to pay duty on the latter.

Regarding Indian cigars, though there has been a considerable sale of Trichinopoly and Burmese cigars of late, it was stated at the Conference that they could never compete with those produced in the best cigar producing countries, and their only competition would be with those of British make. Indian cigars are described as being too hard filled and that instead of being packed in a bunch-like manner the filling of Indian cigars went through the entire length: this makes them heady and difficult to smoke. It was "urged that every consideration should be subordinated to the effect on duty, since it is the heavy import duty that kills the Indian cigar trade, and therefore light weight was of primary importance.

Since the Exhibition closed Mr. Morris, the energetic Assistant-Director of Kew, has read an elaborate paper on "Fruit as a Factor in Colonial Commerce." It occupies many closely printed columns of the *Colonies and India.* Its length, however, precludes us from reprinting a paper which is of the highest practical interest. It must suffice to say that Mr. Morris called attention to the possibilities of our colonial empire as a source of a large supply of fruit, illustrating his subject by reference to the display made in the colonial market throughout the whole duration of the Exhibition from various colonies, the most remote as well as the nearest. Mr. Morris shows how most of the fruit consumed in this country, that is not home-grown, is derived from foreign countries. The value of the fruit in round numbers is £8,000,000 sterling per annum. This might equally well be earned by our fellow-countrymen in the colonies, who are able to supply us with the fruits of tropical as well as of temperate regions. Mr. Morris alluded to the inter-colonial fruit trade, and to the supply of the American market from Jamaica and other West Indian islands. Of Apples, the

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PLANTATION OF TARO IN A CHINESE VILLAGE.

home country imports barrels to the value of £700,000 annually, the larger portion of which comes from the United States, Canada only supplying fruit to the value of £91,000 annually. Mr. Morris then passed in review the fruit-producing capabilities of the several colonies, and showed how much their resources might be increased by attention to fruit culture and exportation. Mr. Morris' labours for the development of so-called minor industries in Jamaica and elsewhere, as a means of alleviating the trade depression which prevails in some colonies are so well known and appreciated that his remarks were listened to with much attention; and as an illustration of the practical character of his address it may be mentioned that an important section of it was devoted to the proper means of packing and shipping.

Another exhaustive paper was read lately before the Society of Arts by Dr. George Watt on the "Economic Resources of India," Here, again, the importance of "minor" products was dealt with as only a botanist could deal with them. The paper is published in full in the *Journal of the Society of Arts* for February 18, to which we must refer the reader, merely saying that the greater part of the paper is taken up with the discussion of products, the European trade in which is capable of greater extension, or of products practically unknown in European commerce, but which promise to be of very considerable importance. The products are classed under the heads of foods, drugs, fibres, and oils. Dr. Watt's remarks illustrate forcibly the waste of resource that arises from imperfect appreciation and want of application of the knowledge acquired by the botanists.

Another paper of great interest in the same number of the *Journal of the Society of Arts* is that on Colonial Woods, by Mr. Ransome. Our readers will remember the magnificent samples of various kinds, many of which were alluded to in our reports at the time, and they will be glad to have in a convenient form the record of the experiments made by Mr. Ransome to test their value for different purposes. One great defect in the consideration of woods arises from their faulty or defective nomenclature. In many cases the botanical source is not known, in others the indiscriminate and most inappropriate application of such terms as Cedar, Cypress, Iron-wood, &c., is a real bar to knowledge.

We would not in any degree impute blame to the authors of the papers we have mentioned, that they did not specially treat their subjects from the point of view of cultivation; but we must point out here emphatically that this question of cultivation is all-important. Cultivation is imperative, if the resources we have alluded to are to be continuously developed; otherwise, we run the greatest risk of destroying what we ought to conserve, and of recklessly using up what we ought to be propagating and developing. The necessity for cultivation is of course greater in some cases than in others—in many cases it is prospective rather than actual—but it is none the less imperative. The first thing is to know thoroughly, we mean not superficially, what our resources are, and this is work for the botanist; the next thing is to know how to develope them to the best advantage, this is the work of the cultivator, and he requires not only practical skill and experience, but extended knowledge of vegetable physiology, the conditions under which plants grow, and how they may be modified and adapted to suit our requirements. He must grow the best, and he must grow them in the best way. The merchants must do the rest.

A Plantation of "Taro" in a Chinese Village (see Supplement).—Gardeners who grow Caladiums for their brilliant foliage are often not aware of the part that a nearly allied plant plays in affording a nutritious food. Colocasia esculenta, or antiquorum, is, however, largely cultivated in many tropical and sub-tropical countries for the sake of its tubers or rhizomes, which contain much starch. Any poisonous matter which the tubers (or the leaves, for these also are employed) may contain is dispelled in the process of cooking. Our illustration, for which we are indebted to Mr. Westland, of Hong Kong, shows a field of this Aroid in the vicinity of a Chinese village. The bold, deeply coloured foliage must be very striking. Many varieties are grown, hence, as usual, a multiplicity of names.

Linnean Society of London.—On Thursday, March 3, at 8 p.m., papers will be read on the following subjects:—1. "Genetic Affinities and Classification of Algæ." By Alfred W. Bennett. 2. "Fungoid Disease of Colocasia in Jamaica." By George Massee and D. Morris.

Gardeners' Orphanage.—Mr. Penny writes:—"With reference to my suggestion for a Gardeners' Orphanage, I have already received a certain amount of promises of support if the idea can be successfully developed, and I shall be glad to hear from any gardener in the country who is ready and willing to assist me in drawing up the plans. There is an old proverb that 'He gives twice who gives quickly,' and therefore in the interest of these poor children I am anxious that whatever is done should be done at once. My first annual subscriber was Mr. E. G. Beale, of the firm of Carter & Co., seedsmen; Mr. Bull, New Plant Establishment, soon followed; £10 donation was received from Messrs. Sutton & Sons, Reading; and several letters, most encouraging, have been received from Messrs. Veitch & Sons, Chelsea; Messrs, Low, Clapton Nurseries; and from influential gardeners." For our own part we shall be pleased to help forward the scheme in any way within our power, if the project is considered feasible, and one not likely to injure the Gardeners' Benevolent, which, it must be remembered, is still not well supported by the rank and file of the craft. It is not likely that such a scheme as an Orphanage can leap into full development at once; it must grow from humble beginnings, and must be tenderly nursed in the cutting-frame till strong enough to be planted out.

"Journal de Botanique."—The first number of this journal has been published, containing articles on the constitution of lichens, on the maritime flora of France, on various fungi, on the culture of Nepenthes, by M. Hérincq, and others, together with notes of proceedings in the several French botanical societies, bibliographical records, &c. The most interesting artlcle, perhaps, is that of M. Bonnier, in which he records how, following the instruction of M. Bornet, he has succeeded in actually producing lichens by sowing, with proper precautions, spores of lichens on Algæ. After a time a true lichen thallus was formed, while in those cases where the lichen spores were sown without any Alga, the development of the spore became arrested. M. Bonnier's experiments are very numerous, and confirm the opinion that a lichen is not a separate organism, but a compound of an Alga and a fungus.

Moore Memorial Fund. — Communications have been received from Mr. T. S. Ware, Mr. G. Baker, Membland, Plympton, and Mr. J. T. Peacock.

The Oxford Carnation and Picotee Union.—Mr. E. S. Dodwell, the Hon. Secretary and Treasurer, has just issued the second annual report of the Union, in the form of a pamphlet of thirty-four pages, including a full report of the show on August 3 last, some useful reports from local secretaries, notes by the editor, and some touching *In Memoriam* notices of deceased florists, from the pen of the Rev. F. D. Horner. The success of the Union has been of a remarkable character. The number of members in 1885 was 110, it is now 203, deducting a loss of some twenty by deaths and withdrawals. The income for the year 1886, derived entirely from subscriptions and donations, amounted to £100 3*s*., and the expenditure to £92 8*s*. 9*d*., showing a balance in the hands of the Treasurer of £7 14*s*. 3*d*. No charge is made for admission to the exhibition; the area of the ground in which the show is held is too limited to afford hope of profit from admission charges. Membership consists of an annual subscription of 5*s*. and upwards, and from Mr. Dodwell's surplus growth of Carnations and Picotees subscribers to the Union are entitled to select whatever they may choose to the full value of their subscription.

National Auricula and Primula Society (Southern Section).—The schedule for the eleventh exhibition, to be held in the conservatory, Royal Horticultural Society, South Kensington, is now issued. Additional prizes are offered for Primulas, and the "Turner Memorial" prizes for six distinct show Auriculas, will be competed for. Rule X. has been expunged from the schedule and the following substituted:—"Seedlings, whether exhibited in collections or not, are eligible for certificates, due notice having been given in writing to the Secretary. Each plant must have the entry card correctly placed with it." The balance in favour of the Society is £27 1*s*. 4*d*.

National Carnation and Picotee Society (Southern Section).—The schedule of this Society is not materially altered. The same prizes are offered as heretofore. The "Turner Memorial" prizes for six distinct Carnations and six distinct Picotees (for amateurs who do not employ a gardener regularly) may be expected to bring a large number of competitors. Rule X. has been removed and the following is substituted:—"Seedlings, whether exhibited in collections or not, are eligible for certificates, due notice having been given in writing to the Secretary. Each plant or flowers must have the entry card carefully placed with them." The statement of accounts shows a balance due to the Treasurer of £2 15*s*. 1½*d*. This is due entirely to the large number of exhibitors in July last, the amount of £5 being expended by the judges in awarding extra prizes.

Primula imperialis.—A dried specimen of this magnificent plant, collected recently by Dr. Sydney Hickson in Java, was exhibited at the Linnean Society from the Royal Gardens, Kew. This species is a giant representative of the genus Primula, being over 3 feet in height. Plants of this Himalayan and Malayan species are now under cultivation at Kew, and form an interesting addition to this popular group of garden plants.

Phytobiological Observations.—Sir John Lubbock, Bart., read his second contribution thereon, at the Linnean Society's meeting of the 17th. Among other interesting data he stated that in Œnothera bistorta the seed leaves are linear, terminating in a large round expansion. This seemed puzzling, and could not be accounted for in the seed, nor did it appear to be of any advantage to the young plant. On watching the growth, however, and comparing it with that of other species, the explanation resolved itself as follows:—The cotyledons are at first round, but a growth takes place at the base of the cotyledon, which closely resembles that of the subsequent leaves, which are long and narrow, and peculiar to this species. In allied species the seed leaves consist of two parts—a terminal portion—the true or original cotyledon—and a subsequent growth resembling in each species the ultimate true leaves. Sir John referred to seed leaves in which the stalks were connate, instancing the case of Smyrmium, wherein the union seems clearly advantageous as giving additional strength. He described some other characters in various species of Plantago, Tilia,

Heliophila, Cardamine, &c., suggesting the causes to which they were due. Concerning the Tulip tree (Liriodendron), he had long been puzzled by the peculiar saddle-like shape of the leaves, and after many guesses that had proved untenable, he studied the structure of the bud and the manner in which the leaves were packed in it. He then showed by diagram that the peculiar mode in which the young leaves are arranged satisfactorily accounts for the well known and very remarkable form of the leaf of Liriodendron.

Rare Narcissi.—At the Linnean Society (February 17), Mr. George Maw drew attention to two Narcissi, both of which have been known under the name of cernuus. The white Daffodil, or Ajax, discovered by Mr. Buxton, at a height of 7000 feet, in a valley of the Spanish Pyrenees, is of interest because it is the only white Daffodil now known in a wild habitat, though forms, more or less distinct, viz., Moschatus, cernuus, albicans, and tortuosus, were known to the earlier botanists, probably as early as 1600. It is open to question whether the white Daffodil exhibited should be called cernuus or moschatus; though Linnæus' name of moschatus was applied to a white Daffodil from the Pyrenees. The name cernuus as applied to an Ajax or Daffodil was used by Roth, 1817; Schultes, 1831; and Haworth, 1835; but Salisbury in 1806 applied the name cernuus to N. triandrus, Linn., or a variety of it. Dr. Willkomm, in his *Illustrationes Floræ Hispanicæ*, has recently described a third species under the name of cernuus. The specimen exhibited was forwarded by the Rev. C. Wolley Dod, and was grown from bulbs collected by Dr. Henriques, of Coimbra, in the Sierra d'Estrella, Portugal. It is a very diminutive orange coloured species, with suddenly reflexed segments, barely half an inch in length, and with a corona nearly as long. It is allied to triandrus, but is evidently distinct from the yellow forms of that species, and may be identical with a plant collected by Blanco, in the province of Jaen, a single specimen of which exists in the British Museum herbarium.

Some Orchids in Flower at Messrs. J. Veitch & Sons' Nursery.—The plants in the large Cattleya-house are showing abundance of bloom-sheaths of the almost endless varieties of Cattleya Trianæ; and although nothing can be finer than the healthful appearance of the plant, the fogs of the last week or two had worked havoc with the blooms that were then open. In the house is a suspended specimen of Cymbidium Lowianum with seven long spikes of unopened flowers. In the department under Mr. Seden's painstaking control we were introduced to two novelties of merit, the result of hybridisation since 1880. Dendrobium euosmum leucopterum, with pure white petals and sepals, and purple throat; it is a very chaste variety, and the blooms measured 3 inches across the greatest width. The variety is the result of a cross between D. nobile and D. heterocarpum, which last is itself a hybrid from D. nobile and endocharis—D. splendidissimum, an improved form of the older D. splendidissimum, being much larger, and the colours better contrasted. Cypripediums are nearly fog-proof, so that many forms were observed, as C. vernixium, C. Boxalli, C. Stonei, C. Haynauldianum, and a very brightly coloured form of C. Sedeni. Of other species may be mentioned Odontoglossum Rossi majus, very fine in form; O. Oerstedti majus, a dwarf variety of pure white—a gem for pot or basket; Lælia alba, a very fine form; Lycaste Skinneri alba, the purple-flowered Odontoglossum Edwardi, and Oncidium Weltoni.

The Wemyss Bay Incident.—We learn from the *Glasgow Herald* of February 19 that shortly before 10 o'clock on February 18, H.M.S. *Ajax*, whilst at gun practice in Wemyss Bay, landed a shot from her 6-inch gun, and weighing about 120 lb., in the grounds of Ashgrove House, which is situated on the hill below Inellan Pier, and occupied by Mr. George W. Paton, sugar merchant, Greenock. Mrs. Paton and a servant, besides a jobbing plumber, were in the house at the time. Great destruction was done to the property, the house, ornamental grounds, and conservatory being greatly damaged, while the shot lies buried about 8 feet in the ground. Mrs. Paton fortunately escaped uninjured, but the plumber was somewhat seriously injured, and the girl got some damage to one of her hands. The greenhouse at Ashgrove, which was newly erected, was entirely wrecked, while the house itself was damaged to an extent which has rendered it uninhabitable. The shot, landing in the grounds, tore up the earth to a depth of 6 or 7 feet, and some large old trees were carried away. A quantity of earth and stones, estimated to weigh about 2 tons, was raised and landed on the roof of the house, which is bulged in. In the drawing-room a large stone came right through the window and passed out at the other side.

The Wilts Horticultural Society.—The annual general meeting of this Society was held in the Council-chamber, Salisbury, on the afternoon of the 17th inst., the Mayor, Mr. J. Griffin, presiding, when the Earl of Radnor (Lord-Lieutenant of Wilts) was re-elected as President of the Society, and the Earl of Pembroke as Vice-President, as also were the committee and Hon. Secretary (Mr. W. H. Williams), to whom a vote of thanks, proposed by the Mayor, and seconded by Mr. H. W. Ward, was accorded amid applause, for the time, energy and tact which he had so unsparingly devoted to the interest of the Society since the resuscitation from the ashes of the defunct "Wiltshire Arboricultural and Horticultural Society" a few years since. It was also decided to hold a summer show towards the middle of August, and a Chrysanthemum and fruit show early in November, the exact dates of holding the shows to be fixed at a later period. In the evening a dinner in connection with the Society was held in the banqueting-room of the Council-chamber, at which about 150 influential citizens and gardeners of the district were present.

The London Parks.—We understand that the following changes in the management of the parks have recently been made:—Mr. Gibson has been transferred from the superintendence of Regent's Park to that of Victoria Park; while Mr. Jordan, formerly superintendent of Victoria Park, has been appointed to Regent's Park. Greenwich Park, which was under the same management as Victoria Park, is now connected with Regent's Park, and is therefore still superintended by Mr. Jordan.

The Royal Horticultural Society of Southampton.—The annual general meeting of the members and subscribers was held at the Philharmonic Hall, Southampton, on Thursday, Feb. 24, "for the purpose of receiving the Council's report, election of officers, and other business."

Amherstia nobilis.—A specimen of this rare and most beautiful tree is now in flower at Didlington Hall, Norfolk, the seat of W. A. Tyssen Amherst, Esq., M.P.

Future Vegetable Trials at Chiswick.—It is proposed to make comparative trials of the following vegetables this season in the Royal Horticultural Society's Gardens, Chiswick, under the direction of the Fruit and Vegetable Committee, viz.:—Cabbages, Tomatos, Cauliflowers, Onions, Turnips, new varieties of Potatos and Peas. Persons desirous of contributing examples of any of these objects for the opinion of the committee are requested to forward the same, as early as may be possible, to the Superintendent, Royal Horticultural Society's Gardens, Chiswick.

Mr. Beale's Book on Tobacco.—The Queen has been graciously pleased to command Mr. Beale, of the firm of James Carter & Co., to dedicate his book on Messrs. Carter's experiment relating to Tobacco culture to Her Majesty.

Royal Tradesmen.—Messrs. Little & Ballantyne, Carlisle, who on July 25, 1884, were appointed by Royal warrant nurserymen and seedsmen to Her Majesty the Queen, have just received a similar warrant appointing them seed merchants and nurserymen to His Royal Highness the Prince of Wales, dated Marlborough House, February 1, 1887.

Publications Received.—*A Bee-Keeper's Experience in the East.* By Thomas B. Blow, F.L.S., Welwyn, Herts. (Published by the Author.)—*Annual Report on the Public Gardens and Plantations of Jamaica for* 1886. (Kingston, Jamaica: Government Printer, 79, Duke Street.)—*Report of the Botanist to the New York Agricultural Experiment Station, Geneva, New York.* By J. C. Arthur. (Elmira, New York, Advertiser Association.)—*Agricultural College of Michigan Bulletin: No.* 23, *Varieties of Apples for Market.—Underground* v. *Overhead Wires.* By D. Nicoll, Ass. Inst C.E., &c. (London: R. Booth, 12, Buckingham Street, Charing Cross, W.C.)—*The Garden Calendar.* By T. W. Saunders. (London: Hamilton, Adams & Co., Paternoster Row.)

PRIMULAS AT MESSRS. J. CARTER & CO.'S.

At their nursery at Forest Hill Messrs. J. Carter & Co. have at the present time a good display of varieties of the Chinese Primula. Looking at the plants as a whole the appearance was very pleasing the masses of colour caused by the grouping of the plants in large quantities of one variety having a very telling effect. One of the finest of the whites is called Holborn White, and bears large, many-flowered trusses of pure white flowers. A variety very much like this, but having trusses of lower stature, is Fern-leaf White, and to many people would perhaps seem more elegant—it did to us at all events. Fern-leaf Vermilion is rather an inappropriate name, as the colour is decidedly not vermilion, but a very rich crimson, and altogether prettier than a vermilion would be. It is very free-flowering, and lends a warmth to the surroundings. A curious variety with golden-yellow foliage has the name of Holborn Goldleaf. It has very delicately tinted lilac flowers, and the whole plant is only about 3 or 4 inches in height. It would be an acquisition but for one thing—its constitution is weak, and it will, therefore, probably not become so generally known as it should be.

A delicate and attractive colour is seen in Holborn Salmon, which is equalled among the darker shades by Holborn Magenta, both having colours as expressed by their names; the latter has a peculiarity in opening light and becoming dark in a short time. It is a delightful form. A variety lighter than the Magenta, but none the less pretty and pleasing, is Holborn Fern-leaf Red. The blooms are elegantly fringed, and have a few specks of white over the carmine ground.

Holborn Mauve is a remarkable plant as regards colour, which is at once pleasing yet unattractive, and as a curiosity the variety should certainly be added to collections. Its colour, however, varies from light to dark even on the same truss, and, therefore, has a fantastical look.

Primulas from New Zealand were shown to us. These are plants raised from seed sent from the antipodes. This is a varied and miscellaneous group. We cannot enter into a detailed notice of the plants, but it is certain that good Primulas are not absent from New Zealand.

Snowflake and Prince of Wales are two good semi-double forms, the former being white, and well adapted for cutting purposes; while the Prince of Wales is a double form of Holborn Salmon, and is equally valuable. In one house we saw a large quantity of the Holborn Blue, which, seen in such masses, made a telling impression.

All the plants are in excellent health, and heavily laden with fine large flowers, and we were informed that there were some 5000 plants in 48's.

LAW.

JACOB & CO. v. MANSFIELD.

This case occupied Mr. Justice Wills and a common jury the whole of Saturday, the 19th, and Monday, the 21st inst. The plaintiffs were the agents in London of Messrs. Schultz & Co., of Berlin, a firm of well known growers of Lilies and other bulbs and plants, and the defendant was Mr. Charles Basil Mansfield, of St. Clears, near Carmarthen, South Wales. The plaintiffs were represented by Mr. Murphy, Q.C., and Mr. Cross; the defendant by Mr. Philbrick, Q.C., and Mr. Reginald Brown. The action was brought to recover payment of £179 10s., being the balance of an account rendered for 150,000 crowns of Lily of the Valley at 35s. per 1000, guaranteed to be of first quality, and warranted to contain flowers in them. £90 had been paid on account by the defendant, but he subsequently refused to pay for the remainder, alleging that the same were not first quality roots, and that they did not contain flowers in accordance with the guarantee, alleging that they were very inferior and not properly ripened. The case of the plaintiffs was that they had fulfilled the terms of the guarantee, and that if the plants had been properly treated they would all, or the major part, have produced flowers. It was stated by counsel in opening the case that in the early part of the season, when these plants are forced for Christmas, there is greater risk than if they are forced later on, but seeing that the flowers fetch six times the price at Christmas it is not at all unreasonable that on account of their being forced, so to speak, at high pressure, there should be some losses, and that a smaller quantity of flowers would be obtained than if they were allowed to bloom according to Nature later on. The plaintiff's case further was that the whole of the bulbs supplied were three-year-old bulbs, and the fact of their containing flowers could by an experienced grower be detected by the feel. There was another way which was not usually adopted, but which was sometimes practised, viz., to slit one or two up, when, if there was a flower, it would be seen at once.

The plaintiff, M. Gustav Shultz, in his evidence stated that he had grown Lilies of the Valley for thirty years, and had personally superintended their growth for sale at the early Christmas markets; that he had himself examined the crowns sent to the defendant, and ascertained that they all had flowers in them, and were of first-class quality; and that if they had been properly forced they would in due course have produced flowers, although there would always be a certain amount of risk of loss, which would be greater the earlier in the season they were forced; that the object was to assist Nature, but it sometimes was dangerous to do so, especially in the very early forcing. In cross-examination he stated that he employed from thirty to fifty men, according to the season; that it was his habit, as far as possible, to examine every box that was sent from their establishment to this country, but that if he did not do it his head assistant would do so. The plants sent to the defendant were all grown in the neighbourhood of Berlin, in his own grounds; and he was in the habit of going round the fields and inspecting their growth from timeto time. A bundle of crowns of the Lily was here handed to the witness, who admitted that they were all first-class roots capable of blooming, and were three years old, that he could tell they had flowers in them by the touch. The plaintiff further admitted that he knew the defendant wanted these bulbs for the Christmas market. He stated that he did not force in cocoa fibre, but preferred soil. A large number of witnesses was called on both sides to speak to the proper mode to be adopted in forcing, but they seemed to agree that the proper temperature would be about 90° Fahr., although some preferred greater heat at the early part of the season.

Among the witnesses called for the plaintiff was Mr. Theodore Jannoch, of the Lily Nursery, Dersingham, King's Lynn, who stated that he had had very large experience in the growth of Lily of the Valley, and that his nursery was largely devoted to their growth; that he had supplied the Prince of Wales for some years, and that at the present time he was growing about a million in quantity; that although he had bought some roots from Berlin, he had never bought any from the plaintiff; that he rather held himself out as an English grower, and consequently was a rival in trade to him. He agreed with the other evidence, that it was possible to ascertain by the feel whether there were flowers in the bulb, and that this could have been discovered by the defendant the moment they came to hand without waiting until later on. He thought that 90° Fahr. was not enough for early work, and that he should prefer a temperature of 95° to 100° Fahr.; that it did not matter whether they were put in pots or in boxes, that those forced early required careful watching, but that those forced in January, February, and March required less watching. The treatment would depend to a great extent upon the condition of the bulbs; that he should expect 50 per cent. to do well in the latter part of December, but later on he would like 100 per cent., but did not often get it. He should not complain if three-fourths turned out bad which he put in in November or early in December to supply the Christmas market; but in the latter part of December he would expect half of them to do well.

Mr. James Henry Pounce, jun., of Hendon, in the course of his evidence, said he had forced 150,000 bulbs which came from Berlin this year, which had turned out very well indeed, that he did not buy with a warranty; that he was his own judge, and therefore did not want one; that although he had bought from the plaintiffs he had not done so for four or five years.

The defendant's case was as already stated, that the bulbs were immature, and incapable of producing flowers. After calling several witnesses in support of his case, the learned counsel summed up the evidence on behalf of their respective clients, and the Judge having summed up the case, the jury returned a verdict for the plaintiff for the full amount claimed, and his lordship thereupon gave judgment accordingly.

THE FLOWER GARDEN.

HARDY BEDDING AND EDGING PLANTS.

The planting of the groundwork of carpet beds with Antennaria tomentosa, Cerastium, Sedums, &c., should be taken in hand as soon as the weather will permit, and the ground in working order. Cerastium and other hardy edging should also be planted forthwith. Birds are very troublesome, pulling up Cerastium for nesting purposes; the best way to prevent this is to plant the edging in the manner of Box. Gentianella acaulis makes a splendid edging plant. Its congener verna is equally as effective, but it is more at home in the rockery.

Edgings of Daisies should also be planted as soon as possible; these are things which require often renewing, else they speedily deteriorate, and revert to the single form. It is better to remove the whole of the soil, and fill in with fresh soil; or a liberal quantity of manure may be given and well mixed with the soil when it is dug. The Daisy plants can be pulled to pieces, and planted in single, double, or treble lines, about 3 inches apart each way. See that the roots are put in the whole length, and made firm in position.

Polyanthuses, Primroses, and hosts of other hardy subjects may be similarly dealt with.

Herbaceous Beds and Borders.

These should receive an overhaul if the subjects are not thriving. It may be necessary to lift the whole of the plants, and apply manure or fresh soil, trenching the beds, and replanting. This is a matter which requires much attention, and an acquaintance with the numerous subjects employed. The taller growers must, as a rule to be generally adopted, be planted at the points farthest from the point of observation, and the colours of the flowers well assorted. The time of blooming of the various plants must be observed, in order that patches bare of flowers may not be witnessed. Any plants which are becoming too large should be broken up into sizeable pieces and replanted, keeping them well down in the soil. In planting herbaceous borders, it is better to group things rather than to scatter them indiscriminately. *W. M. Baillie, Luton Hoo Gardens.*

FRUITS UNDER GLASS.

PINE-APPLES.

Plants carrying fruits should have a night temperature of from 70° to 75°, according to the weather; and 5° higher by day with fire-heat. Ventilate at 80°, and let the temperature run up to 90° with sun-heat, giving abundant atmospheric moisture at closing time, taking care, however, to avoid wetting the crowns while damping the materials of the hotbed, &c., and lower parts of the foliage, thereby causing them to become unduly large.

Succession Fruiters.

If the plants intended to supply fruit during the summer have been treated during the interval in accordance with the instructions given for January 1, p. 22, most of them will now be showing fruit These should, from this date until the fruit approaches maturity, be kept rather moist than dry at the roots, giving liberal supplies of Beeson's or ordinary liquid manure at a temperature of 85° when thought to be necessary. Avoid syringing the plants overhead when the fruits are in flower, as the lodgment of water in the flowers might prevent some of the pips from swelling, to the disfiguration of the fruit. Maintain a bottom-heat of from 90°—95°; a few degrees higher will not do any harm.

Next Autumn and Winter Fruiters.

These plants should have a night temperature of about 65°—70° by day, with fire-heat, and 10° or 15° higher with sun-heat. Admit air when the temperature reaches 80°, and shut it off at an early period of the afternoon, before the temperature has fallen below this point, damping the plunging material, paths, and the plants slightly overhead at the same time. Five degrees less of heat will answer the requirements of young plants. *H. W. Ward, Longford Castle.*

FLORISTS' FLOWERS.

THE GLADIOLUS.

The weather during the last week has been most favourable for planting out the first batch of bulbs of this fine autumn-flowering plant. I am confident from past experience that no harm will come to the bulbs, however small they may be, if planted out now, with the ground in a dry state. It is stated in the current number of a contemporary that the hybrids of G. gandavensis succeed admirably at Cambridge, even if the bulbs are not lifted until December. It struck me at once that this must be a very dry district; and on turning to *British Rainfall for* 1878, I find it is so. That happened to be a wet season, but the average rainfall from six observers was only 22·34 inches in that district. The average of five observers at Hastings for that year was 35·83 inches. At Croydon the average of seven observers was 28·94 inches. Our own rainfall at Loxford Hall for that year was 29·43 inches. Greenwich Observatory was much the same as our own, 28·98 inches—not half an inch less. Mr. J. Symons at Camden Square measured 34·08 inches. At the Kew Observatory, 29·95 inches were recorded. These are all given in the same year. In

dealing with bulbs of the nature of the Gladiolus, it is necessary not only to take into account the rainfall of the district where they are grown, but also the nature of the soil, and the position of the garden. I have always advised early planting, and lifting the bulbs about the end of October in fine weather.

The Pentstemon.

The present season has been a very trying one for seedlings planted out in the open ground, unless they happened to be covered with snow, when they would be safe. I have often advised treating them in the same way as Calceolarias of the shrubby type. They should be planted as cuttings in hand-lights or cold frames. These cuttings, which were put in about the middle of October, are nicely rooted; they should be planted out now under glass lights, about 3 or 4 inches asunder, in light soil, to be planted out permanently in April. The garden varieties of this genus make a brave show in the flower garden as late as October and November if the weather is favourable; that is, if the seed-pods are picked off to prevent exhaustion. If the pods are allowed to ripen the plants will cease flowering. They ought to be planted in rich, deep, well-worked soil, to ensure a good development of plant and flower. Copious supplies of water in hot, dry weather are needful. *J. Douglas.*

NARCISSUS PSEUDO-NARCISSUS, var. JOHNSTONI (Tait).

This distinct variety of the common Daffodil was first known from fresh and partially dried specimens which reached England during the spring of 1886 from Alfred W. Tait, Esq., of Oporto. It is No. 11 of Mr. Tait's pamphlet called *Notes on the Narcissi of Portugal*, published at Oporto for private distribution in May, 1886, wherein it is thus mentioned:—

"Ajax variety Johnstoni, grows near Oporto, flowering 1st to 21st March, in sandy loam near the banks of a stream; altitude about 300 feet. I found this beautiful variety on March 5, 1886; it was fairly abundant in this locality, but its range is very limited, and the meadows in which it grows are rapidly being ploughed up, so it may soon disappear from this locality; however I have received a specimen from Pavoa de Lanhozo, so, possibly, we may discover a new habitat."

Mr. Tait's original description is as follows:—

"Height 14 inches. Bulb ovate, dark brown, and large. Leaves generally two, striated on the back with several ribs, colour sub-glaucous, erect. Scape hollow and sharply two-edged, striated. Flower horizontal, perianth segments equal in length to corona, 1 inch long, 3-10ths of an inch wide, lanceolated, acute. Corona rather conical, slightly angular, irregularly and slightly crenated and lobed, the lobes not expanded, as in N. Pseudo-Narcissus. Length of corona 1 inch, length of stamens 1 and 2-10ths of an inch, length of style 1½ inch. Stigma 3-lobed. Colour of corona and perianth pale sulphur, slightly tinged with green on back of perianth (very similar in colour to Corbularia citrina)."

I first became acquainted with the plant from specimens Mr. Wolley Dod and Mr. Barr were good enough to send me during the spring of 1886, and in the September following Mr. Tait sent me direct from Oporto some dry bulbs of this plant which somewhat resembled those of the common Daffodil, but of the size of Walnuts. They were at once potted in sandy loam, and placed on a shelf in a sunny greenhouse, where two of them flowered February 4, 1887. The leaves were longer than the flower-scape, two to three to a bulb, and about 14 inches in height. The flower-scapes were 9—12 inches high, each bearing a nodding flower. The distinctive peculiarity of the flower consists in its long and slender tube, which is about three-quarters of an inch in length, and clarionet-shaped, nearly as in N. incomparabilis, instead of being broadly obconical, as is that of the common Daffodil. The whole flower, including the ovary, is about 2 inches in length. The stamens are in one series, with straight filaments, which spring from about the middle of the slender flower-tube. Another peculiarity about this variety is the manner in which the spathe or flower-sheath enshrouds the ovary and slender tube, as shown in the accompanying sketch (fig. 60).

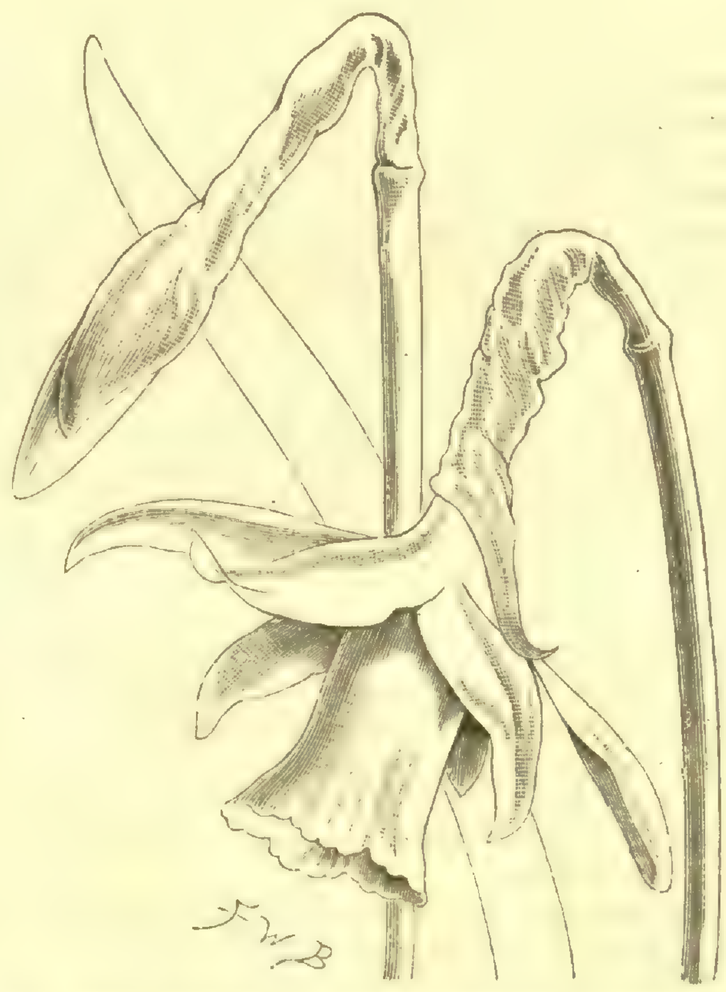

Fig. 60.—Narcissus Johnstoni: flowers yellow.

Narcissus growers are much indebted to Mr. Tait for his generous liberality in the matter of dry bulbs and specimens, and he has certainly the merit of discovering this distinct Daffodil, as well as of having introduced the quaint species, N. cyclamineus, to our gardens. *F. W. Burbidge, Trinity College Botanical Gardens, Dublin.*

FERN WALL TILE.

Our illustration (fig. 61) is a representation of the Fern wall tile recently invented by Messrs. A. Booty & Co., High Harrogate, Yorks. The inventors claim for it that the tile may be used either for inside or outside walls. It will certainly be useful for the interiors of many houses where there is a bare wall, as the tiles, which are made in short lengths, may be placed side by side and finished off with a terminal piece when required. Smaller complete tiles are also made, as shown in the upper part of our illustration. The ledges or pockets made by fixing the tiles can be filled with soil and have Ferns or plants grown therein; thus enlivening many a dull corner or bare wall, outside or in. The fixing is done by nails or screws, which the maker supplies with the tiles.

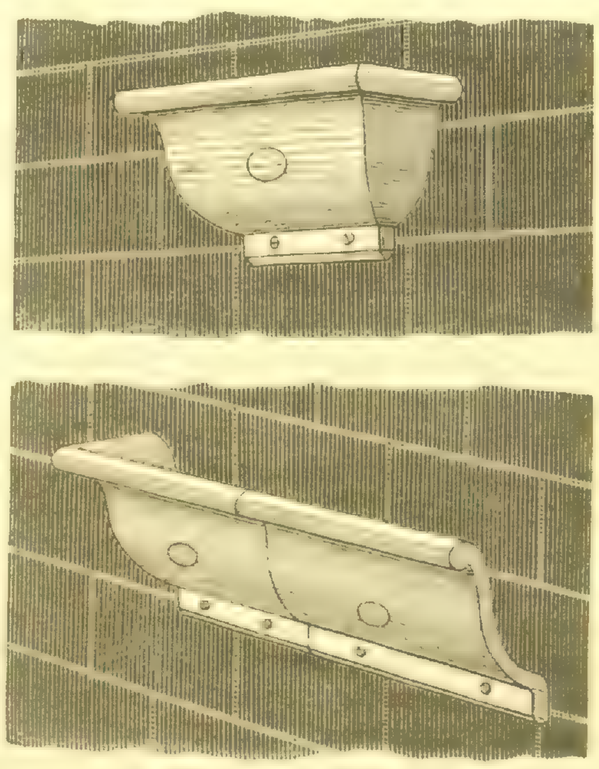

Fig. 61.—Fern-tile.

CORDYCEPS TAYLORI.

A Fungus Parasitic upon an Australian Caterpillar.

A few weeks ago a valued correspondent of the *Gardeners' Chronicle*, Baron von Mueller, sent to Dr. Masters from Victoria the rare and remarkable fungus illustrated in fig. 62. As will be seen from the illustration, the fungus grows from the neck of a caterpillar which has buried itself in the ground. The caterpillar is not invariably vertical as in the Victoria specimen, it is sometimes horizontal, or it may be at any angle in the ground. As in the instance before us, the fungus usually grows from the back of the second joint from the head end of the victim. When the parasite reaches the surface of the ground, marked "gd. l." (ground line) in illustration, it branches in an elaborate and ornamental manner after the fashion of stags' antlers, and there it produces its microscopic fruit or spores.

The Rev. M. J. Berkeley first described Cordyceps Taylori in the *London Journal of Botany*, vol. ii., 1843, p. 205. He called the fungus by the name then in vogue, viz., Sphæria. Mr. Berkeley's example came from the banks of the Murrumbidgee, Australia, growing from the head of an "extremely large caterpillar." "About six stems grow from the same point," says Mr. Berkeley,—in the example now engraved there are only three—"forming a compact cylindrical mass 2½ inches long and ¾ of an inch thick." The fungus now illustrated in the *Gardeners' Chronicle* appears to be twice the size of the example described by Mr. Berkeley. In the original description Mr. Berkeley next gives the form and colour of the fungus, and then says, "The only specimen I have seen was not mature," and that "incipient perithecia" (*i.e.*, spore pouches) only were evident towards the tops of the branches. "The following notes," says Mr. Berkeley, "are from a letter of Dr. (now Sir) Joseph D. Hooker; the information, he states, was received from the Rev. Mr. Taylor, of Waimate:—'This caterpillar fungus was picked up on the banks of the Murrumbidgee River, 10 miles from the township of Yap (in New Holland) in a rich, thick alluvial soil, with many others of the same kinds. When fresh it was 8 inches long, and 3 inches of the fungus from the nape of the neck, were buried underground, on the surface of which is the oval or circular flower-like bunch of branches, of a brown velvety appearance when fresh. The caterpillar has a great resemblance to the green Wattle caterpillar, which produces a large brown moth. The discoverer, Mr. John Allan, the only person who has heard of it, found many empty holes near, as if the chrysalis had been hatched, and he saw many empty shells of these grubs scattered about the same place, and at night the brown moths were so numerous as to be quite troublesome. The body of the insect was solid and pithy; the outer skin attached to the substance of the centre which has no roots in it; and moreover the pith is of the same substance as the stem, which is as thick, if not thicker, than the body of the caterpillar. Both the pith and the stem when burnt have a strong animal smell. Mr. Allan saw nearly thirty about March, 1837.'"

Baron von Mueller's example of Cordyceps Taylori was unfortunately not perfectly mature, but it was sufficiently mature to enable me to give an illustration (possibly for the first time) of the microscopic fruit, which is perhaps the most wonderful part of the fungus.

The caterpillar shown at the base of fig. 62, is really a mere skin full of hard fungus spawn by the time the fungus is fully grown. The fungus, by its

spores, attacks the living caterpillar whilst it is burrowing in the ground. The spores usually attack the joint at the back of the neck, as this is the easiest and most vulnerable point for assault. The caterpillar, whilst burying itself (that it may hibernate in the ground as a chrysalis before it becomes a moth), works its head backwards and forwards in its efforts to get its body beneath the ground surface. Whilst thus burrowing and working its head to and fro, the joint at the back of its neck is constantly laid open, and the skin distended. Into this weak distended place the spore of the fungus (like a soldier darting into the open gate of a citadel) makes its way and there germinates.

On germination the mycelium or spawn from the spore feeds upon the juices of the caterpillar, and at the same time replaces the entire interior substance of the caterpillar with fungus spawn. As the caterpillar becomes gradually transformed to one compact fungoid mass, enclosed by a caterpillar's skin, the perfect fungus emerges from the back of the now dead animal's neck, *i.e.*, at the injured point where the attack was first made by the spore or spores. The fungus now grows till it reaches the surface of the ground, "GD. L" (ground line) in illustration. When it emerges from the ground it grows after the fashion of stags' antlers, as shown, and on the surface of these antler-like growths the spores are borne in minute closed ovoid cases, pouches, or perithecia.

On looking carefully at the illustration it will be seen that the antler-like growths of the fungus have a minutely granular or spotted appearance. If a few of these granules are magnified thirty diameters they will be seen as at A. These granules are really perithecia, or irregularly ovoid growths packed full of small long transparent bladders (asci), which bladders in turn contain the spores. The perithecia burst or break with the slightest touch, and the microscopic bladders filled with spores pour out through the cracks from the apex or side, as shown in the illustration.

It is now with the aid of the highest powers of the microscope that we really see the truly wonderful nature of the fungus, for if we take, say, a couple of these minute bladders and enlarge them 400 diameters they will be seen as at B. The left-hand bladder contains eight attenuated hair-like spores, so fine and thin that it is almost impossible to express their slenderness in numerals. With a touch upon the cover glass of the microscope slide each bladder opens at the top, and the eight highly attenuated hairs quickly sail out, as at C. It will not be very difficult to follow some of these almost inconceivably fine hair-like threads (really compound spores) across the field of the microscope, and when one is at last seen to be perfectly quiescent an extremely high power of the microscope may be applied, and if the thread is magnified to 1000 diameters it will be seen as at D. The attenuated object before us is seen now to be something more than a simple hair or thread, inconceivably fine as it really is, for on close examination it will be found full of the most minute joints, as illustrated. When the thread is ripe it breaks at every joint into innumerable little fragments, and each almost incomprehensibly small fragment is a reproductive body or spore. In a state of Nature, then, the bladders are first naturally expelled from the minute pouches investing the outside of the antler-like growths, each bladder then sails about in the air, opens at the top, and discharges in the atmosphere eight of the attenuated threads just described. The threads in turn now break up into definite sized fragments of microscopic living dust, and these minute grains of transparent living material fall to the ground in order to grow upon and destroy living Australian caterpillars whilst in the act of becoming chrysalids.

Such minute objects as these spores obviously could hardly penetrate the armour plates of any caterpillar, so they force an entry behind and in the neck joint. It is curious that so large a caterpillar as the one here described should be destroyed by the germination of a fungus-spore so extremely minute.

It only remains to say that the antler-like parts of the fungus growth are solid, and cinereous-black in colour.

Several species of Cordyceps grow in this country,

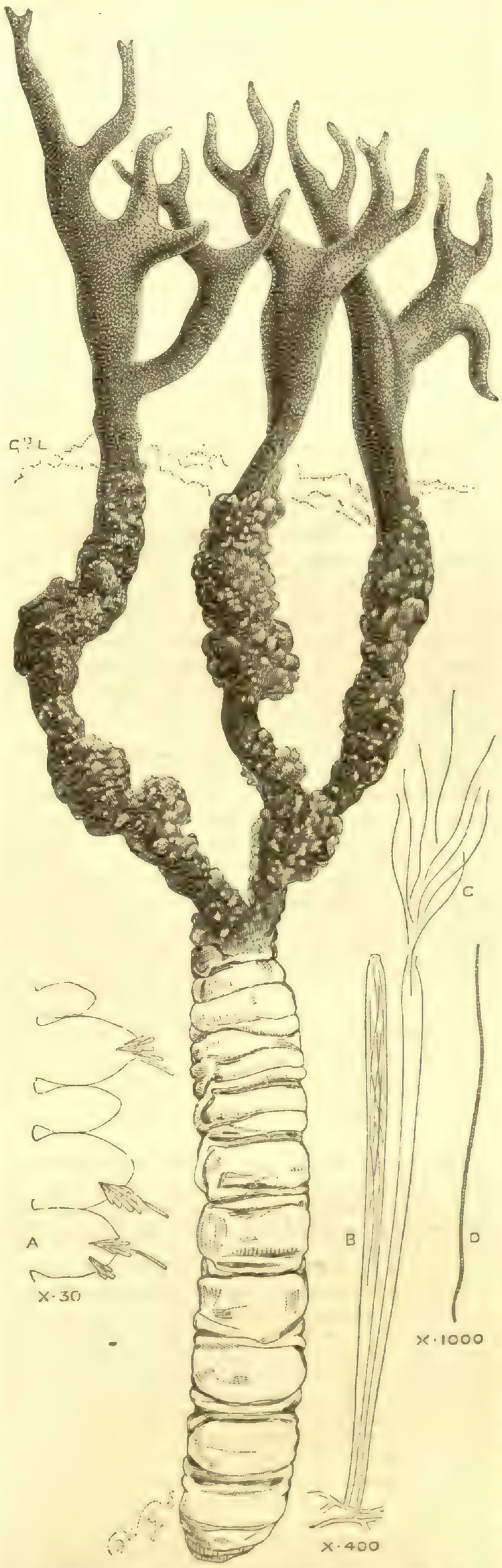

Fig. 62.—CORDYCEPS TAYLORI, A FUNGUS PARASITIC ON CATERPILLARS.

but perhaps none so remarkable as Cordyceps Robertsii. Cordyceps capitata was illustrated and described in the *Gardeners' Chronicle* for February 8, 1873, and C. (Sphæria) sinensis was illustrated in the *Gardeners' Chronicle* for March 6, 1875; this latter is eaten and highly esteemed by the Chinese as stuffing for turkeys. It is sold in neat bundles in Chinese markets.

The famous vegetable caterpillar, or Cordyceps of New Zealand, is C. Robertsii. It is a simple unbranched club, and is parasitic upon the caterpillar of Hepialus virescens. A smaller and branched Cordyceps, also found in New Zealand, is C. Sinclairii; it is parasitic on the larva of an orthopterous insect.

The example of Cordyceps Taylori here illustrated has been deposited in the Department of Botany, British Museum, as the national collection at South Kensington has till now had no example. My thanks are due to Mr. George Murray of the British Museum for obligingly giving me the reference to, and transcript from, Mr. Berkeley's original description in the *London Journal of Botany*. *Worthington G. Smith, Dunstable.*

Home Correspondence.

THE FLORA OF ICELAND.—I have read with pleasure the capital articles upon this subject which appeared in the *Gardeners' Chronicle* of December 18 and 25, and also in your last issue, and desire to add a word or two respecting my own observations in Eastern Iceland in the autumn of 1884. I have passed through the so-called "forest" of Hallormstadr several times almost from beginning to end, and am decidedly of the opinion that many of the trees attain a height of fully 20 feet, but many of them are certainly somewhat thin in proportion. Once, if not twice, I have met with Mountain Ash bushes (or small trees) in the neighbourhood of the coast growing in fissures of rock; and in the head of the Lagarfljot, 20 miles or so north-east of Snæfell, we discovered a portion of a large tree trunk in the river bed, some 10 feet in length, so far as memory serves me, and of considerable thickness. To what species this belonged I cannot pretend to say, so blackened and hardened with age was it, and from being imbedded nobody knows how long in the rich alluvial deposit by the river side. In the marshes on the Fljotsdalsheidi to the north-west of the Lagarfljot one of the commonest plants was Saxifraga hirculus, and in full flower at the time of our visit (September). This appeared to be a larger flowered form than those found in Great Britain, and more highly coloured. Dryas octopetala or Rüpa Lœf is abundant everywhere, and forms in hard winters almost the sole food of the ptarmigan (Lagopus rupestris, Gmel.), hence the Icelandic name. Mr. Wight's assertion (p. 346), that the use of Dryas octopetala leaves for tea making is now obsolete, is not perfectly correct if meant to include the whole of Iceland, for when at Hallormstadr we were offered some tea which had been prepared from the leaves of various kinds of plants growing in the vicinity, and among them we understood that Dryas played an important part. In the same district I found that the fruit of Empetrum nigrum was considered quite a delicacy, and would, I believe, be pretty extensively used but for the labour of picking, and the comparative uncertainty of the crops. *J. Backhouse, jun., York.*

ALTON TOWERS.—By "H. E.'s" description of Alton Towers, published on the 19th instant, one is vividly reminded of the days when Mr. London in his *Gardeners' Magazine* gave the always interesting narrative of his tours among English and other gardens. These were looked forward to with eagerness, and generally comprised sensible and useful comments, which were sometimes quite piquant, and on other occasions decidedly eccentric. For example, describing one of his visits to Chatsworth, he put forth the highly original and absurd suggestion that, instead of establishing a reservoir or lake, on the hills behind the palace, for collecting the water from the moors, and supplying the great cascades and fountains, it would be easier to direct the necessary contributions from the river Derwent, at a sufficiently higher point, and carry it over the hills to an adequate receptacle, oblivious of the fact that this was physically impossible, and that the Duke of Devonshire did not own the property from which this resource was to be drawn, or the intermediate land which it would require to pass over, and that it would have involved lengthened and extraordinary aqueducts, disturbing the whole face of the country, and entailing a prodigious outlay. As to Alton Towers, however, there can be no doubt that Mr. Loudon was right, and that, as he stated, the operations of the active Earl of that day

spoiled a beautiful valley. "H. E.'s" hint that the liberal planting of trees which accompanied the transformation has greatly mitigated and condoned the error, is perfectly admissible. He does not mention the series of conservatories, not connected with the mansion, which, if I recollect aright, traversed the valley, and had gilded domes of the most pronounced type. It is more than forty years since I visited Alton Towers. I was staying for a fortnight with Mr. Paxton, at Chatsworth, and took the opportunity of going to notable places in Derbyshire and its vicinity. During a trip to Dove Dale and Ilam Hall, I passed on to Wootton and Alton Towers, at which latter place I had the advantage of being chaperoned by Mr. Forsyth, then in his prime. I well remember seeing the interesting old blind harper, for whom the "harper's cottage" was built by the Earl, and hearing him play for me, at Mr. Forsyth's request, "Ye banks and braes o' bonny Doon" in the hall of the mansion. To the best of my memory, this hall was about 40 feet square, and carried up into a lofty tower lined with stone; and of course it was very resonant, and singularly fitted for giving full effect to a performance on the harp. Mr. Forsyth told me a very pretty story as to the history of this blind harper, which may be worth repeating. His lordship chanced to be travelling in Wales, where he accidentally met with the harper, and being impressed with his playing, and possibly attracted by his *suave* manner, he offered him an appointment as harpist at Alton Towers. It was a surprise to him to find this offer promptly declined. After further inquiries, however, he learned that the obstacle to acceptance was that the harpist had an aged mother entirely dependent on his professional skill, and that he was resolved never to leave her. Naturally, the generous Earl at once proposed to overcome this difficulty by taking both mother and son under his protection, and building a cottage specially in his grounds for their residence; and this proffer, it is hardly necessary to add, was gratefully responded to, and the harper became the cherished pensioner of the Earl, and the occupant of the "harper's cottage." Mr. Forsyth has gone to "the great majority," or he could have confirmed this tale. My remembrance of it, however, is perfectly clear, and it is a pleasant reminder of the relations which sometimes exist between members of the aristocracy and those whom they incline to favour. *Edward Kemp, Birkenhead Park.*

CARNATIONS AND AURICULAS.—I read at p. 248 that Carnations, Picotees, and Pinks in pots should have "a surface-dressing of well dried cow-dung, rubbed through a 4-inch riddle, mixed with double its bulk of good loam," and that "Auriculas should be similarly treated." I must say that I cannot understand such instructions as regards Carnations, Picotees, and Pinks. All the principal trade and amateur growers have now their plants in small pots. They begin to repot them into the pots in which they are to flower in the last week of February, and the work may be performed any time in March. May I ask Mr. Baillie what class of plants he recommends growers to surface-dress now? It used to be the custom to surface-dress Auriculas in February, but the best growers have discontinued the practice; I have done so for two seasons, the present one being the third, and I shall never do it again. Mr. Horner wrote me last year to say that he also had not surface-dressed his Auriculas for two years. *J. Douglas.*

THE LEGEND OF NARCISSUS.—Many readers of the *Gardeners' Chronicle* are no doubt acquainted with the classical Greek tale of Narcissus, or Narkissos as the name of the inferior deity is now usually written. It is that one Narkissos, a son of a river god, languished by a clear fountain, gazing upon the reflection of his own face, with which he was in love, till he pined away. For this the gods changed what was left of the pining youth into the familiar flower which now bears his name. In the last number of the *Journal of the Anthropological Institute* it is stated that it was an old Greek and Indian maxim not to look at one's reflection in water. A similar maxim, it is said, is found among Zulus and Melanesians, with the explanation that a beast lives in water able to steal the shadow of any man who happens to look in. The man who has had his shadow stolen has no desire to go away from the water, but now wishes to enter the pool; on entering the water the beast who has stolen the shadow now eats up the body of the man. Zulus will not lean over and look into a dark pool for fear of losing their reflection. The Melanesians believe that a spirit in the water by taking the reflection, at the same time takes the life of any gazer into a dark pool. The story of Narkissos, it seems, originated in similar ideas, the youth gazed in water and lost his soul: his soul was drawn under water by a water-spirit, and he was left in a soulless state to pine or perish. The belief, it is said, must have been Indo-European, being found in both Greece and India. The story of Hylas, who was carried off by nymphs who admired him whilst he was accompanying Herakles from the Argonaut's ship to cut a new oar in a wood, seems to have been founded on a similar myth. The following lines, illustrative of an English superstition of a like class with the above, are quoted in the *Anthropological Review*, by J. G. Frazer:—

"Alas, the moon should ever beam
To show what man should never see!
I saw a maiden on a stream,
And fair was she!

"I stay'd to watch, a little space,
Her parted lips if she would sing;
The waters closed above her face
With many a ring.

"I know my life will fade away,
I know that I must vainly pine,
For I am made of mortal clay,
But she's divine!" *W. G. S.*

LILIUM AURATUM.—As illustrating the very large importations of Lilium auratum from Japan, it may be stated that, commencing in October last one of our leading firms, will this season import some 5000 cases, the numbers averaging from fifty to a hundred per case, and some of the bulbs are remarkably fine, several being nearly 1 lb. in weight, and measuring 15 to 16 inches in circumference. On the whole the roots reach this country in an excellent state of preservation. Occasionally almost the whole of the contents of a case will be found decayed, as if a rot had set in on one bulb and spread to the others packed with it. *R. D.*

DEUTZIA GRACILIS.—At the present time Mr. Hudson, Gunnersbury House, Acton, has some splendid bushes in flower of this truly useful forced shrub. The plants have not received a shift for the past ten years, yet they do not show the least signs of exhaustion. A word or two on the treatment which has produced such satisfactory results at a comparatively flowerless period of the year may not be out of place here. The plants are treated in the same manner as Indian Azaleas after flowering; the flower-spikes are removed, and the plants placed in a vinery, where they receive frequent syringings, and a plentiful supply of water at the roots. When the growths are completed they are gradually inured to the open air and a sunny position, the pots being plunged in a bed of coal ashes. Mr. Hudson truly remarks, that of all forced shrubs none pays better for proper attention than Deutzia gracilis. *B.*

THE BULB MITE, ITS CAUSE AND CURE.—We feel that on this matter we are about to enter on debateable ground, but as we have experienced the results of having bloom where no bloom could be had before, we are perfectly satisfied, and now your answer to "Wicklow" (see p. 223) has induced us to give your readers an idea of the cause and cure of this very common plague. First, the cause, we think, is due to a decay in the roots of the bulbs caused by bad treatment either in over-forcing or in placing the pots in over-extremes of heat and cold, so as to induce the bulbs to bloom, or, as a grower said, either to kill or cure—the mite in this case being Nature's scavenger to eat up and utilise the decayed matter. For this opinion we are not particular whether it is accepted or rejected; but for the second part, viz., the cure, we enter upon certain ground, as we claim to have cured, and our plants are now open to inspection by any one interested in the matter. At potting time (February, 1886) we determined to make a last trial of our Eucharis bulbs, so, taking two bulbs from the pots, we subjected a brownish dust around the base of the bulbs to a powerful microscope kindly put at our service by a friend, and sure enough the mite was easily discovered. With this information to guide us we turned out the whole of the bulbs and sorted them into sizes, and before potting we scraped and cleaned the base of the bulbs very carefully, and dusted them over with powdered lime. After potting in the usual compost we plunged the pots in tan bark with a brisk bottom-heat, and the house at stove temperature, with plenty of moisture. Here, after starting regularly into foliage, they were occasionally watered with lime-water, and after full development we removed them to an intermediate-house for a resting time, to mature. We then brought them back to the same stove-heat, and were rewarded by a fair supply of bloom for the first time during several years we have had them in stock. The Eucharis pots are now (February, 1887) in bottom-heat, not repotted this season, are making aclean healthy growth; some of the bulbs which did not bloom at first are now in bloom, and we are hopeful to have a fine healthy lot of Eucharis in a very short time. We still keep watering about once a week with lime-water, having great faith in this as a preventive of animal life in the soil. After this we would advise "Wicklow," or any other grower, to go and do likewise. *Clark Brothers, Nurserymen, Carlisle.*

"MILDEW" ON HAKLUYT SOCIETY'S PAPER.—The "sort of mildew, like a very pretty black lichen," mentioned by Jean van Volxem on p. 256, is probably the well known black oxide, or dendritic spot, only too familiar to paper makers, caused by the presence of manganese or some other material used in paper making. *W. G. S.*

DETERIORATION OF THE POTATO.—The bitter wail of Mr. W. Foord in the *Gardeners' Chronicle* at p. 220, is perfectly alarming, and what makes it so is its truthfulness, so far as the Potatos of commerce are concerned; and if growers and merchants will still persist in their carelessness, it will no doubt hasten their extinction as a commercial commodity. It is almost a universal cry that the Potatos you buy are not fit to eat. It was this same kind of carelessness that was the main cause of the disease at first, and if it persisted in it will be productive of the same results in future. I am pleased that Mr. Foord confined his remarks principally to the Potatos of commerce, because among gardeners and cottagers, and in all cases where the Potato is properly cared for, it is as good, and in many case better than ever. It was this carefulness that produced the splendid samples he speaks of twenty or thirty years ago, and it is this same carefulness persisted in that has maintained it in all its excellence to the present time. Let any one who doubts these remarks obtain the gift of a small quantity from an intelligent, careful gardener or cottager, and compare them with those bought at the shops, and he will not fail to be convinced. Mr. Foord mentions a number of sorts, but I contend that it is not so much the sorts as the way in which they are treated. There are plenty of sorts now, if properly treated and properly cooked, that will produce the proverbial ball of flour. The Potato is about the tenderest and most susceptible vegetable we have, and needs as much care and attention as our choicest fruits to keep it in health and produce it in a fit state for the table of the prince and the peasant, and render it a staple article of food for all classes. If our present race of Potatos is to be kept in health and saved from the extinction which Mr. Foord prophecies the following rules should be strictly observed:—1. Proper sized sets, which need no cutting, should be selected at digging time, and should not be allowed to exhaust themselves by sprouting prematurely; to this end the sets should never be covered with warm materials 2. The warmest and driest soils should be chosen for them. Cold wet soil and shady places should in all cases be avoided, also avoid planting them too close together. 3. Highly stimulating manures, either natural or artificial, should never be used; good sound stable manure or leaf-mould in moderate quantity is the best. 4. Avoid late planting. March and April are the best months, as all Potatos should be out of the ground as soon as fully ripe, and none later than the end of September. 5. Dig them carefully without bruising them with the prong. Handle them as carefully as Peaches—put them together, not throw them together; store them on a dry floor, or in boxes or casks, not in stacks out-of-doors, if it can be avoided, as the drier they are kept the better; cover from the air with some dry light material; the cooler the store the better, but in no case should it go down to the freezing-point; rub off the spears carefully as occasion requires; pack for transit in boxes or casks or stout baskets—never in sacks, for fear of bruising them. If the above rules are observed, and the cook is up to her business, you will always have a good Potato placed on your table. Any one acquainted with the carelessness of many of our large growers, and seeing the way they are knocked about and exposed to the air, will not be surprised that the Potatos of com-

merce, as a rule, are only fit to feed the pigs. And if it is double trouble to produce them in good condition they will fetch double price in the markets; and, moreover, it will preserve them for the benefit of future generations. *C. Dimmick.*

IRELAND.

THE FIRST SIGNS OF SPRING.

I send you, from my garden at Temple Hill, near Cork, a bouquet of spring flowers. *W. B. H., Cork.* [The bouquet consisted of Saxifraga cordifolia; Erica mediterranea, very deep in colour; the Ard-Righ Daffodil, from the open as well as from under glass; Narcissus minor (Irish nanus), N. minimus, N. pallidus præcox; the Riverston Hellebore, with flat segments and pink-tipped styles; Snowdrops of many varieties, including plicatus and Elwesii (?); and Anemone. A gay bunch, truly! Ed.].

We are having lovely mild spring-like weather here now, but, as a rule, things generally are later than usual.

Mr. Gumbleton just tells me of a hybrid having been obtained between Corbularia conspicua and the Tenby Daffodil.

Lord Castletown has just returned from Persia, whence he has brought some curious plants—Narcissus Tazetta, and several Iris, &c. Rose cuttings he brought (in his portmanteau) stuck into Potatos; and Lady Castletown, who is a great gardener, is sanguine they will grow. *B.*

Obituary.

MADAME LE GRELLE DHANIS. — We greatly regret to have to record the decease of this lady on the 17th inst., at the age of sixty-nine. The deceased lady will have been known to many of our readers as an enlightened promoter of horticulture, and the splendid specimens exhibited from her gardens at Berchem, near Antwerp, will be in the memory of all visitors to the great Belgian shows, and specially those in the habit of attending the Quinquennials.

THE WEATHER.

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING MARCH 5. (AVERAGE OF THIRTY-THREE YEARS.)

February 27	... ... 40°.4	March 3	... ... 40°.8
„ 28	... ... 40°.5	„ 4	... ... 41°.0
March 1	... ... 40°.6	„ 5	... ... 41°.1
„ 2	... ... 40°.7	Mean for the week	... 40°.7

THE PAST WEEK.

The following summary record of the weather for the week ending February 21, is furnished from the Meteorological Office:—

"The *weather* has been less settled generally than that reported last week, the sky being cloudy or overcast, with occasional slight rain.

"The *temperature* has been 1° or 2° above the mean in Scotland, and over the greater part of Ireland, but over England and the 'Channel Islands' it has varied from 1° to 5° below. The highest of the maxima, which were registered at most stations either on the 18th or 21st, ranged from 48° in 'England, N.W.,' to 55° in 'England, S.W.,' and 'Ireland, S.' The lowest of the minima were generally recorded on the 17th, when readings ranged from 16° in 'England, E.,' 18° in the 'Midland Counties,' and 19° in 'England, S.W.,' to 29° in 'Scotland, E.,' and 32° in the 'Channel Islands.'

"The *rainfall* has been less than the mean in all districts.

"*Bright sunshine* shows a very general decrease, the percentages of the possible amount of duration ranging from 13 in 'Scotland, W.,' to 31 in the 'Channel Islands,' and to 32 in 'England, E.'"

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 42° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature.		Accumulated.		
	Above or below the Mean for the week ending Feb. 21.	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 4, 1887.	Below 42° difference from Mean since Jan. 4, 1887.
Principal Wheat-producing Districts.		Day-deg.	Day-deg.	Day-deg.	Day-deg.
0. Scotland, N. ...	2 above	8	25	+ 12	− 4
1. Scotland, E. ...	2 below	11	29	+ 21	− 2
2. England, N.E. ...	1 below	6	30	+ 5	+ 34
3. England, E. ...	4 below	2	44	− 24	+ 74
4. Midland Cos. ...	3 below	5	42	− 13	+ 74
5. England, S. ...	5 below	4	38	− 19	+ 59
Principal Grazing, &c., Districts.					
6. Scotland, W. ...	1 above	8	19	− 1	+ 3
7. England, N.W. ...	3 below	2	28	− 13	+ 51
8. England, S.W. ...	4 below	8	35	− 39	+ 63
9. Ireland, N. ...	1 above	21	13	+ 13	+ 4
10. Ireland, S. ...	0 (aver).	27	15	+ 2	+ 25
— Channel Islands	3 below	8	16	− 52	+ 38

Districts.	Rainfall.			Bright Sunshine.	
	More or less than the Mean for the Week.	No. of Rainy Days since Jan. 4, 1887.	Total Fall since Jan. 4, 1887.	Percentage of possible duration for the Week.	Percentage of possible Duration since Jan. 4, 1887.
Principal Wheat-producing Districts.	Tenths of Inch.		Ins.		
0. Scotland, N. ...	1 less	34	7.8	24	16
1. Scotland, E. ...	6 less	25	3.3	18	26
2. England, N.E. ...	3 less	21	2.0	19	24
3. England, E. ...	2 less	19	2.0	32	29
4. Midland Cos. ...	4 less	20	2.5	25	25
5. England, S. ...	3 less	19	2.4	24	21
Principal Grazing, &c., Districts.					
6. Scotland, W. ...	5 less	28	6.6	13	19
7. England, N.W. ...	4 less	23	3.3	17	23
8. England, S.W. ...	8 less	23	3.4	28	25
9. Ireland, N. ...	3 less	26	4.5	20	23
10. Ireland, S. ...	6 less	25	5.1	22	27
— Channel Islands	4 less	25	3.2	31	36

NOTICES TO CORRESPONDENTS.

Intelligent Readers, do please Note.—*Letters relating to* Advertisements, *or to the supply of the Paper, should be addressed to the* Publisher, *and not to the Editor.*

*** All communications intended for publication should be addressed to the "*Editor.*" Such communications should be *written on one side only of the paper*, and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Amherstia nobilis: *Alicia M. T. A.* Pray send us particulars of cultivation of this noble plant.

Angræcum sesquipedale: *C. Watkin.* The flower you forwarded is not a very fine one, and is not so good as the type.—*E. F.* Your flower measured 8½ inches across the petals—a fine, large example.

Asphalte Tennis Court and Skating: *Enquirer.* If our correspondent will send his address, we will send him a pamphlet on these subjects which has been forwarded to us for his perusal.

Books: *T. Vaughan. Domestic Floriculture*, by F. W. Burbidge (published by Blackwood & Sons, London and Edinburgh), price 7*s.* 6*d.* — *Pomologist. Scott's Orchardist* is out of print, but it may be picked up at a second-hand bookstall for a trifle.

Books on Orchid Culture and Manures: *G. B. L.* For the first-named the *Orchid Grower's Manual*, (6th edition), by B. S. Williams, Victoria and Paradise Nurseries, Upper Holloway, London, or the new *Manual of Orchidaceous Plants*, issued in parts by Messrs. J. Veitch & Sons, Royal Exotic Nursery, Chelsea, London. *Manures, their Respective Merits from an Economical Point of View*, by A. W. Crews, is one of the best of the smaller works on the second subject named. It is published by H. Cox, the *Field* office, 346, Strand, London, W.C.—*F. G. T.* See answer to *G. B. L.*

Burridge Relief Fund: Mr. R. Dean desires to acknowledge the receipt of a subscription from Mr. T. S. Ware, Tottenham, and from Messrs. Wrench (sent direct). The bank at Ipswich to which subscriptions may be sent is the National Provincial Bank of England, not the London and Provincial Bank, as previously stated,

Correction: Bunch of Grapes at the Manchester International Horticultural Show.—In our reply to this inquiry (p. 259) we erroneously stated the exhibitor to have been Mr. J. Roberts, of Gunnersbury Park, instead of Mr. J. Roberts, of Charleville Forest, Tullamore.

Dwarf and Climbing Roses: *A Subscriber.* Nurserymen always distinguish between dwarf growing and climbing Roses, although there are several kinds which are used indiscriminately, such as Mrs. Bosanquet, Gloire de Dijon, Catherine Mermet, Devoniensis, and indeed many Tea Roses with rampant habit of growth. The China and Fellenberg Noisettes are sometimes employed as covering for walls and trellises, and as pillar Roses. But there are climbing varieties of the Rose that are never used as dwarfs well adapted for covering a large extent of surface.

Epithet: *Muscidia.* Virescent might do. The *i* in Lichen is long.

Eucharis Bulbs: *G. Trinder.* Your bulbs have the usual symptoms of the bulb disease, and it will certainly spread if radical measures be not adopted.

Flowers of Peaches and Nectarines: *X.* The flowers of these are the so-called "perfect," as they possess all the organs, calyx, corolla, stamens, and pistils.

Foundation for a Wreath intended to Surround the Base of a Bride's Cake: *Young Man.* There are many kinds of material well adapted for this purpose; if you would fasten the bunches of evergreen and flowers with stout wire loops or tintacks, stout cardboard or wood might be used in the form of a disc; but if the materials are to be fastened with bouquet-wire, or fine twine, two or three hoops, of different sizes, of Willow rods, or stout fencing wire, may be employed, placing the smaller within the larger ones. These can be made firm by tying cross-pieces of wood or wire on all the wires, so that a flat trellis is formed, to which the materials of the wreath can then be fastened.

Fritillarias: *Mrs. P.* These are a genus of Lily-worts (Liliaceæ), hardy bulbs, in close affinity with the true Lilies. Fritillaria imperialis is the Crown Imperial of gardens.

Insects: *J. W.* We found no insects on your Pear buds. Three or four minute white glossy globules were on them, which we believe are spider's eggs, and harmless. The cracks on the buds are possibly the result of the severe frost or unsatisfactory cultivation. *I. O. W.*

Monkey Nuts: *E.* Arachis hypogæa, probably.

Names of Fruits: *J. C. Pear:* Chaptal.

Names of Plants: *J. C.* Strelitzia regina.—*R. Boniface.* We cannot identify. No information is given as to country, &c.—*W. W.* 1, Sequoia sempervirens, the Red-wood of California; the bark naturally peels off as the tree gets old; 2, Crypto-

meria japonica.—*W. E.* 1, Arum Arisarum; 2 and 3, send better specimens.—*W. C.* Spiræa prunifolia, double-flowered variety.—*J. C.* Bundle of leafless twigs; 5, apparently Cornus sibirica; 6, cannot identify; an Almond probably; 8, apparently the Lombardy Poplar: send when in leaf. —*W. S.* 1, Berberis Darwinii; 2, B. empetrifolia. —*W. H. D.* Epidendrum odoratissimum.—*J. H.* Dendrobium speciosum.—*H. M. H.* Dendrobium Pierardi. *W. G.* Cœlogyne flaccida.—*J. H.* 1, 2, Camellias, not good specimens enough to determine; 3, Eranthemum sp.; 4, Epacris miniata; 5, E. delicata; 6, Pteris serrulata cristata; 7, Doodia caudata.

Orchids in Season.—Received from the gardens of Thomas Statter, Esq., Stand Hall, Manchester (gr., Mr. R. Johnson), some beautifully grown examples of bloom of Cattleya Trianæ, Dendrobium nobilius, D. Wardianum Lowii, Odontoglossum Cervantesi decorum, and Phalænopsis Stuartiana. These were one and all fresh-looking, and perfectly uninjured by smoke or fog.

Plumbago rosea: *Mrs. P.* This should be propagated in heat during the early spring, and grown along freely until well established in 6 or 8-inch pots; during July, August, and the early part of September the plants should be kept in a cooler and more airy structure, with plenty of sunshine allowed them. This will tend to ripen and solidify the wood, resulting afterwards, when again placed in a higher temperature, in an abundance of floral sprays. They succeed best when trained near the glass and allowed to hang from the roof wires, as it were; in this way their beauty is seen to advantage.

Red Cedar of Commerce: *Mervyn.* That which is usually meant under this term is Juniperus virginiana. A tree found growing on low lying and swampy lands in the south-eastern parts of the United States of America.

Removal of Bulbs at Expiration of Lease: *Daffodil, Cork.* If planted for purposes of trade the bulbs may be removed, but in absence of any agreement with the landlord, if planted for other purposes, they cannot be removed without risk. But as many bulbs must be, and are better when taken up in autumn, why not take the best bulbs then, and leave the brood only, for the landlord?

Stephanotis, Non-flowering of: *Mrs. Porteous.* Your letter does not state if the Stephanotis is planted in a border, or grown in a pot. We surmise, however, that it is planted out in a border composed of soil that has been conducive to a vigorous growth. If this be the case, we advise you either to lift, and transfer it carefully to a large-sized pot, or to remove the soil around it. Cut back some of the stronger roots, and replace with soil of a poorer character, choosing for this purpose loam rather than peat; the latter soil is productive of robust growth if used too freely. Peat will also impart a dark green colour to the leaves, and much rampant growth that will not flower freely. Possibly the temperature of the stove in which it is growing may be somewhat high with a corresponding degree of atmospheric moisture; in this case reduce the temperature and moisture as far as may be consistent with the safety of the other plants, at the same time keeping the Stephanotis dry at the root even to causing shrivelling of the leaves. Should the plant be in a pot already, remove it carefully to a cooler house with a minimum temperature of 50°; keep it dry at the roots whilst there, and transfer to the stove again in about a month's time. Do not be alarmed at the loss of a few leaves; when again placed in heat prune moderately hard. The young shoots made after this course of treatment should produce flower, provided the plant is not unduly shaded from sunshine. Seedlings of Stephanotis are invariably shy-blooming, and we firmly believe that where plants are persistent in non-flowering after such treatment as we have now detailed, the plants may be taken to be seedlings. We know of one we believe to be such, which year after year, under the best of treatment, refuses to yield more than a few solitary trusses of flowers. *J. H.*

The Best Oranges for Producing Flowers: *T. W. S.* The so-called Seville or Bitter Orange is the variety usually grown for flowers, which are large and highly scented, and are produced in abundance, no injury to the tree resulting from the frequent cutting, which is not entirely the case with the Sweet Oranges. This is the Bigaradier of the French Orange growers. The *Bigaradier à fruits sans pepins* is, I believe, one of the most floriferous of the group of Bigaradiers. There are, of course, many varieties of Sicilian Oranges used for flowers, probably raised from seed' and as difficult to distinguish as our Apples. *T. F. R,*

Vines: *Vine Grower.* The Strawberry Grape is grown at Chiswick in the Royal Horticultural Society's gardens, and may be obtained by any Fellow of the Society. There are plenty of thick-skinned Grapes, but no one will eat them who can obtain better. Lady Downe's Seedling is too thick-skinned for most people. If you want thick ones try the Lisbon or Almeira Grapes from your grocer. Even they, however, will rot and spoil through excess of moisture.—*G. Collins.* Judging from the shoots you have sent us, which are all fasciated and sterile, we should say your Vines were not very well ripened last year; probably the roots have penetrated to a cold subsoil, Had the wood been thoroughly ripened there would have been fruit shows.

Communications Received.—E. Burbery.—G. N.—F. W. B. —R. G. W.—E. W.—J. A.—C. W.—B.—Vagabondo.—J. D. —J. F. Waby.—T. S.—W. R.—W. C.—W. J. M.—W. B.—W. H. C. & Son.—D. McB. (thanks; we shall publish data). —T. R.—J. M.—J. Lawrie.—T. C.—E. Flack.—W. C.—M. Foster.—A. D.—J. Macpherson.—J. O'B.—Wild Rose.—A.—W. A.—J. J. W.—A. G. N.—A. P.—W. T. T. D.—D. M.—Muscidia.—Professor Wittmack, Berlin.—J. S.—G. H.

MARKETS.

COVENT GARDEN, February 24.

Good well-kept samples of Grapes are now beginning to find their value, but second qualities are a heavy trade. Market very quiet. *James Webber, Wholesale Apple Market.*

Fruit.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Apple, ½-sieve	1 6– 5 0	Lemons, per case	12 0–21 0
— Nova Scotia, brl.	8 0–12 0	Pears, per dozen	2 0– 4 0
Grapes, per lb.	2 0– 6 0	Pine-apples, Eng., lb.	1 0– 1 6
Kent Cobs, 100 lb.	65 0 70 0	— St. Michael. each	1 6– 6 0

Vegetables—Average Retail Prices.

	s. d. s. d.		s. d. s. d.
Artichokes, per doz.	6 0– ...	Mushrooms, punnet	1 6– 2 6
Asparagus, French, per bundle	24 0– ...	Mustard and Cress, punnet	0 4– ...
— English, per 100	12 0– ...	Onions, per bushel	4 0– ...
Beans, Kidney, lb.	4 0– ...	Parsley, dozen bunch	8 0– ...
Beet, red, per dozen	1 0– 2 0	Peas, per quart	6 0– ...
Brussels Sprouts, lb.	0 4– ...	Potatos, per cwt.	4 0– 5 0
Carrots, per bunch	0 6– ...	,, kidney, per cwt.	4 0– 5 0
Cauliflowers, per doz.	3 0– ...	Rhubarb, per bundle	0 6– ...
Celery, per bundle	1 6– 2 0	Seakale, per punnet	2 6– ...
Cucumbers, each	1 0– 2 0	Shallots, per lb.	0 3– ...
Endive, per dozen	1 0– 2 0	Spinach, per bushel	5 0– ...
Green Mint, bunch	1 0– ...	Sprue, bundle	1 0– ...
Herbs, per bunch	0 4– ...	Tomatos, per lb.	2 6– ...
Leeks, per bunch	0 3– ...	Turnips, bunch	0 4– ...
Lettuce, per dozen	1 0– 1 6		

Potatos.—Markets very heavy, at the following prices:—Regents, 80*s.* to 100*s.*; Magnums, 70*s.* to 110*s.* per ton.

Plants in Pots.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz.	6 0–18 0	Ferns, in variety, per dozen	4 0–18 0
Arum Lilies, dozen	18 0–24 0	Foliage plants, various, each	2 0–10 0
Azaleas, per dozen	24 0–42 0	Genista, per doz.	10 0–12 0
Cineraria, per doz.	9 0–12 0	Hyacinths, 12 pots	6 0– 9 0
Cyclamens, dozen	12 0–24 0	Lily-of-Val., 12 pots	12 0–24 0
Cyperus, per dozen	4 0–12 0	Marguerite Daisy, per dozen	6 0–12 0
Daffodils, 12 pots	9 0–10 0	Myrtles, per dozen	6 0–12 0
Dracæna terminalis, per dozen	30 0–60 0	Palms, in var., each	2 6–21 0
— viridis, per doz.	12 0–24 0	Pelargoniums, scarlet, per doz.	6 0– 9 0
Epiphyllum, dozen	18 0–30 0	Primula sinensis, per dozen	4 0– 6 0
Erica hyemalis, per dozen	12 0–24 0	Solanums, per dozen	9 0–12 0
— various, dozen	9 0–24 0	Spiræa, per dozen	12 0–24 0
Euonymus, in var., per dozen	6 0–18 0	Tulips, 12 pots	6 0– 8 0
Evergreens, in var., per dozen	6 0–24 0		
Ficus elastica, each	1 6– 7 0		

Cut Flowers.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Arum Lilies, 12 blms.	3 0– 5 0	Mignonette, 12 bun.	3 0– 6 0
Azaleas, 12 sprays	0 6– 1 0	Pelargoniums, scarlet, 12 sprays	0 9– 1 0
Bouvardias, per bun.	0 6– 1 0	Primulas, single, 12 bunches	4 0– 6 0
Camellias, 12 blooms	2 0– 4 0	— double, 12 sprays	1 0– 1 6
Carnations, 12 blms.	1 0– 3 0	Roses, Tea, per doz.	2 0– 4 0
Cyclamen, 12 blooms	0 4– 0 9	— coloured, dozen.	3 0– 6 0
Daffodils, 12 blooms	0 6– 1 6	— red, French, doz.	1 6– 2 0
Eucharis, per dozen	3 0– 6 0	— Saffrano, Fr. doz.	1 0– 1 6
Gardenias. 12 blooms	12 0–30 0	Tropæolums, 12 bun.	1 0– 2 0
Hellebores, or Christmas Roses, 12 bls.	0 4– 1 0	Tuberoses, 12 blms.	2 6– 4 0
Heliotrope, 12 spr.	0 6– 1 0	Violets, 12 bunches	1 6– 2 0
Jasmine, white, bun.	0 6– 0 9	— Parme, French, per bunch	3 0– 4 6
Lilies of the Valley, 12 sprays	0 9– 1 6	— Czar, Fr., bunch	1 6– 2 0
Marguerites, per 12 bunches	3 0– 6 0		

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JOHN FORBES, Nurseryman, Hawick, N.B.

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CLEARANCE SALE of healthy PALMS for Table and Conservatory Decoration.—LATANIA BORBONICA, SEAFORTHIA ELEGANS, and PHŒNIX RECLINATA, 12 inches high, 6*d.* each, 4*s.* per dozen, 25*s.* per 100; same kinds, 20 inches high, 1*s.* 6*d.* each, 6 for 8*s.*, 12 for 14*s.* Packages and parcels post-free.
COCOS WEDDELLIANA, ARECA LUTESCENS, and EUTERPE EDULIS, 2*s.* to 5*s.* each; KENTIAS, 4*s.* to 10*s.* each; large PALMS, 3 feet to 6 feet high, 5*s.* to 50*s.* each. All of splendid value.
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PRINCE of WALES RASPBERRY, in good canes, 7*s.* per 100; CHAMPAGNE RHUBARB, 6*s.* per dozen; true White FORGET-ME-NOTS, 4*s.* per dozen.
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VEGETABLE and AGRICULTURAL SEEDS.

H. AND F. SHARPE will be pleased to give special quotations for all their fine selected stocks of the above-named Seeds of 1886 growth. Their prices will be found very advantageous to purchasers.
Seed-growing Establishment, Wisbech.

FOR SALE, 50 Large CAMELLIAS, also GARDENIA, AZALEA, ORCHIDS, EUCHARIS, CUCUMBER, STRAWBERRY and LETTUCE PLANTS.
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SIMPLE INSTRUCTIONS, by which anybody, anywhere, may force and obtain a great quantity (lasting until outdoor beds are in full bearing), of most excellent ASPARAGUS, at a very trifling expenditure of time or money. Directions sent free to all applicants.
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TYNAN'S "EXCELSIOR" MIXTURES.—Primula, Calceolaria, Cineraria, Cyclamen, Begonia, Gloxinia, and Petunia. Each contains the very newest and best varieties out. Cannot be beaten. Small packets, 1*s.* each variety; larger packets, 2*s.* 6*d.* each variety.
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LANCASHIRE LAD GOOSEBERRY, 3 yr., and Dutch Red CURRANT TREES, 4 yr., to be sold, strong and clean.
Apply to W. WARREN, Worton Gardens, Isleworth, W.

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LAING'S BEGONIA SEED.—Awarded Two Gold Medals. From Prize Plants, in sealed packets. Choice mixed, from single varieties, 1*s.*, 2*s.* 6*d.*, and 5*s.* per packet; double varieties, 2*s.* 6*d.*, 3*s.* 6*d.*, and 5*s.* per packet. Collections—12 named varieties, separate, 5*s.* 6*d.*; 6 ditto, 3*s.* Order direct from us, to procure the genuine seed.
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THOMAS METHVEN AND SONS offer their choice strain of the above, in five varieties, viz., Scarlet, Purple, White, Crimson, and White Wall-leaved, at 1*s.*, 2*s.* 6*d.*, & 5*s.* each colour. Price to the Trade on application.
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FOREST, FRUIT, and ORNAMENTAL TREES.—We hold an extensive Stock of the above, all clean grown, well rooted, and unsurpassed for hardiness and quality.
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Apply to GARDENER, Pyt House, Tisbury.

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4*d.* per bushel; 100 for 25*s.*; truck (loose, about 2 tons), 40*s.*; 4-bushel bags, 4*d.* each.
LIGHT BROWN FIBROUS PEAT, 5*s.* 6*d.* per sack; 5 sacks, 25*s.*; sacks, 4*d.* each.
BLACK FIBROUS PEAT, 5*s.* per sack, 5 sacks, 22*s.*; sacks, 4*d.* each.
COARSE SILVER SAND, 1*s.* 9*d.* per bushel; 15*s.* per half ton; 26*s.* per ton, in 2-bushel bags, 4*d.* each.
YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1*s.* per bushel
SPHAGNUM MOSS, 8*s.* 6*d.* per sack.
MANURES, GARDEN STICKS, VIRGIN CORK, TOBACCO CLOTH, RUSSIA MATS, &c. Write for Price LIST.—
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TELEGRAMS—"FLORICULTURE, LONDON." Established 1854.

GENUINE GARDEN REQUISITES

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BEST COCOA-NUT FIBRE REFUSE, 1*s.* 3*d.* per sack; 10 for 10*s.*; 20 for 18*s.*; 30 for 25*s.*; sacks included. Two ton trucks 25*s.*, free on rail. Best brown fibrous Kent PEAT, 5*s.* per sack; 5 for 22*s.* 6*d.* Best black fibrous PEAT, 4*s.* 6*d.*, per sack; 5 for 20*s.* Coarse Bedfords. SILVER SAND, 1*s.* 6*d.* per bushel; per ton, 25*s.* Pure LEAF MOULD, yellow fibrous LOAM, PEAT MOULD, 1*s.* per bushel. Potting composts, 5*s.* per sack. Fresh SPHAGNUM MOSS, 6*s.* per sack. Charcoal, Bones, Guano, &c. ARCHANGEL and PETERSBURG MATS from 12*s.* to 21*s.* per dozen. Raffia, Sticks, and Labels. SPECIALITE TOBACCO PAPER, 8*d.* per lb.; 28 lb. for 18*s.* Finest TOBACCO CLOTH, 8*d.* per lb.; 28 lb. for 18*s.* Price List sent free.—W. HERBERT AND CO., Hop Exchange Warehouses, Southwark Street, London, S.E.

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GATERELL & SON, RINGWOOD, HANTS,

Are now prepared to receive Orders for the above.
GOOD SOUND PEAT, very fibrous, for Orchids, in sacks only; do., for Stove, Greenhouse, Hardwooded Plants, and Rhododendrons, in any quantity.
GOOD YELLOW FIBROUS LOAM, Coarse and Fine SILVER SAND, SPHAGNUM, &c.
Special low terms to the Trade. Price List on application.

BEESON'S MANURE is the best for all Horticultural Purposes. Sold in tins, 1*s.*, 2*s.* 6*d.*, 5*s.* 6*d.*, and 10*s.* 6*d.*, or 1 cwt. bags, sealed, 13*s.* each. By all Nurserymen or Seedsmen, or direct from Carbrook Bone Mills, Sheffield. Also pure CRUSHED UNBOILED BONES, any size, and guaranteed of the best quality.

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PROCTOR AND RYLAND'S well-known
Special Garden Manures.
Pure Ground Bone for Vines, Potting, &c.
10*s.* per bag of 1 cwt. on receipt of Postal Order.
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The Best and Cheapest

HORTICULTURAL MANURES.

For Fruit, Vines, &c. "LE FRUITIER."
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For Potatos. POTATO MANURE "SUCCESS."
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Sold in 1s. tins, and in 7 lb. bags, and upwards, by all Seedsmen, or direct from

W. WOOD & SON, F.R.H.S.,
Sole Manufacturers,
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WOOD & SON'S CATALOGUE and Price LIST, post-free, includes all the best qualities of ORCHID and other PEATS, LOAM, SAND, COCOA-FIBRE, MUSHROOM SPAWN, BONE MEAL, DRIED BLOOD, POTASH, AMMONIA, and all other HORTICULTURAL REQUISITES. Samples free.

MECHI'S SOOT AND SEWAGE MANURE.

A dry powder, carefully manufactured by Mechi's process,

WHICH IS DISTINCT FROM ALL OTHERS.

The very best Manure for Roots, Grass, Potatos, Wheat, Barley, Oats, Turnips, Mangels, Fruit, Vegetables, Hops, &c.

DESTROYS WIREWORMS, SLUGS, INSECTS, and GRUBS.

35s. per Ton loose; 40s. per Ton in bags; 4s. per Cwt. in bag.

Delivered Free on Rail or Boat.

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PEAT and SAND.—Light Brown PEAT for Nursery and Greenhouse Work, in four-ton trucks of 10 yards each, at 10s. per yard. In bags at 2s. 6d. per bag. Rhododendron and American Plant Beds, at 15s. per ton. Orchid Peat, 5s. per bag. Fresh SPHAGNUM, 7s. 6d. per bag. SILVER SAND, coarse or fine, 13s. per ton.
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TWO PRIZE MEDALS.

Quality, THE BEST in the Market. (All sacks included.)

PEAT, best brown fibrous ...	5s. per sack;	5 sacks for 22s. 6d.
PEAT, best black fibrous ...	4s. 6d. ,,	5 sacks for 20s.
PEAT, extra selected Orchid	5s. 6d. ,,	5 sacks for 25s.
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PEAT MOULD, ,,		
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RAFFIA FIBRE, best only	1s. per lb.	
TOBACCO CLOTH, finest imported ...	8d. lb., 28 lb. 18s.	
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CHUBB'S "PERFECT" FERTILISER, the Best Food for all kinds of Plants, Flowers, Fruits, Vegetables, &c. ...

	Tins.	7lb.	14lb.	28lb.	56lb.	1 cwt.
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CRUSHED BONES, best quality	1/2	2/-	3/6	6/-	12/-	
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HORTICULTURAL CHARCOAL, ditto, 2s. 6d. per bushel.

COCOA-NUT FIBRE REFUSE (by Chubb's special process), sacks, 1s. each; 10 sacks, 9s.; 15 sacks, 13s.; 20 sacks, 17s.; 30 sacks, 25s.; 40 sacks, 30s. Truck-load, loose, free on rail, 25s. Limited quantities of G., special quality, granulated, in sacks only, 2s. each. Terms, strictly Cash with order.

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JENSEN'S
NORWEGIAN
FISH-POTASH GUANO
has given splendid results with
VINES, ROSES, CHRYSANTHEMUMS, AND TENNIS LAWNS.

The following Analysis is guaranteed:—

7 per cent. Ammonia. 20 per cent. Phosphates.
15 per cent. Potash. 10 per cent. Magnesia.
Only 5 per cent. Moisture.

RETAIL PRICES, CARRIAGE PAID.

2 lb. Tin, 1s.; Bags, 7 lb., 2s.; 14 lb., 4s.; 28 lb. 6s. 6d.; 56 lb., 10s. 6d.; 1 cwt., 16s.; 2 cwt., 30s. Bags free.

Write for Testimonials and Directions for Use.

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Orchid Peat—a Specialty!

W. WOOD AND SON are now cutting from THE NEW ESTATE (the only estate celebrated for its special quality of ORCHID PEAT).
Send for Sample. Special Quotations.
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PEAT—LOAM—SAND.—50 Acres Light Brown PEAT, full of fibre, 9s. per yard, in truckloads. Yellow Fibrous LOAM, best in England), 10s. per ton, in truckloads. SILVER SAND, 10s. per ton, in truckloads.
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NATIVE GUANO.—Price £3 10s. per ton in bags; lots under 10 cwt., 4s. per cwt. Sample bag (1 cwt.) sent, carriage paid, to any station in England on receipt of P.O. for 5s.

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Our special Grass, Potato, Fruit, and Plant MANURES; PEATS, SOILS, &c., are offered in bulk at rates to suit all requirements.

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To Market Gardeners, &c.

To Grow fine Vegetables and Flowers, Gardeners should use

SULPHATE OF AMMONIA.

One trial will prove the great value of this Manure, and ensure its constant use hereafter. It can be applied either separately or mixed with ordinary stable or farmyard manure. Rose Trees and Garden Plants are much benefited by being watered with a weak solution once or twice a week. Instructions on application, post free. Price free on rail at Sheffield, 12s. 6d. per cwt., or 7s. per 56 lb. P. O. Orders payable to The MANAGER, Sheffield Gas Company, Sheffield.

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For CHOICE PLANTS, FERNS, HEATHS, &c.; also for RHODODENDRONS.

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LOAM, SAND, LEAF-MOULD, SPHAGNUM, COCOA-NUT FIBRE, CHARCOAL, &c., &c.; also all kinds of NURSERY STOCK. Prices on application to

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In Tins, 2 lb., **1s.** *Larger quantities are charged less.*

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Ground BONES, FISH GUANO, POTASH, CRUSHED HOOFS and HORNS, and all other MANURES, at lowest prices.

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ENGLISH ROLL TOBACCO PAPER,

Cloth and Fumigating Mixture,

Is celebrated throughout the United Kingdom, and acknowledged to be best, safest, and strongest it is possible to obtain, and contains the pure essence of Tobacco only. 6 lb., 4s. 6d.; 14 lb., 10s.; 30 lb., 20s.; the above is carriage paid to London or any railway station in Kent. Parcels sent by Post, paid:—2 lb., 22 stamps; 3 lb., 2s. 6d.; 7 lb., 5s. 6d.; 11 lb. 8s. 6d. Safe delivery is guaranteed on all parcels. Imported Tobacco Paper, &c., at lower rates. Our Tobacco Paper, Cloth, and Fumigating Mixture still stand the best extant. Used in Royal Nurseries, the gardens of the Nobility, by leading men of the Profession, &c. TRADE INQUIRIES SOLICITED.

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Special offer of Light Brown ORCHID PEAT, full of Pure Bracken fibre; also a good GENERAL PEAT, Quotation with sample on application to
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Sole Agent for the Continent—E. J. Voûte, Zeist, Holland.

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RUSSIA MATS, RAFFIA FIBRE, TOBACCO RAG, SHADING MATERIALS, TWINES, &c., supplied to the Trade only, at lower prices than any other firm. MARENDAZ AND FISHER, James Street, Covent Garden, W.C.

TANNED NETTING, 2 yds. wide, 1½d. per yd.; 10s. per 100 yards; 4 yds. wide, 3d. per yd., 20s. per 100. NEW TWINE NETTING, 1 in. mesh, 1 yd. wide, 2d.; 2 yds. wide, 4d.; 4 yds. wide, 8d. per yd. COTTON NETTING, 54 inches wide, 9 meshes to square inch, 7d. per yd.—best article to protect Fruit Trees, &c. BAT-FOLDING NETS, on Bamboo Poles, 20s.; CLAP NETS, for Birds, 30s.
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CONSERVATORY BLINDS made to order,
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It is perfectly rot-proof, keeps sound under conditions where other fabrics have shown fungoid growth and incipient decay.

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Cotton Wool and Wadding
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Send for Samples and Prices.

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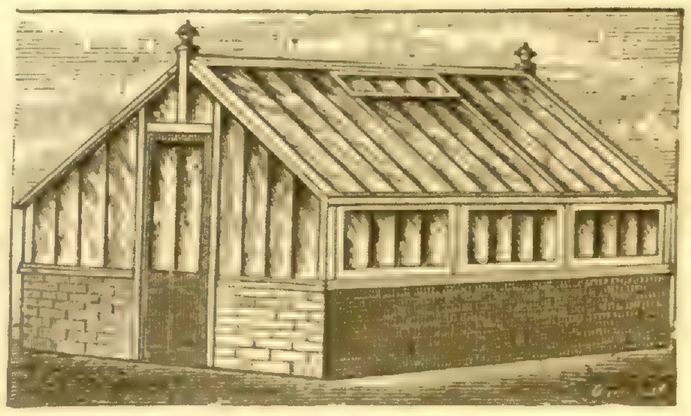

Length.	Width.				Length.	Width.			
10 by	8 ft.	£7	7	0	30 by	12 ft.	£23	19	6
15 by	10 ft.	11	15	0	40 by	14 ft.	34	9	0
20 by	12 ft.	17	4	6	50 by	14 ft.	42	1	0

LEAN-TO and THREE-QUARTER SPAN same prices as above.
PIT FRAMES equally cheap.

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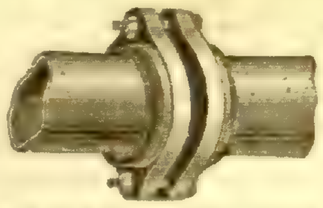

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GALVANISED WIRE.

B.W.G., 2*s.* per 100 yards.

GALVANISED EYES, 1½ inch from shoulder to eye, 7*d.* per doz.
Ditto TERMINALS. with Winders, 8*s.* per doz.
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Complete CATALOGUE of all kinds of Iron and Wire Fencing free.

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14×12, 16×12, 18×12, 20×12, 16×14, 18×14, 20×14

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21-oz. Foreign of the above sizes, in 100 and 200 feet boxes, 3ds and 4ths qualities, always kept in stock.

A large stock of similar current sizes of **15-oz.** glass in 200 feet boxes.

Propagating and Cucumber Glasses, and all Miscellaneous Glass Articles, can be obtained from

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Rosher's Garden Edging Tiles.

THE ABOVE and many other PATTERNS are made in materials of great durability. The plainer sorts are specially suited for KITCHEN GARDENS, as they harbour no Slugs or Insects, take up little room, and once put down incur no further labour or expense, as do "grown" Edgings, consequently being much cheaper.

GARDEN VASES, FOUNTAINS, &c., in Artificial Stone, very durable and of superior finish, and in great variety of design.

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ORNAMENTAL PAVING TILES, for Conservatories, Halls, Corridors, Balconies, &c., from 3*s.* per square yard upwards. Pattern Sheet of Plain or more elaborate Design, with Prices, sent for selection.

WHITE GLAZED TILES, for Lining Walls of Dairies, Larders, Kitchen Ranges, Baths, &c. Grooved and other Stable Paving of great durability, Wall Copings, Drain Pipes and Tiles of all kinds. Roofing Tiles in great variety, Slates, Cement, &c.

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SILVER SAND, fine or coarse grain as desired. Price by post, per Ton or Truckload, on Wharf in London, or delivered direct from Pits to any Railway Station. Samples of Sand free by post.

FLINTS and BRICK BURRS for Rockeries or Ferneries.

KENT PEATS or LOAM supplied at lowest rates in any quantities.

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We are now Manufacturing GARDEN POTS, by latest patent machinery. The superiority of these Pots is their uniformity of size, perfect shapes, great breadth at bottom inside, new plan of Drainage at bottom, and smoothness inside. Our Flower Pots have been noted for the past thirty years, for their splendid finish, strength, beautiful colour, for being so porous, and for never turning green. Carriage and breakage free, on truck loads, to any station.

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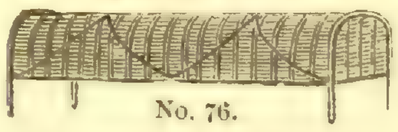

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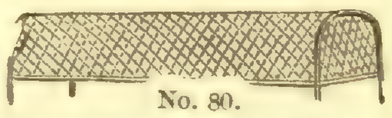

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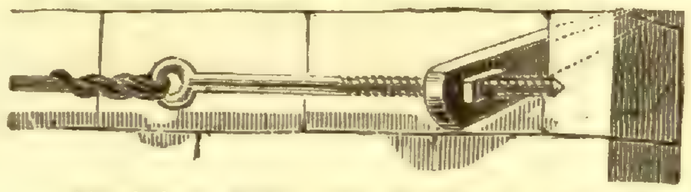

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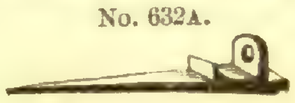

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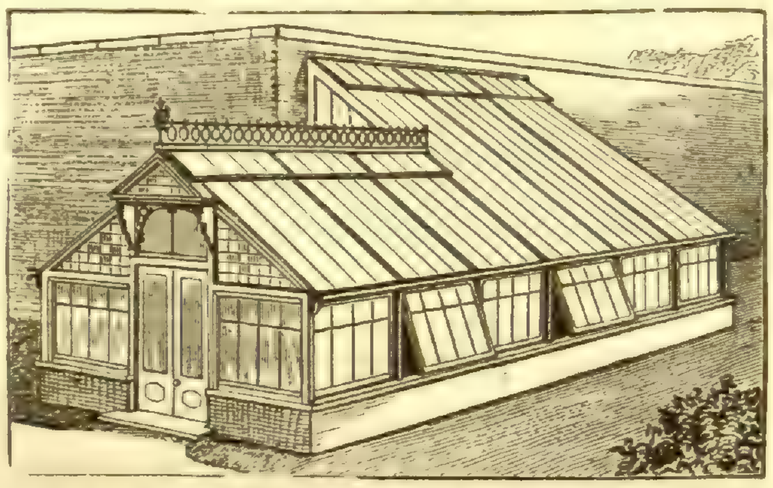

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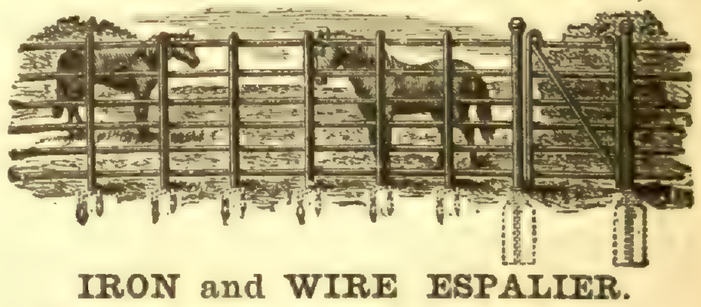

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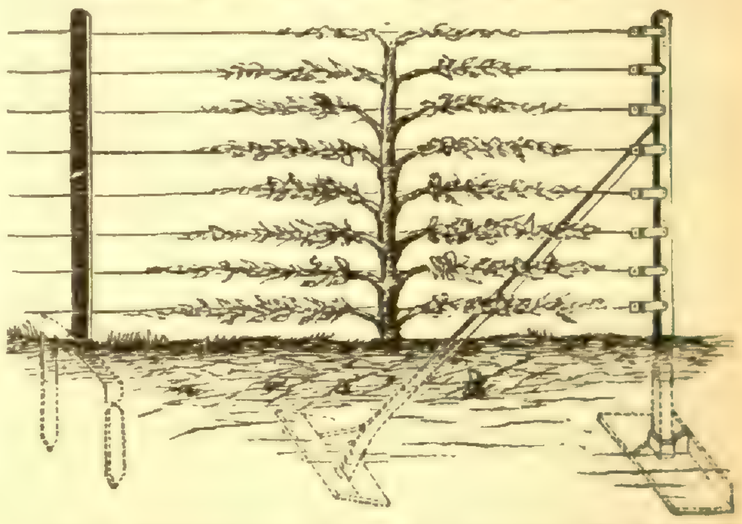

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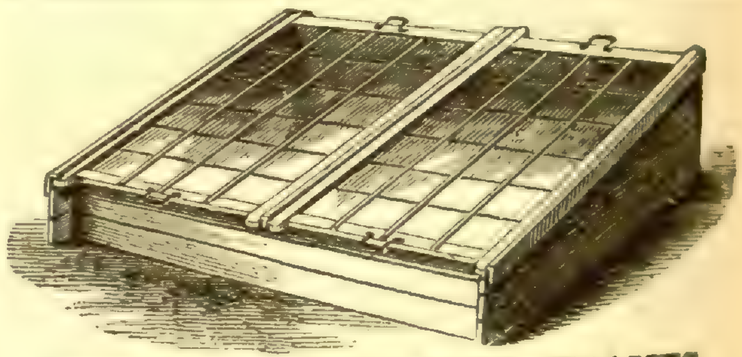

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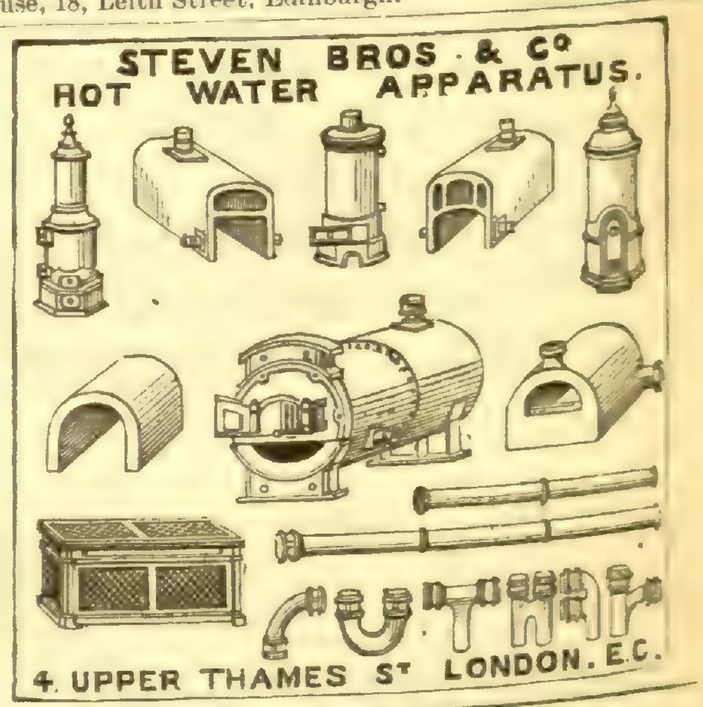

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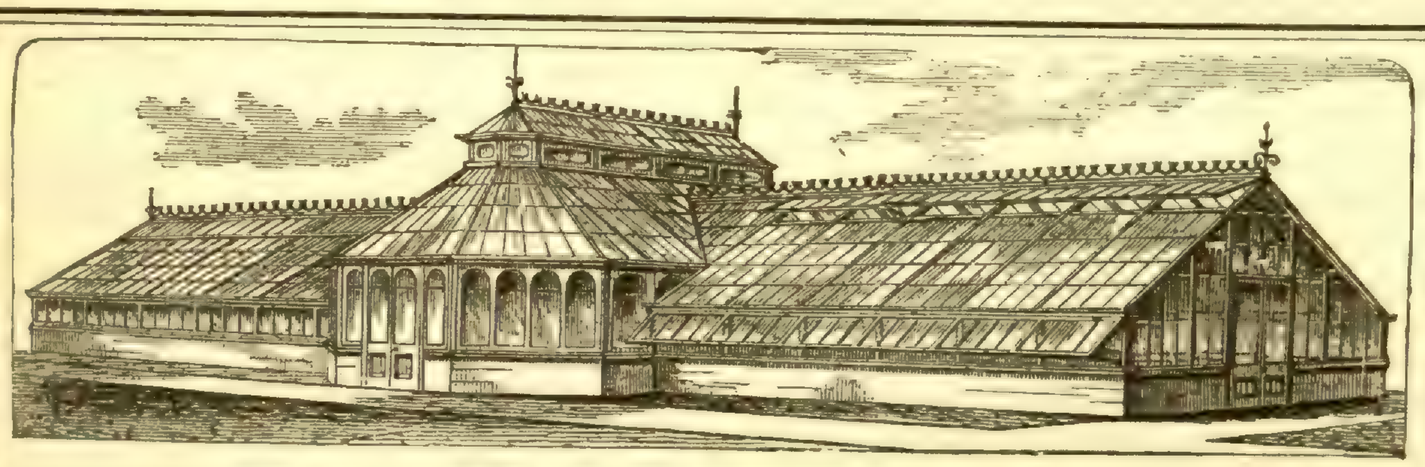

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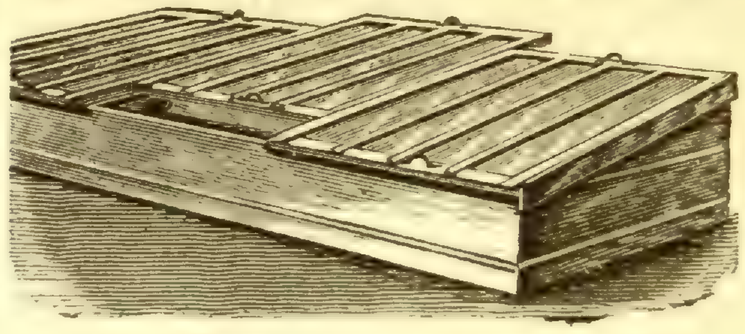

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GARDENER. — Thoroughly experienced in every branch of the profession, including Landscape Work (Catholic preferred). Suitable man will be most liberally treated.—Address with copies of testimonials and full particulars "LANDSCAPE," Keith & Co., Advertising Agents, Edinburgh.

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JOURNEYMAN, in the Houses, or Inside and Out.—Age 22; bothy preferred.—W. TUCK, St. Martin's, Marlborough, Wilts.

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To Nurserymen.

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IMPROVER; age 19.—J. Lambert, Onslow Hall, Shrewsbury, can highly recommend a young man as above.

IMPROVER, in a Gentleman's establishment. —Age 18; bothy preferred. One year and six months character from present place.—T. HULKS, Ponsbourne Park, Hertford, Herts.

IMPROVER, in a Gentleman's establishment. —£5 Premium will be paid for a term of two years; has served two years' apprenticeship. Excellent character.—T. KEMP, Chithurst, Petersfield, Hants.

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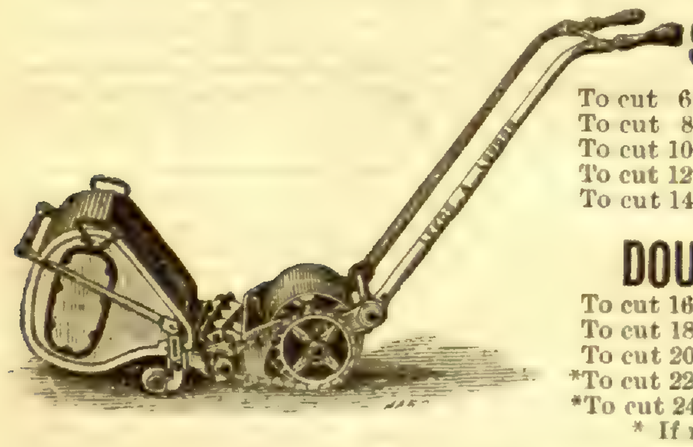

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To cut 18 inches,	do.	man and boy	7 10	0
To cut 20 inches,	do.	do.	8 0	0
*To cut 22 inches,	do.	two men	8 10	0
*To cut 24 inches,	do.	do.	9 0	0

* If made stronger, suitable for Donkey, 30s. extra.

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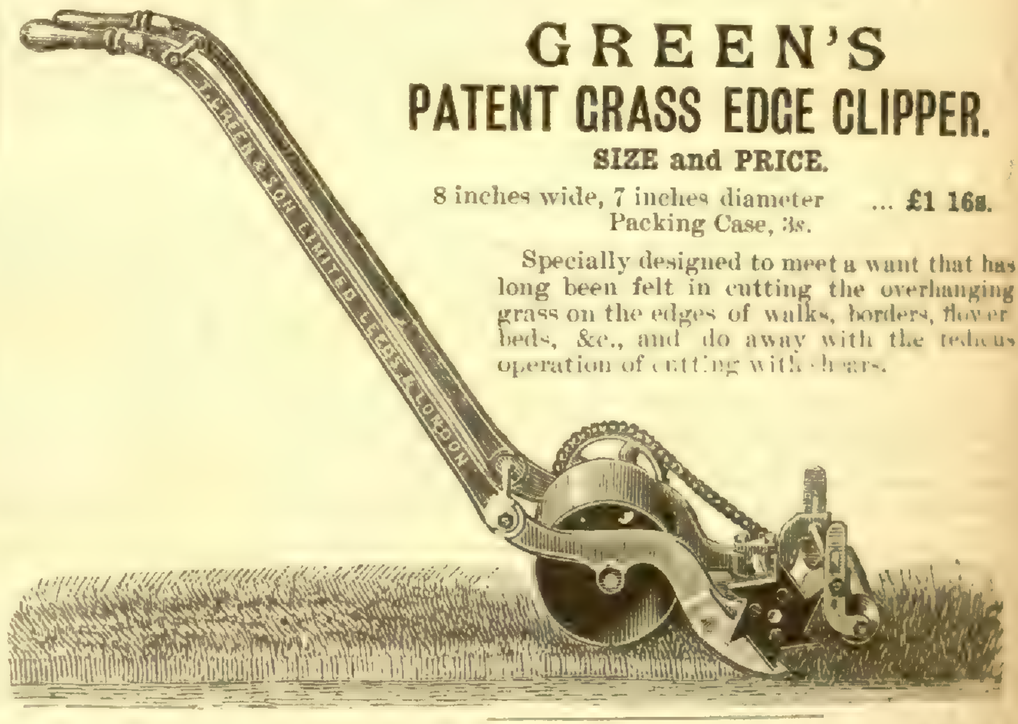

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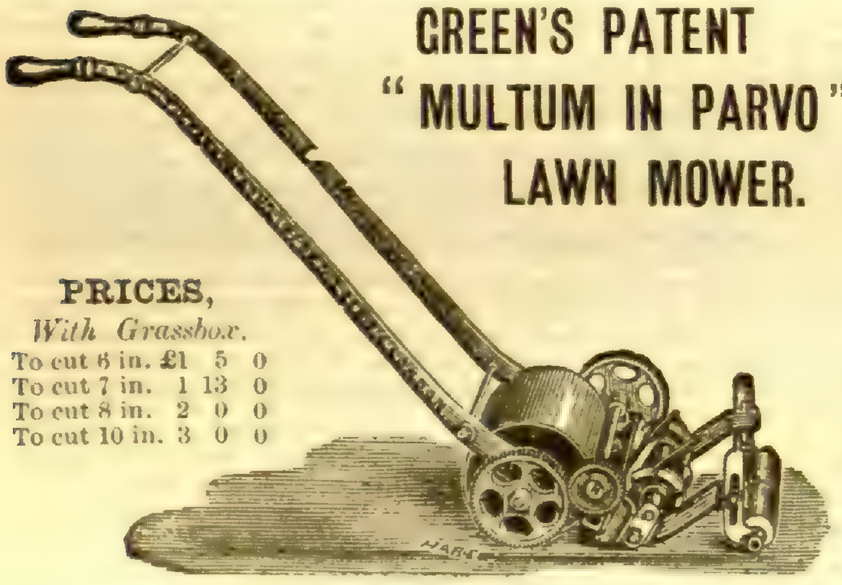

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To cut 8 in.	2	0	0
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Small Bag of Marking Composition, 9d.

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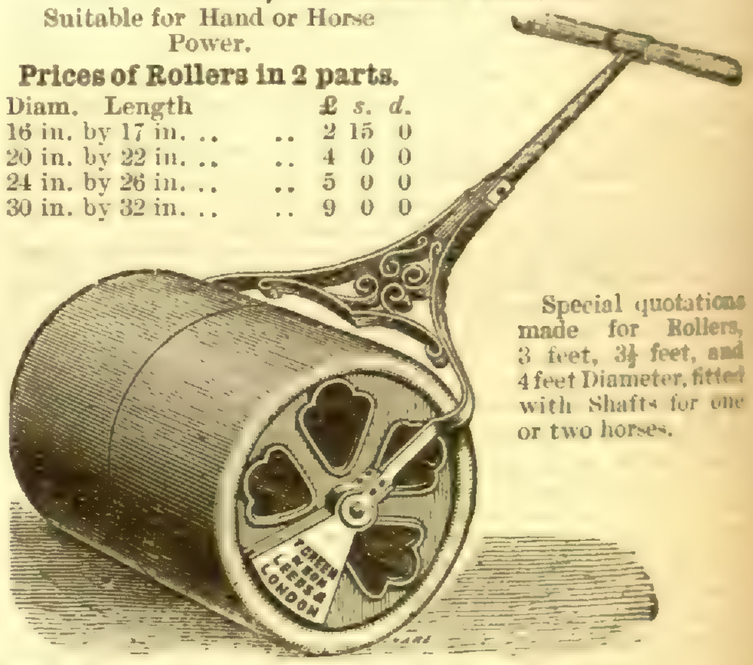

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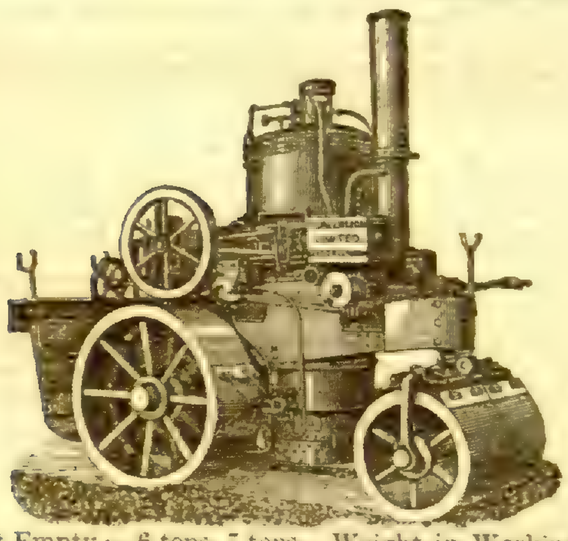

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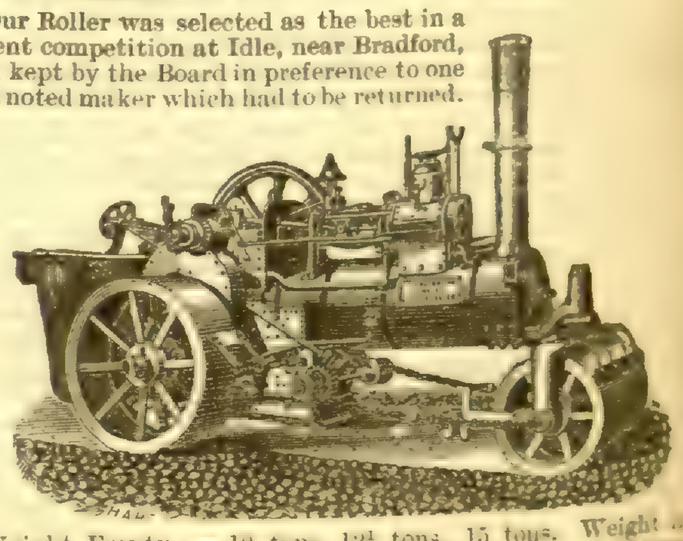

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CONTENTS.

Alton Towers 324
Alpine plants in winter 318
Apiary, the 321
Arran, tender plants in . 324
Books :—
Forestry in France ... 325
Handbook of Practical Botany 324
Outlines of Classification and Special Morphology 325
Chinese water-temple ... 318
Cultivated plants, origin and extinction of ... 319
Cultural memoranda ... 323
Florentine Iris 316
Flower beds, designs for 320
Flower garden 316
Fruits under glass ... 322
Galanthus caucasicus ... 313
" nivalis 313
Gardeners' Orphanage ... 325
Germinating apparatus, the Geneva 314
Hardy fruit garden ... 322
Iceland 323
Kitchen garden, the ... 314
Lælia anceps, Stella ... 312
London seed warehouse . 316
Obituary :—
J. Vair 310
Odontoglossum × Staurastrum 313
"Orchid Album" ... 321
" houses, the ... 313
" notes 317
Pears, a selected list of 100 varieties 322
Phylloxera, the 320
Plants and their culture 321
Plants, wonderful ... 311
Plums and Pears in pots 326
Polygonum Bistorta ... 320
Potatos, deterioration of 326
Reichenbachia 320
Salvias 313
Scotland 324
Strawberry plants ... 326
Stylidium, new species of 320
Sunshine 320
Tonquin Beans 320
Trees and shrubs... ... 317

ILLUSTRATIONS.

Bee-hive, British invertible bar-frame 321
Cypripedium callosum 315
Pear, Beurré Rance 322
" Easter Beurré 322
" Madame Millet 323
" Verulam 323
Seed tester, the Geneva 314
Water-temple in a Chinese garden 319

ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W.
NOTICE!—COMMITTEE MEETINGS: Scientific, at 1 P.M., in the Lindley Library; Fruit and Floral, at 11 A.M., in the Conservatory, on TUESDAY NEXT, March, 8.
N.B.—Entrances, N.E. Orchard-house, Exhibition Road; and Exhibitors' Entrance, east side of Royal Albert Hall.

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BRUCE FINDLAY, Royal Botanic Gardens, Manchester.

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12 HYACINTHS, Amateurs, 1st prize, £2; 2d, £1.
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A. MOSS, Chadwell Heath, E.

Covent Garden Market, W.C.
W. H. GULLIFORD, having recommenced business on his own sole account, and the firm of Gulliford & Co. not being in this market at present, all Letters and Goods should be addressed to
W. H. GULLIFORD, Salesman, Long Market, Covent Garden, W.C. Market Prices and every information on application.

ORCHIDS A SPECIALTY. Stock immense in extent, fine in quality, moderate in price. Inspection invited.
HUGH LOW AND CO., Clapton Nursery, London.

EDW. PYNAERT'S NEW PLANT CATALOGUE is now sent post-free on application.
EDW. PYNAERT, Ghent, Belgium.

NYMPHÆA SCUTIFOLIA.—The beautiful deep blue WATER LILY. Strong flowering roots may be sent, per parcel post, for 5s. Now is the best time and cheapest, as in the growing season they are 10s. 6d. NYMPHÆA RUBRA, good roots, 7s. 6d. each.
HOOPER AND CO. (Limited), Covent Garden, London, W.C.

FIDLER'S NOVELTIES FOR THE GARDEN.
"FIDLER'S CLIPPER," NEW POTATO. Awarded Silver Medal, as the best Early Round variety in cultivation. Price 1s. per pound, 7 pounds, 5s.
"FIDLER'S CONQUEROR PEA."—A grand new Pea, a cross between Laxton's Supreme and Lye's Favourite. Produces double pods of from 9 to 12 large deep green Peas of splendid quality. Price per sealed pint, 2s.
"FIDLER'S DEFIANCE MELON."—Splendid new variety, raised by Mr. C. Ross, Welford Park. The fruit is handsome, with dull yellow skin, well netted. It is an abundant cropper. Price 1s. per packet.
PRIZES FOR THE ABOVE Three Novelties will be offered at the Reading Horticultural Society's Show, the Newbury Show, and at the Exhibitions of the Royal Horticultural Society. See Shedules or apply to
C. FIDLER, Seedsman, Reading.

SQUELCH AND BARNHAM, North Row, Covent Garden, W.C., are OPEN TO DISPOSE OF any quantity of MUSCATS and BLACK GRAPES, TOMATOS, FRENCH BEANS, STRAWBERRIES, CHOICE FLOWERS, &c. Highest Market Prices obtained; Account Sales daily, Cheques weekly or as preferred by Sender. Baskets and Labels supplied. References given.

Floral Commission Agency.
A. HILL AND CO., 52, Hart Street, Covent Garden, W.C., are open to RECEIVE CONSIGNMENTS of Choice CUT FLOWERS in any quantity. A. H. & Co., giving personal attention to all consignments, are thus enabled to obtain the highest market prices. All Cheques forwarded weekly. Bankers and good Trade references. Boxes and Labels supplied.

MESSRS. GREGORY AND EVANS, NURSERYMEN, Sidcup, and 285, 286, 287, 288, Flower Market, Covent Garden, W.C., are open to RECEIVE CONSIGNMENTS of Choice CUT FLOWERS in any quantity for their Commission Department. Boxes and Labels supplied.
Telegraph Address—"COMMISSION, SIDCUP."

Maréchal Niels!—Maréchal Niels!
GROWERS OF ABOVE wishing to obtain best value, should send to
WISE AND RIDES, Covent Garden, W.C.

WANTED, large PALMS, TREE FERNS, and other large ORNAMENTAL FOLIAGED PLANTS, in EXCHANGE for ORCHIDS or other PLANTS. Send full particulars.
The LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, The Vineyard, Garston, Liverpool.

WANTED, Tall Feathery PALMS—Arecas, Seaforthias, and Kentias; DRACÆNAS and CYCAS REVOLUTA.—State size, number of leaves, &c., to
WILLIAM ICETON, Putney Park Lane, Putney, S.W.

Rhododendrons.
JOHN WATERER AND SONS, Bagshot, Surrey, are the Great Exhibitors of Hardy Scarlet and White RHODODENDRONS.
Their CATALOGUE is ready, and may be had on application.

EIGHTY THOUSAND CLEMATIS, in Pots, of all the finest Double and Single Varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants. Descriptive LIST on application.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

LILIUM AURATUM. — Good, plump, sound Bulbs, 6s., 9s., 12s., 18s., and 24s. per dozen; extra strong, 20s. and 42s. per dozen. All other good LILIES at equally low prices.
Mr. WILLIAM BULL'S Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

CHOICE NAMED TUBEROUS BEGONIAS. —Send for a CATALOGUE of all the best Double and Single varieties at fully one-third less in price than charged by other well-known firms. Can also supply Seedling Whites, fine strain, 6 for 4s. free; grand for greenhouse or bedding-out.
MORLEY AND CO., Preston.

HARDY RHODODENDRONS and AZALEAS.—The most extensive stock in the Kingdom of the finest hardy varieties known.
☞ The Rhododendrons in Rotten Row and the Botanic Gardens, Regent's Park, are supplied by
ANTHONY WATERER, Knap Hill Nursery, Woking, Surrey.

Myrobella.
PRUNUS MYROBALANA, or CHERRY PLUM.—The best stuff for Mending Old Fences or Making New Ones. Grows fast in poorest soils. Much stronger than Whitethorn. It is also an excellent Stock for the Plum. A sample hundred, 2 to 3 feet, sent on receipt of 6s., 50 for 3s. Full further particulars of
EWING AND CO., Sea View Nurseries, Havant, Hants.

The Choicest Specimens of Evergreen TREES and SHRUBS.
RICHARD SMITH AND CO. beg to announce that they have just published a little LIST in which they offer the above at prices practically within the reach of all, and they will be happy to send same free by post.
St. John's Nurseries, Worcester.

Strawberries a Specialty.
LOVEL'S STRAWBERRY PLANTS, 100, 2s. 6d.; 500, 10s.; 1000, 15s.
Sample and Pamphlet, 3d. Select LIST free.
W. LOVEL AND SON, Strawberry Growers, Driffield.

For Sale.
RASPBERRY CANES—the famous Carter's Prolific. These Canes can be planted with perfect safety to the end of March. Not less than 1000 Canes supplied. Apply to ALBERT BATH, Sevenoaks, Kent.

HAMPTON COURT BLACK HAMBURGH VINES.—Great Reduction in Price. A large number of Extra strong Fruiting Canes of the above, and all other leading varieties, at greatly reduced prices.
T. JACKSON AND SON, Nurseries, Kingston-on-Thames, and Royal Kitchen Gardens, Hampton Court.

Grape Vines and Strawberries (in pots).
FRANCIS R. KINGHORN offers very fine stocks of the above in all leading varieties, true to name. LIST and Prices on application.
Sheen Nurseries, Richmond, Surrey.

Mangel Wurzel and Turnip Seeds.
H. AND F. SHARPE are now prepared to make special offers of home-grown MANGEL WURZEL and TURNIP SEEDS, raised in 1886 from specially selected Bulbs. The quality is excellent and the prices are very low.
Seed Growing Establishment, Wisbech.

HENRY ORMSON AND CO., HORTICULTURAL BUILDERS and HOT-WATER ENGINEERS, Stanley Bridge, King's Road, London, S.W. Designs for Conservatories, Greenhouses, and Heating by Hot-water free on application. See large advertisement, Feb. 5, page 191.

SALES BY AUCTION.

Wednesday Next.

2000 SPLENDID BULBS of LILIUM AURATUM.

MESSRS. PROTHEROE AND MORRIS will include the above in their SALE on WEDNESDAY NEXT, March 9.

On view morning of Sale, and Catalogues had of the Auctioneers, 67 and 68, Cheapside, E.C.

Every Wednesday and Saturday.

SALES of CAMELLIAS, AZALEAS, PALMS, and other PLANTS in variety, from Belgium, and elsewhere; LILIUM AURATUM and many rare LILIES, also a collection of beautiful IRIS from Japan (see native drawings), 500 choice named Standard and Dwarf ROSES, FRUIT TREES, CARNATIONS, PICOTEES, English grown LILIES, and a great variety of hardy BULBS and PLANTS.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., every WEDNESDAY and SATURDAY, at half-past 12 o'Clock precisely each day.

On view morning of Sale, and Catalogues had.

Friday Next.

CŒLOGYNES.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, March 11, at half-past 12 o'Clock precisely, a grand importation of different CŒLOGYNES, very distinct and fine-looking, and probably quite new. The various species differ much both in bulb and habit, and come from hitherto unsearched districts in Upper Burmah. Amongst them is one mass (the only one found) with bulbs some 5 inches long, flat and broad—a most distinct specimen. The whole are in fine health and condition. Also DENDROBES in variety, from Burmah; MORMODES LUXATUM EBURNEUM, ONCIDIUM PACHYPHYLLUM, in flower; CATTLEYAS, CYPRIPEDIUMS, and MASDEVALLIAS of sorts, and many other choice and rare ORCHIDS.

Also a few CYPRIPEDIUMS and other ORCHIDS from the Continent.

On view morning of Sale, and Catalogues had.

Woodford, E.

Almost without reserve, Owner going abroad.

Small FREEHOLD NURSERY, suitable for a young beginner; also the STOCK and UTENSILS in Trade.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, The Nursery, Derby Road, Woodford, on MONDAY, March 14, at 1 o'Clock precisely, the FREEHOLD NURSERY, consisting of a Plot of Ground with 40 feet frontage to Derby Road, and three long Greenhouses, all well heated. Following the sale of the property, the whole of the STOCK will be offered in suitable lots, consisting of Ferns, Roses, Geraniums of sorts, Primulas, Begonias, Seeds, UTENSILS in Trade, &c.

May now be viewed. Catalogues may be had on the Premises; of Messrs. TERRELL AND ATKINSON, Solicitors, 33, Gracechurch Street, E.C.; and of the Auctioneer, 67 and 68, Cheapside, London, E.C., and Leytonstone.

Preliminary Notice.

The Downside COLLECTION of ORCHIDS.

Unusually IMPORTANT SALE of selected duplicate plants from this renowned Collection, consisting chiefly of examples matchless in point of rarity and culture, many being unique.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from Wm. Lee, Esq., to SELL by AUCTION, on the Premises, Downside, Leatherhead, on TUESDAY and WEDNESDAY, April 26 and 27, in consequence of the overcrowded state of the houses, a selected assortment of ESTABLISHED ORCHIDS, comprising probably the most valuable assemblage of plants ever offered in a single sale.

N.B.—It is proposed to at once Catalogue the plants, many of which are now coming into flower. Intending purchasers will thus be enabled to inspect the lots, note the varieties, and mark their Catalogues accordingly.

Cards to view the Collection may be obtained of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Monday Next.—(Sale, No. 7366.)

15,000 grand Bulbs of LILIUM AURATUM, and many other Lilies to name, just received from Japan, in the finest possible condition; 10 Cases of ARAUCARIA EXCELSA, as received; 7000 TUBEROSES from South Africa, 500 extra fine Clumps of LILY OF THE VALLEY, a great variety of Home-grown LILIES, and other BULBS and ROOTS.

MR. J. C. STEVENS will SELL the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY NEXT, March 7, at half-past 12 o'Clock precisely.

On view morning of Sale, and Catalogues had.

Wednesday and Saturday Next.

First-class Standard, Dwarf, and Climbing ROSES, including most of the leading varieties; FRUIT TREES, of sorts; Hardy Ornamental SHRUBS and CONIFERS, BORDER PLANTS, in quantity; LILIUMS, GLADIOLI, &c.

MR. J. C. STEVENS will SELL the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY and SATURDAY NEXT, March 9 and 12, at half-past 12 o'Clock precisely each day.

On view mornings of Sale, and Catalogues had.

Thursday Next—(Sale No. 7369).

ESTABLISHED ORCHIDS.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, March 10, at Half-past 12 o'Clock precisely:—A fine lot of ESTABLISHED ORCHIDS from private collections comprising Cypripedium Warneri, C. Spicerianum, C. candatum, Odontoglossum Pescatorei, and O. Alexandræ (many unflowered), Vanda tricolor Patersonii and Insignis, Aërides suavissimum, Lælia anceps alba, a variety of Dendrobes, Cattleyas, Masdevallias, Oncidiums, and other ORCHIDS.

On view morning of Sale, and Catalogues had.

Special Sale of Orchids in Flower and Bud.

MR. J. C. STEVENS begs to announce that his next Special Sale of ORCHIDS, in Flower and Bud, will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, March 16, and he will be glad if gentlemen desirous of entering plants for this sale will send particulars not later than Thursday next.

Matlock Moor and Matlock Bank Nurseries,

MATLOCK, DERBYSHIRE.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, AND OTHERS.

HIGHLY IMPORTANT and ATTRACTIVE SALE of NURSERY STOCK.

MESSRS. ELSE AND SON have received instructions from Mr. George Farnsworth to SELL by AUCTION, upon the above named Nurseries, without reserve, on TUESDAY and WEDNESDAY, March 8 and 9, including several Acres of Valuable NURSERY STOCK, comprising upwards of 250,000 transplanted and bushy Rhododendrons, in sizes up to 2½ feet; large quantities of Evergreen Privet, Laurels, Cupressus, Retinospora, Yews, Hollies, &c. Sale to commence at 11 o'Clock prompt.

Descriptive Catalogues may be obtained on application to the Auctioneers, Matlock Bridge; or from Mr. GEORGE FARNSWORTH, The Nursery, Matlock Bank, one week prior to sale.

Matlock Bank Nurseries are situated close to Rock Side Hydropathic Establishment, and about half a mile from the Matlock Bridge Railway Station.

Preliminary Notice.

PRIVATE COLLECTION of ORCHIDS for SALE.

THE LIVERPOOL HORTICULTURAL CO. (John Cowan), are pleased to announce that they are instructed by E. Harvey, Esq., of Riversdale, Aigburth, near Liverpool, to offer for SALE his valuable COLLECTION of ORCHIDS.

His collection is well known as one of the best in this part of the country; the plants are all in splendid condition, Mr. Harvey having devoted close personal attention to them for many years.

Rare and valuable varieties have constantly been added, and inferior varieties weeded out; an accurate description of each plant has been kept, and the catalogue description may therefore be depended upon.

Catalogues are being prepared, and may be had in a few days, post-free on application to the COMPANY, The Vineyard and Nurseries, Garston, near Liverpool.

FOR DISPOSAL,

MARCH 25, or after,

MR. LAING'S NURSERY, Twickenham.

Owing to the Death of Mr. LAING, this LONG-ESTABLISHED NURSERY, occupied by Mr. LAING for the last fifty years, with Lease, Goodwill and Stock of GREENHOUSES, PITS, SHRUBS, PLANTS, and IMPLEMENTS, for EARLY SALE. 5 minutes' walk from St. Margarets; 15 minutes' walk from Twickenham; 20 minutes' walk from Richmond. All Stations of the S. W. Railway, close to the new residential neighbourhood of St. Margarets, and ten minutes' walk from centres of Richmond and Twickenham towns respectively. As a Home Nursery, held with land at Teddington on Twickenham Common (as done by Mr. Laing), or as a Nursery for a London Shop, a Market Grower, or for an energetic man wishing to commence business with a long-established connection, the opportunity is unexceptional.

Apply to GEORGE PAUL, The Old Nurseries, Cheshunt.

TO BE DISPOSED OF.—A small NURSERY, SEED, and FLORIST BUSINESS, fully stocked; Glass Erections, heated with hot water. Rent very moderate. Good opening. No reasonable offer refused. Must be sold.

Apply, 60, Balaam Street, Plaistow, Essex.

Old-established Nursery Business for Sale.

FOR SALE by Private Bargain, as a Going Concern, the well-known NURSERY BUSINESS carried on at Bangholm, Ferry Road, Edinburgh, and held by the Lawson Seed and Nursery Company (Limited) for many years past. The business was previously successfully carried on by Messrs. Peter Lawson & Son. All as previously advertised in the *Scotsman* of 19th and 22d January, 1887.

It is considered that the present is a favourable opportunity for any Public or Private Company acquiring on advantageous terms an excellent Nursery Stock.

Full particulars as to terms of sale or transfer can be had by principals or their agents on application in writing to Messrs. CHIENE AND TAIT, C.A., 67, George Street, Edinburgh, the Liquidators of the Company; or to Messrs. MACKENZIE AND KERMACK, W.S., 9, Hill Street, Edinburgh, their Agents.

To Cut Flower Growers, Florists, &c.

TO BE SOLD IMMEDIATELY, as a going concern, the ENTIRE STOCK, at The Nursery, Sandy Lane, Chester, consisting of many thousands of double and single Narcissus, Gladiolus The Bride, Eucharis, Hybrid Gladioli. Dahlias, Lilies, &c., especially purchased and planted for the production of Cut Flowers. Three Acres of Ground, Two Greenhouses, Cottage. Rent, £25 per annum.

Apply to Mr. WILLIAM EVANS, Crypt Chambers, Chester.

TO BE DISPOSED OF, in consequence of ill-health, an old-established and genuine FLORIST'S and JOBBING BUSINESS. In same hands upwards of twenty years. All necessary Houses, Pits, and Plant for carrying on a good and profitable Trade. Every inspection solicited. Well stocked for the coming season.

For particulars, apply at the Victoria Nursery, Walham Road, Forest Hill, S.E.

TO BE SOLD, a small NURSERY and FLORIST BUSINESS, doing good Plant and Cut Flower Trade, capable of extension. For particulars, apply to

A. M., 126, Burlington Place, Crookes, Sheffield.

To Tomato, Cucumber, and Fern Growers.

TO BE SOLD or LET, on very advantageous terms, an ACRE of GROUND, with numerous Greenhouses, all well heated, and convenient house. Within easy distance of Covent Garden Market.

Full particulars and terms of Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, London, E.C.

Splendid Chance.

TO BE LET or SOLD, on easy terms, a good double-fronted DWELLING-HOUSE, GROUND, and Five large GLASS-HOUSES (some heated), near three stations, at Tottenham.

Apply, Mr. READ, 46, Lucerne Road, Highbury Park, N.

Kent, near Railway Station.

TO LET, a SMALL NURSERY, about ten miles from London.

C. E. B., *Gardeners' Chronicle* Office, 41, Wellington Street, W.C.

Fifty Nurseries, Market Gardens, Florist and Seed

BUSINESSES to be DISPOSED OF.

MESSRS. PROTHEROE AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obained, gratis, at 67 and 68, Cheapside, London, E.C.

Important Notice.

To Florists, Seedsmen, Horticultural Builders, &c.

PLANTS, FLOWERS, FRUITS and VEGETABLES a Specialty.

WM. J. WELCH begs to call particular attention to his productions for ILLUSTRATING BOOKS, MAGAZINES, CATALOGUES, and for ADVERTISING PURPOSES.

For Specimens see *Gardeners' Chronicle*, 1883 to 1886.

ADDRESS:—25, Wellington Street, Strand, London, W.C.

Landscape Gardening.

H. F. MALLER (of the firm of B. Maller & Sons), late Pupil of the Crystal Palace School of Landscape Gardening, is prepared to FURNISH PLANS, or undertake any kind of the above work.—61, High Street, Lewisham.

PEAT—LOAM—SAND.—50 Acres Light Brown PEAT, full of fibre, 9*s.* per yard, in truckloads. Yellow Fibrous LOAM, best in England), 10*s.* per ton, in truckloads. SILVER SAND, 10*s.* per ton, in truckloads.

BRINKWORTH AND SONS, Reading.

EAST LOTHIAN STOCK.—Extra choice strain, saved from 2-yr. old plants, specially grown for Seed. Purple, White, Scarlet, Crimson, and Wallflower-leaved White, price 1*s.*, 2*s.* 6*d.*, and 5*s.* per packet.

Priced CATALOGUE for 1887, post-free on application.

IRELAND AND THOMSON, Seed Merchants, 81, Princes Street, Edinburgh.

Bedding Begonias.

JOHN LAING AND CO. have a grand stock of Tubers, carefully and specially selected to colour for bedding from our outdoor beds last summer, three shades of crimson, orange-scarlet, magenta, pink, rose, scarlet, white, &c. Per dozen, post-free, 6*s.* Cultural Directions in CATALOGUE.

JOHN LAING AND CO., The Nurseries, Forest Hill, S.E.

To the Trade—20,000 Kentias..

W. ICETON has a very fine stock of the leading kinds of PALMS to offer reasonable.

Putney Park Lane, Putney, S.W.

SEAKALE PLANTS, strong, 40*s.* per 1000; Planting, good, 25*s.* per 1000. Dwarf ROSES, 20*s.* per 100. ASPARAGUS, 2-yr., 10*s.* per 1000; 3-yr., 15*s.* per 1000. All good quality, best money can buy. Cash with all orders.

R. LOCKE, Wrotham, Kent.

CŒLOGYNE CRISTATA.—Wanted, offers for twenty pans, over sixty good bulbs; also ten larger, 100 to 140 bulbs. Four large plants of ANTHURIUM SCHERZERIANUM, in 15-inch pots, good variety.

J. McNAIR, The Gardens, Ilam Hall, Ashbourne.

"Imperator" Potato.

PETER LAWSON AND SON (Limited), Edinburgh, are prepared to Book Orders for the "IMPERATOR" POTATO, as sent out by them, also other leading kinds. Prices upon application.

CYCAS REVOLUTA.—Warranted fresh and good, every seed will germinate. 100 seeds, 10*s.*, 1000 seeds, 95*s.*

DAMMANN AND CO., San Giovanni a Teduccio, near Naples.

FINE PYRAMID VICTORIA PLUMS and DAMSONS, 40*s.* per 100; RHODODENDRONS, fine hybrids, all colours, 1½ to 2 feet, 30*s.* per 100; strong bushy LAURELS, 10*s.* per 100; PLATANUS OCCIDENTALIS, 8 to 12 feet, £3 per 100.—W. JACKSON, Blakedown, Kidderminster.

Hertford Nurseries.

Established upwards of 100 years.

E. W. AND J. O. FRANCIS beg to announce that, having PURCHASED the above well-known BUSINESS (lately conducted by Francis Bros.) these old-established Nurseries will on and after JANUARY 28, 1887, be carried on by them under the old style of

E. P. FRANCIS AND CO.

The Nurseries, Hertford.—January 28, 1887.

SHRUBS and CONIFERÆ.—Laurustinus, 2 feet, bushy, 32*s.* per 100. Arbutus Unedo, 2 feet, 40*s.* per 100. Aucuba japonica, 2 to 2½ feet, 40*s.* per 100. Box, Tree, sorts, 1½ to 2 feet, 30*s.* per 100. Common Laurels, 2 feet, 10*s.* per 100. Colchic Laurels, 2 to 2½ feet, 16*s.* per 100. Grislienia littoralis, 2 feet, 35*s.* per 100. Sweet Bay, 1½ to 2 feet, 30*s.* per 100. Rhododendron ponticum, 1½ to 2 feet, 30*s.* per 100; ditto, 2 to 2½ feet, 40*s.* per 100, extra fine. Abies Douglasii, 2 to 3 feet, 30*s.* per 100; ditto, 3 to 4 feet, 40*s.* per 100; ditto, 4 to 5 feet, 70*s.* per 100, fine roots and well furnished. Araucaria imbricata, 2 to 2½ feet, 42*s.* per dozen; ditto, 3 to 3½ feet, 60*s.* per dozen. Cupressus Lawsonii, 1½ to 2 feet, 16*s.* per 100; ditto, 2 to 2½ feet, 20*s.* per 100; ditto, 3 to 4 feet, 50*s.* per 100. Cupressus erecta viridis, 1½ to 2 feet, 25*s.* per 100; ditto, 2 to 2½ feet, 40*s.* per 100. Retinospora plumosa, 1½ to 2 feet, 30*s.* per 100; ditto, 2 to 2½ feet, 40*s.* per 100, extra. Picea Nordmanniana, 2 feet, 35*s.* per 100. Thuia Lobbii, 2 to 2½ feet, 25*s.* per 100. Special offer by the 1000 for smaller sizes. GARLIES MITCHELL, Nurseryman, Stranraer.

S. SHEPPERSON,

FLORIST and SEEDSMAN,

PROSPECT HOUSE, BELPER, DERBYSHIRE,

Begs to inform the readers of this Paper that he is prepared to execute orders for the following Plants, all of which are of the very finest possible strains that money can buy. They have all been grown on the Derbyshire Hills, and are therefore very hardy, strong, and warranted to succeed and bloom well. All carriage free for cash with order.

DESCRIPTIVE LIST of Florist Flowers 4d. stamps, or free to customers.

PANSIES.—A specialty, probably the best collection in England; the cream only of the most noted raisers, the latest new sorts, and the winners at all the great shows. Good plants, correctly named, show or fancy. Twelve for 3*s*., twenty-five for 5*s*. 6*d*., 100 varieties for 20*s*. Postal order free.

HOLLYHOCKS.—Chater's very finest and most select strains. Twelve varieties for 2*s*. 6*d*., six for 1*s*. 6*d*.; six extra strong for 2*s*. Postal order free.

CANTERBURY BELLS.—Unrivalled collection, grand new colours; double and single telescopes, candelabrum, and other new forms. Twelve good plants, to bloom well, for 1*s*. Postal order free.

CHRYSANTHEMUMS.—A specialty. The best and most distinct varieties, large-flowered, incurved, reflexed, Japanese, early and late bloomers, pompons, &c., including the grand new and distinct forms by Lemoine and other raisers. Twelve distinct varieties, named, well rooted plants, 2*s*.; twenty-six for 4*s*., free.

CARNATIONS.—Grenadin, the new German scarlet; a fine decorative and distinct variety. Early and free bloomer. Twelve for 1*s*. 6*d*,, six for 1*s*., free.

PHLOXES.—Unrivalled collection, early and late varieties, including the latest new Continental and Scotch named varieties. Twelve distinct sorts, 3*s*., six for 1*s*. 8*d*., free.

CARNATIONS, PICOTEES, and CLOVES.—Strong 2-yr. old plants, from finest Show flowers only; will give a mass of bloom. Twelve beautiful varieties for 2*s*. 6*d*., six for 1*s*. 6*d*., free.

POLYANTHUS.—The finest strain grown; fine large trusses and blooms, and splendid colours. Twelve for 1*s*., twenty-six for 2*s*., free.

PINKS.—Beautiful pure white garden, deliciously scented. Good strong plants, to bloom well, six for 1*s*., twelve for 1*s*. 6*d*., free.

CARNATIONS, PICOTEES, and CLOVES.—Beautiful self, striped, and spotted varieties, sweetly scented, all strong well rooted layers. Twelve distinct sorts, named, 4*s*., free.

GEUM.—The new double scarlet, equal to a double Geranium, quite hardy, free bloomer. Twelve for 1*s*., twenty-five for 2*s*,, free,

AURICULA.—Pure snow-white, one of the most beautiful hardy spring flowering plants in cultivation. Two for 1*s*., free.

SWEET WILLIAMS.—Auricula-eyed; Hunt's improved, Barlow's strain, double varieties, extra dark and other fine strains. Good blooming plants, 1s. per dozen, free.

FOXGLOVES.—Gloxinia-flowered; Dean's grand new large spotted varieties; very fine. Twelve for 1*s*. 6*d*., six for 1*s*., free.

DELPHINIUMS.—Distinct hardy border flowers. Six good blooming plants for 1*s*. 6*d*., twelve for 2*s*. 6*d*., free.

AURICULA.—The old-fashioned single yellow, most deliciously scented, soon bloom. Six for 2*s*., two for 1*s*., free.

POLYANTHUS, Novelty; beautiful new white. Strong plants, full of bloom-buds. Twelve for 1*s*. 6*d*., six for 1*s*., free.

COLLECTION of twelve HARDY BORDER PLANTS, distinct and very fine varieties, 2*s*., free.

WALLFLOWERS.—Double German, Cannell's Bright Maroon, Ware's Brilliant Red, Crawford Beauty, Carter's Old Gold, Belvoir Castle, Harbinger, and Covent Garden Dark. 1*s*. per dozen, free.

STRAWBERRY PLANTS.—Selected crowns, transplanted, Black Prince, Improved Brown's Wonder, Alpha, Pauline, Sabreur, Vicomtesse H. de Thury, Duke of Edinburgh, and other extra sorts. 3*s*. per 100, free.

STRAWBERRY King of the Earlies, Mr. Laxton, grand new early variety, 5*s*. per 100, free. Also The Captain (Laxton), 1*s*. per dozen, free.

S. SHEPPERSON,

Florist and Seedsman,

PROSPECT HOUSE, BELPER, DERBYSHIRE.

To the Trade.

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The Long and Handsome variety that takes the

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MIGNONETTE, New Giant	10	0	1	0
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Complete collections for small Gardens, 10*s*. 6*d*., 21*s*., 31*s*. 6*d*., 42*s*., and upwards. All seeds carriage free.

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Bags containing:—	1 cwt.	½ cwt.	¼ cwt.
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LAING'S BEGONIA SEED.—Awarded Two Gold Medals. From Prize Plants, in sealed packets. Choice mixed, from single varieties, 1*s.*, 2*s.* 6*d.*, and 5*s.* per packet; double varieties, 2*s.* 6*d.*, 3*s.* 6*d.*, and 5*s.* per packet. Collections—12 named varieties, separate, 5*s.* 6*d.*; 6 ditto, 3*s.* Order direct from us, to procure the genuine seed.

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SMALL SHRUBS and CONIFERÆ:—Cupressus Lawsoni, 12 to 15 inches, transplanted, 60*s.* per 1000; C. erecta viridis, 1 to 1½ foot, extra, 12*s.* per 100; C. stricta, 10 to 12 inches, 12*s.* per 100; C. gracilis, 10 inches, 12*s.* per 100; Cedrus Deodara, 2-yr., 50*s.* per 1000; Thuia Lobbii, 9 to 12 inches, 50*s.* per 1000; T. Ellwangeriana, 9 to 10 inches, 12*s.* per 100; Thuiopsis dolobrata, 9 to 10 inches, transplanted, 10*s.* per 100; Retinospora plumosa, 12 to 15 inches, bushy, 12*s.* per 100; R. squarrosa, 9 inches, transplanted, 10*s.* per 100; Araucaria imbricata, 8 inches, fine, 40*s.* per 100; Pinus Cembra, 1-yr., 5*s.* per 1000; P. excelsa, 2-yr. 1-yr. transplanted, 10*s.* per 100; P. insignis, 1-yr. transplanted, 6*s.* per 100; P. Nordmanniana, 1-yr., 25*s.* per 1000; Abies Douglasii, 6 inches, 6*s.* per 100; ditto, 9 to 12 inches, 12*s.* per 100; English Yew, 6 to 9 inches, 8*s.* per 100; American Arborvitæ, 9 to 10 inches, 50*s.* per 1000; Box, Tree, 9 to 10 inches, 40*s.* per 1000; Sweet Bay, 9 to 12 inches, 7*s.* 6*d.* per 100; Evergreen Oaks, 2-yr., fine, 6*s.* per 100; Laurustinus, 8 inches, 8*s.* per 100; Portugal Laurels, transplanted, 6 to 8 inches, 60*s.* per 1000; Common Laurels, 2-yr., 20*s.* per 1000.

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TYNAN'S "EXCELSIOR" MIXTURES.—Primula, Calceolaria, Cineraria, Cyclamen, Begonia, Gloxinia, and Petunia. Each contains the very newest and best varieties out. Cannot be beaten. Small packets, 1*s.* each variety; larger packets, 2*s.* 6*d.* each variety.

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CLEARANCE SALE of healthy PALMS for Table and Conservatory Decoration.—LATANIA BORBONICA, SEAFORTHIA ELEGANS, and PHŒNIX RECLINATA, 12 inches high, 6*d.* each, 4*s.* per dozen, 25*s.* per 100; same kinds, 20 inches high, 1*s.* 6*d.* each, 6 for 8*s.*, 12 for 14*s.* Packages and parcels post-free.

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ALDER, 3 to 4 feet, 20*s.* per 1000; ASH, 2 to 3 feet, 16*s.* per 1000; ditto, 1½ to 2 feet, 12*s.* 6*d.* per 1000. BIRCH, 2 to 3 feet, 20*s.* per 1000. SPANISH CHESTNUT, 2 feet, 18*s.* per 1000. ELM, 2 to 3 feet, 16*s.* per 1000; ditto, 3 to 4 feet, 20*s.* per 1000. LARCH, 1 to 1½ foot, 12*s.* 6*d.* per 1000; ditto, 1½ to 2 feet, 14*s.* per 1000; ditto, 2 to 2½ feet, 16*s.* per 1000; ditto, 2½ to 3 feet, 18*s.* per 1000; ditto, 3 to 4 feet, 22*s.* per 1000; ditto, 5 to 6 feet, 35*s.* per 1000. SPRUCE FIR, 1 to 1½ foot, 10*s.* per 1000; ditto, 1½ to 2 feet, 12*s.* per 1000; ditto, 2 to 2½ feet, 16*s.* per 1000: ditto, 3 feet, bushy, 10*s.* per 100. SCOTCH FIR, 1 to 1½ foot, 10*s.* per 1000; ditto, 2 to 2½ feet, 16*s.* per 1000. HAZELS, 3 feet, 20*s.* per 1000. OAKS, 2 to 3 feet, 17*s.* 6*d.* per 1000. SYCAMORE, 2 to 3 feet, 16*s.* per 1000; ditto, 3 to 4 feet, 20*s.* per 1000. THORNS, 1½ to 2 feet, 14*s.* per 1000. ditto, 2 to 2½ feet, 16*s.* per 1000; ditto, 3 feet, 20*s.* per 1000. PRIVETS, OVALIFOLIUM, 2 to 2½ feet, 30*s.* per 1000; ditto, 4 feet, extra bushy, 12*s.* per 100. BEECH, 1½ to 2 feet, 16*s.* per 100); ditto, 2 to 2½ feet, 18*s.* per 1000. MYROBALAN PLUM, 2 feet, 20*s.* per 1000. Special offer by 50,000 and 100,000.

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GOLD-LEAF Crystal Palace Gem, 10*s.* per 100; Happy Thought, 12*s.* per 100.

BRONZE McMahon, Black Douglas. The Czar, the best bedders, 15*s.* per 100.;

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TROPÆOLUM Vesuvius, 8*s.* per 100; Coccinea elegans, best dwarf scarlet, 10*s.* per 100.

FUCHSIAS in twelve good named sorts, 8*s.* per 100.

PELARGONIUMS, Show and Decorative, from single pots, good, 20*s.* per 100, 3*s.* per dozen.

NOTE.—Not fewer than twenty-five of any one sort supplied at above rate. Packing included. Terms Cash.

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CARTERS' LEVIATHAN.

Pods of this remarkable Bean have been grown 21 inches in length.

Price, per Pint, 2*s.* 6*d.*

Post-free, 2*s.* 9*d.*

Seedsmen by Royal Warrants to H.M. the Queen and H.R.H. the Prince of Wales,

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SIMPLE INSTRUCTIONS, by which an abundance can be insured of delicious MUSHROOMS. See Seed LIST, free.

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OLD-FASHIONED YEW HEDGES, to harmonise with and give a charm to the prevailing style of architecture.

Well-rooted bushy Plants, 1½ to 2 feet, 6*s.* per dozen, 35*s.* per 100.
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The above having been frequently transplanted are in perfect order for removal. Prices of larger plants on application, as also descriptive LIST of other stock suitable for Evergreen Hedges, Blinds, &c., such as HOLLIES, CYPRESSES, JUNIPERS, THUIA LOBBII, LAURELS, PRIVET, THUIOPSIS, &c.

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PRIMROSES (Double varieties).—Cloth of Gold, 18*s.*; Crimson, 18*s.*; Crousii, 18*s.*; Lilac, 2*s.*; Purple, 6*s.*; Purple-crimson, 6*s.*; Platypetala, 6*s.*; Red, 4*s.*; White, 2*s.*; Early Yellow, 4*s.*; Late Yellow, 2*s.* per dozen. Single White, 2*s.*; Single Yellow, 1*s.*; Single Crimson, 6*s.*; Single, in variety, 1*s.* per dozen.

AURICULA, Alpine, 6*s.*; Border varieties, 1*s.*; free large flowering varieties, 4*s.*; Yellow, 1*s.*; Purple, 1*s.*; Green Edged, 3*s.*; White Edged, 3*s.*; Grand Turk, 18*s.*; Double Yellow, 18*s.*; Double Purple, 30*s.* per dozen.

POLYANTHUS, Gold-laced, 2*s.*; Border varieties, 1*s.*; Giant White, 3*s.*; Giant Yellow, 3*s.*; Giant, in variety, 3*s.*; Double Black, 6*s.*; Hose-in-hose, in variety, 2*s.* per dozen.

PRIMULA, cashmiriana, 6*s.*; denticulata, 3*s.*; farinosa, 6*s.*; japonica, 4*s.*; Munroi, 4*s.*; nivalis, 2*s.*; pulcherrima, 9*s.*; rosea, 6*s.*; Sieboldi, 2*s.*; spectabilis, 6*s.*; viscosa, 6*s.* per dozen.

One plant of each, in 50 distinct varieties, carriage paid, for 25*s.* Cash with order.

MORRISON BROTHERS, Nurseries, Aberdeen.

ANDRE LEROY'S Nurseries at Angers, France, the largest and richest in Europe in Collections of FRUIT and ORNAMENTAL TREES, SHRUBS, CAMELLIAS, ROSES, SEEDLINGS, STOCK FRUIT TREES, &c. CATALOGUES sent on application. Freight from Angers to London is very moderate. Medal of Honour at the Universal Exhibition at Paris in 1878.

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100 DECIDUOUS SHRUBS in 50 distinct varieties, for 22*s.*

100 EVERGREEN SHRUBS, in 50 distinct varieties, for 32*s.*

100 CONIFERS, in 50 distinct varieties, for 52*s.*

All or any of the above, or half the number of each at half price, sent package free and carriage paid to Leith, Newcastle, Hull, or London, for cash with order.

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BEGONIA SEED.—Box's Jubilee varieties, choicest from latest prize singles, per packet, 1*s.* and 2*s.* 6*d*; double, the most reliable, very special, per packet, 2*s.* 6*d.* and 5*s*; very extra pure double white, per packet, 5*s.* and 10*s.* Sow now. See other Advertisement of Tubers.

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PRINCE of WALES RASPBERRY, in good canes, 7*s.* per 100; CHAMPAGNE RHUBARB, 6*s.* per dozen; true White FORGET-ME-NOTS, 4*s.* per dozen.

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ECONOMY and EXHIBITION. ABUNDANCE PEA: height 2 feet (9*d.* per pint, carriage paid). When harvesting I have counted over eighty pods on a single plant of Abundance.

DUKE of ALBANY PEA, for Exhibition (1*s.* per pint, carriage paid).

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Finest Quality, Extra Cheap.

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CAMELLIAS, full of flower-buds, 18*s.*, 24*s.*, to 36*s.* per dozen; specimens, 5*s.* to 15*s.* each.

RHODODENDRONS, finest named, 18*s.* to 30*s.* per dozen.

DEUTZIA GRACILIS, extra strong, 6*s.* per dozen.

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LILY of the VALLEY, extra strong Berlin Crowns, 6*s.* per 100.

TUBEROSES, Double African and American Pearl. Largest and cheapest stock in the Trade. See Special LIST. Trade Supplied.

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RICHARD SMITH AND CO., Nurserymen, Worcester.

BEGONIA TUBERS.—Box's Jubilee varieties, unequalled quality, choicest singles, mixed, 4*s.* per dozen; 7 separate colours, per dozen, 6*s.*; 10 separate colours, per dozen, 9*s.* Doubles, 6 distinct colours, 12*s.*, 18*s.*, 24*s.*, and 30*s.* per dozen. Free by post. See other Advertisement of Seed.

J. R. BOX (Laing's late partner), Nurseryman, Croydon.

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H. AND F. SHARPE are prepared to make very advantageous offers of their fine selected stocks of SEED POTATOS to purchasers of a quantity. Their SPECIAL PRICED LIST comprises all the best and most productive varieties in cultivation.

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FRUIT TREES.—Standard two-year and Maiden PLUMS, Standard two-year and Farleigh DAMSONS, Dwarf-trained PEACHES, APRICOTS, and Morello CHERRIES, &c. One-year Seedling CRAB, 3*s.* per 1000; if 20,000 taken, 2*s.* 6*d.* A few thousands of Brussels, Brompton, and Common PLUM STOCKS. Price on application to

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ROBERT NEAL begs to call the attention of Gentlemen, Builders, and others who intend planting this season, to his stock of FRUIT, FOREST, and ORNAMENTAL TREES, SHRUBS, ROSES, &c., which are in fine condition for removal, and comprise especially those kinds which are most suitable for Town Planting. Free delivery in own vans within a distance of six miles.

CATALOGUES on application.

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CYMBIDIUM LOWIANUM.

HUGH LOW & CO.

Have received extensive importations of the above-named, much admired Orchid, in the finest possible condition, amply provided with young growths, and varying in size from small plants with three bulbs to masses measuring 2 to 3 feet in circumference. On sale at extremely low prices. Also DENDROBIUMS in variety, in quantity. Inspection invited.

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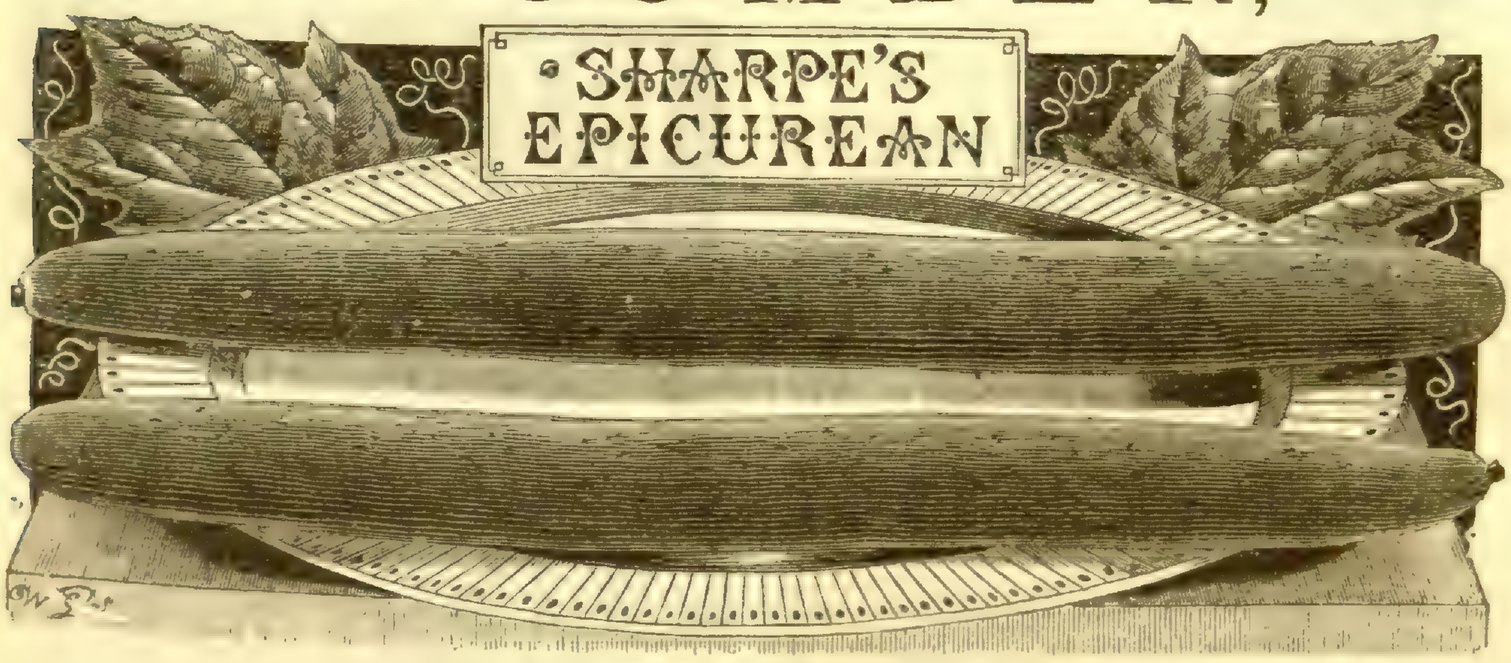

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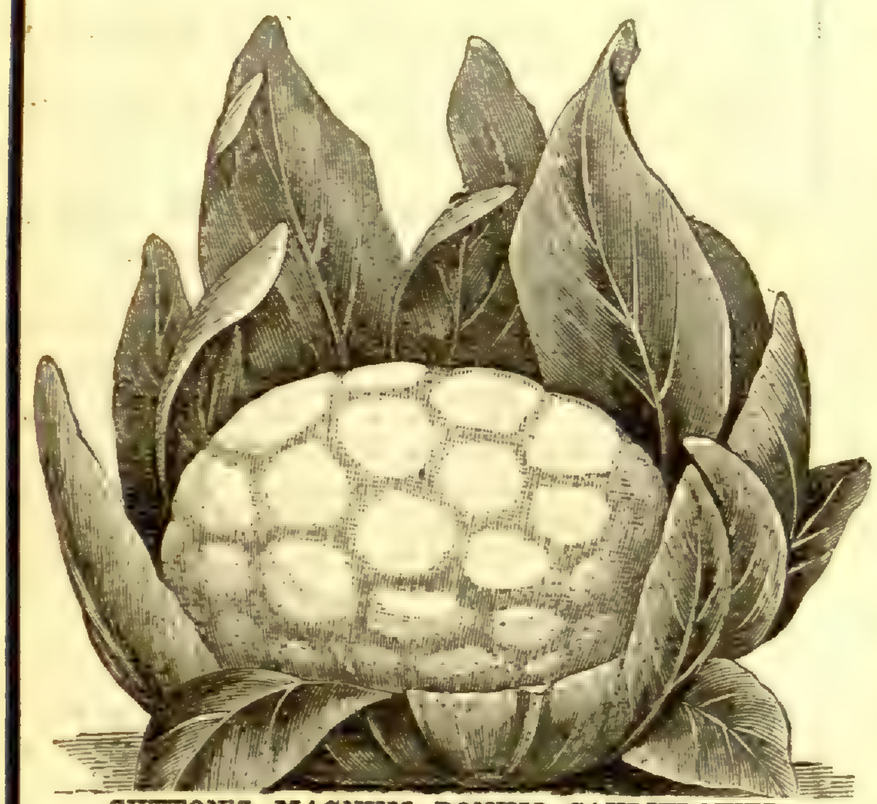

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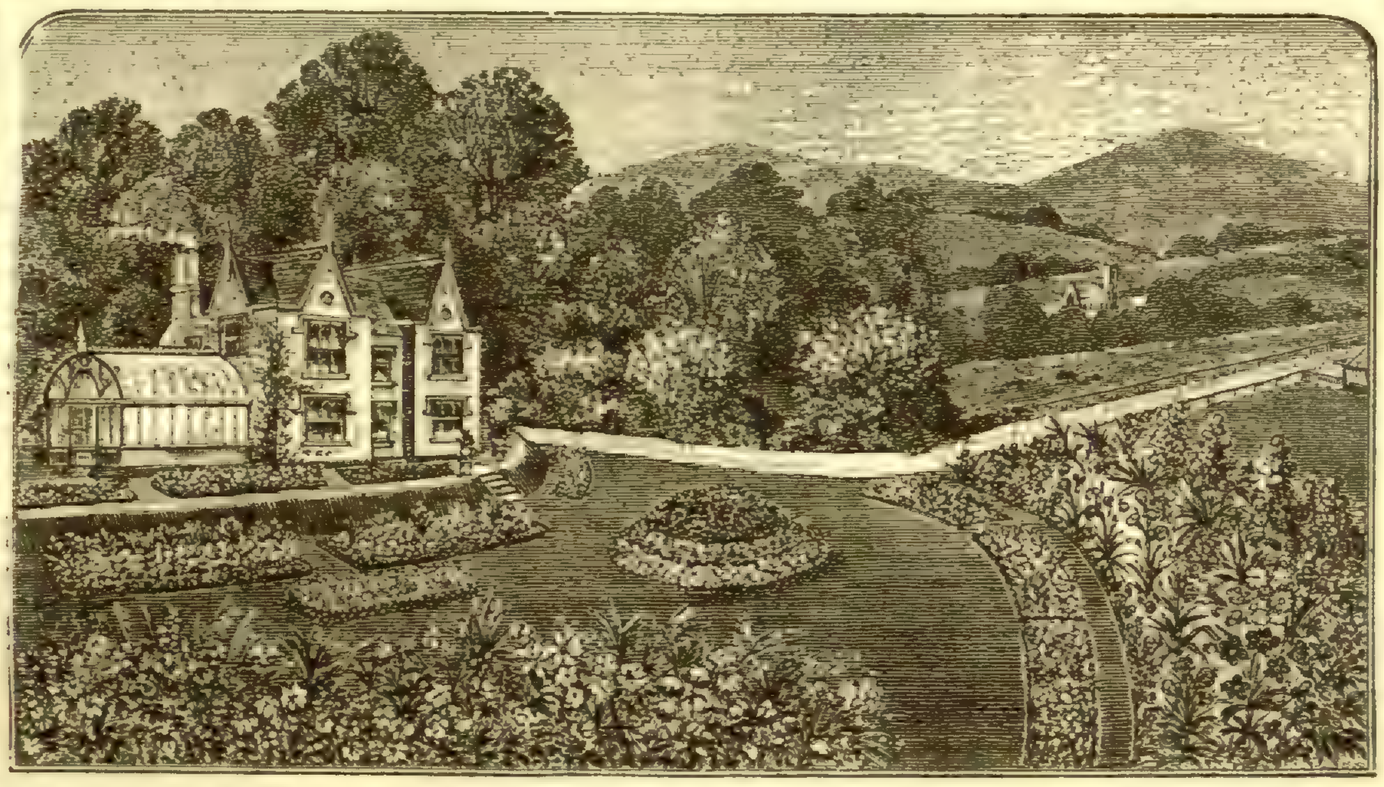

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As a Supplement to the "GARDENERS' CHRONICLE" for next week, March 12, *will be published an Ink-Photograph of A GROUP OF CANNAS, AT EUSTON HALL, THETFORD.*

THE

Gardeners' Chronicle.

SATURDAY, MARCH 5, 1887.

WONDERFUL PLANTS.

MANY of our readers will remember the figure in Gerard's *Herbal* of the Goose-tree, which was also known as the Barnacle-tree; the shape or form of the barnacle is well represented, and above it is a portrait of a very self-possessed duck. In a work published by Pius II., late in the fifteenth century, it is stated that on the banks of a river in Scotland a tree grew which produced fruits resembling ducks, which, when fully ripe, fell on to the bank or into the water, the former of which died and the latter immediately changed into ducks and flew away. Another old writer, referring to this tree, says:—"In Scotland we found trees which produce fruit rolled up in leaves, and this, in due time falling into water which it overhangs, is converted into a living bird, and hence the tree is called the Goose-tree." Gerard seems to have had a strong belief in the Goose-tree, and gives a long account of it, wherein he says that a kind of "spume or froth" is found on broken pieces of shipwreck that are cast up, and that this spume "breedeth unto certaine shells in shape like to those of the muskle, but sharper pointed, and of a whitish colour, wherein is contained a thing in forme like a lace of silke finely woven, as it were, together, of a whitish colour; one end whereof is fastened unto the inside of the shell, even as the fish of oisters and muskles are; the other end is made fast unto the belly of a rude mass or lumpe, which in time cometh to the shape and forme of a bird. When it is perfectly formed the shell gapeth open, and the first thing that appeareth is the aforesaid lace or string, next come the legs of the bird hanging out, and as it groweth greater it openeth the shell by degrees till at length it is all come forth and hangeth only by the bill; in short space after it cometh to full maturitie and falleth into the sea, where it gathereth feathers and groweth to a fowle bigger than a mallard and lesser than a goose, having blacke legs, and bill or beake and feathers blacke, and white spotted in such a manner as is our magpie, called in some places a pie-annet, which the people of Lancashire call by no other name than the goose: which place

aforesaid and all those parts adjoining do so much abound therewith that one of the best is bought for 3*d*. For the truth hereof, if any doubt, may it please them to repaire unto me, and I shall satisfie them by the testimonie of good witnesses."

Bauhin puts rather a different complexion on the habits of the Goose-tree, from other writers, inasmuch as he says that if the leaves fall on the land they become birds, and if in the water they become fishes. Without attempting to repeat what has been said by other ancient writers on the Goose-tree it will suffice to point out that they vary in their statements as to the manner of the production of these geese, for while one says that if tree stems that have been in the sea some time and cast on shore be split open they will be found full of geese in different stages of growth; another refers the origin of the birds to drops of turpentine on the branches of Fir trees.

Unfortunately for the sake of science, as well as of commerce, the scientific name of the Goose-tree remains unknown.

The Cow-tree.

Not many years since a writer in one of the daily papers seriously suggested the extended cultivation in the backyards of London and other large towns of the Cow-tree of Venezuela (Brosimum Galactodendron), the milk of which is obtained by incisions made in the trunk and closely resembles cow's milk, being wholesome, nourishing, and agreeable to the taste. The writer, however, forgot, or was not, perhaps, aware, that tropical trees were scarcely suited for cultivation in the open air of our climate, especially in the backyards of crowded towns, so that the acclimatisation of the Cow-tree and the Goose-tree is probably as far off as ever.

The Stone-tree.

Another remarkable tree, about which little or nothing more is known at the present time than was known to Gerard, is described by him as the Stone-tree, and which was considered one of the wonders of England, the tree having been seen by him in Warwickshire. He considers the hardness of the wood due to the action of water, and says he brought a bough of the tree to London, which, when he "had broken in pieces, therein might be seene that the pith and all the rest was turned into stones, still remaining the same shape and fashion that they were of before they were in the water."

Dripping Trees.

Records of trees and other plants that distil or exude water are by no means uncommon. Here is a description by Hermannus Nicolaus, as given by Bishoy Fleetwood, of what he calls the Distillatory Plant. He says:—"What most surprises me is the delicious nectar with which it has often supplied me in so great abundance to refresh me when I was thirsty to death, and unsufferably uneasy; but the greatest wonder of it is the little purse, or, if you will, a small vessel, as long and as big as the little finger, that is at the end of each leaf. It opens and shuts with a little lid that is fastened to the top of it. These little purses are full of a cool, sweet, clean cordial and very agreeable water. The kindness this liquor has done me when I have been parched up with thirst, makes me always think of it with pleasure. One plant yields enough to refresh and quench the thirst of a man who is very dry. The plant attracts by its roots the moisture of the earth, which the sun by his heat rarifies and raises up through the stem and the branches into the leaves, when it filtates itself to drop into the little recipients that are at the end of them. This delicious sap remains in these little vessels till it is drawn out, and it must be observed that they continue close shut till the liquor be well concocted and digested, and open of themselves when the juice is good to drink."

Whether or not this tree is identical with that which is now known as the Rain-tree, which attracted some attention a few years since, in consequence of the tree exuding moisture from its leaves to such an extent as to completely wet the ground beneath, is a question that cannot be decided. Our modern Rain tree has the advantage, however, of being scientifically known, and is the Calliandra Saman, a native of the West Indies and South America. The moisture which this tree produces is caused by "multitudes of Cicadas sucking the juices of the tender young branches and leaves, and squirting forth slender streams of limpid fluid." The tree has been introduced of late years into India and other tropical countries.

The Lamb-tree.

Another well-known plant is the Barometz or Vegetable Lamb. It was said by early travellers to grow on elevated plains of considerable extent in countries east of the Volga. It was said to grow about 3 feet high in the form of a lamb, having feet, hoofs, head, and ears complete, "covered with the thinnest bark, which is taken off and used by the inhabitants for the protection of their heads. They say that the inner pulp resembles lobster flesh, and that blood flows from it when it is wounded." The stem rose direct from the root, and was surmounted by the lamb, which turned round and bent to the herbage for its food; and when the grass failed the lamb shrivelled up and pined away. This wonderful plant has in more recent times been proved to be a Fern—the Cibotium Barometz, a native of China and Tartary, the decumbent caudex of which is densely covered with long light brown silky hairs, which give to it the appearance of a wool-clad animal and to make this appearance more complete the natives, turn the woolly stipes upside down and cut away all the fronds but four, which are left to form the legs.

The Oyster-tree.

The question whether oysters grew on trees seems to have exercised the minds of our forefathers. Fleetwood states on the authority of Dutertre, that at Guadaloupe oysters grow on the branches of trees. They were described as being about the size of "the little English oysters," namely, about the size of a crown piece. "They stick to the branches that hang in the water of a tree called Paretuvier. No doubt the seed of the oysters, which is shed in the tree when they spawn, cleaves to the branches, so that the oysters form themselves there and grow bigger in process of time, and by their weight bend down the branches into the sea, and these are refreshed twice a day by the flux and reflux of it." It has been suggested, with very good reason, that these oyster-bearing trees may have been Mangroves (Rhizophora mucronata), a tree of some 15 feet or more high, growing in swampy situations or on muddy shores in tropical countries, and throwing out numerous roots from the lower part of the stem, which, though covered at high tides, are left exposed when the tide is low. Upon these roots oysters and other shell fish attach themselves, which might have given rise to the assertion of oysters growing on trees.

Fireproof Trees.

In the *Gardeners' Chronicle* for September 18 last, p. 360, a paragraph appeared describing a species of Rhopala, said to be absolutely indestructible by fire in large districts where the dry pastures and bush are burnt twice a year. The advantages of such a tree must be very great, and no doubt it will become largely in demand for introduction into dry, arid districts. It is described as a species of Rhopala.

The indestructible character of some trees under the influence of fire has been recorded by early writers, and Folkard, in his *Plant Lore, Legends and Lyrics*, says, "There are some trees that must have fire to nourish them. Methodius says that he saw on the top of the mountains Gheschidago (the Olympus of the ancients), near the city of Bursa, in Natolia, a lofty tree whose roots were spread amidst the fire that issues from the vents of the earth, but whose leafy and luxuriant boughs spread their shade around, in scorn of the flames in the midst of which it grew." "This vegetable salamander," he continues, "finds its equal in a plant described by Nieuhoff as growing in rocky and stony places in the kingdom of Tangu in Tartary. This extraordinary plant cannot be either ignited or consumed by fire, for although it becomes red hot, on account of the heat becomes glowing red in the fire, yet so soon as the heat is removed, it grows cold and regains its former appearance; in water, however, this plant is wont to become quite putrid." Of a nature somewhat akin to these fire-loving plants must be the Japanese Palm described by A. Montanus. This tree is said to shun moisture to such an extent that "if its trunk be in the least wet it at once pines away and perishes as though it had been poisoned. However, if this arid tree be taken up by the roots, thoroughly dried in the sun and replanted with sand and iron filings around it, it will once more flourish and become covered with new branches and leaves, provided that so soon as it has been replanted the old leaves are cut off with an iron instrument and fastened to the trunk."

These notes remind us of some remarks in a recent Government report from China, where the writer describes a remarkable vegetable fibre which was used for making cloths that were absolutely uninjured by fire, so that instead of washing them when they became dirty they were put into a fierce fire to burn the dirt out. This extraordinary fibre, however, turned out to be asbestos.

In the light of modern science, notwithstanding the occasional appearance in the popular Press of accounts of trees with extraordinary, or even ridiculous habits, there is but little chance of the discovery of such wonders as our forefathers rejoiced in, at any rate they do not remain long before their history is fully known. There is no doubt, for instance, that if the New Zealand Sheep plants (Raoulia eximia and R. mammillaris) had been known to the ancients they would have been invested with some very remarkable properties. Again, if the carnivorous plants of our day had attracted the attention of herbalists or naturalists of two or three centuries ago much more capital would undoubtedly have been made out of them. The fact is, the age has passed for the discovery of new Upas-trees, nevertheless the literature that has been left us by early chroniclers on these subjects is of great interest and value. *John R. Jackson, Curator, Museum, Royal Gardens, Kew.*

Plants New or Noteworthy.

Lælia anceps Stella, *Rchb. f.*

This very fine variety was imported by Mr. F. Sander with Lælia anceps Schrœderiana. I feel quite surprised to find, finally, that only the last was described in *Gardeners' Chronicle*, 1885, March 15. Stella has long and narrow bulbs, and comparatively narrow leaves. The flowers are very large; sepals and petals stellate, pure white. The side laciniæ of the lip are remarkably curved, porrect, and angled in the numerous wild specimens I have to thank Mr. Sander for, when the garden flowers do not show this. The mid-lacinia, however, is quite constant, long, narrower at the base, dilated, and often emarginate at the top. Disc of the lip and part of base of the central lobe orange. Numerous broad nerves, of a dark red colour radiate on the inner side of the side-lobes. The brilliant flower was compared in my original description with that of the variety Sanderiana, whose character depends on two mauve blotches on the disc of the anterior lacinia, thus approaching Dawsoni. A very fine inflorescence of Stella, sent by Mr. Harry Veitch, kindly given by Lady Howard de Walden, is quite like Stella; yet the two basilar flowers show on one, the lowest two very small mauve spots on the disc of the mid-lacinia, like the great dashes of a good Sanderiana. Such curious things were sometimes seen and described by myself in Odontoglossum.

Stella is now sometimes called Lælia anceps Williamsii, Sander. I have never seen this plant

myself, and yet by lucky circumstances I feel enabled to speak about it as if I had seen it. To begin with, I have before me the representation in the *Orchid Album*, iv., 190, June 1885; a fine sketch in colour, presented me by Mr. Day, is at hand; finally, I have had at several times the very same description of it by Mr. Sander from memory, and lately in a letter. According to Mr. Day it was sold at Messrs. Stevens' by Mr. Sander in February, 1884, and bought by Mr. Williams. Mr. Williams informs me he has disposed of all the descendants of his plant, the single one Mr. F. Sander has ever had. I would feel very thankful for an authentic record of this. It stands very near anceps Schrœderiana in its flower, showing a similar noble shape, the same colour, and a broad anterior lacinia to the lip. The stripes on the side laciniæ of the lip are far more numerous and much broader. This is the one mark. The other is found in the very short plump bulbs. I have a certain hope that the plant is to be found with the excellent orchidist, Herr Consul Kienast Zölly, of Hirslander, Zurich, who imported the glorious Lælia anceps. I had a wild grown flower from this gentleman that I then named with doubt as a broadly striped Schrœderiana. I did not know the Williamsi, and my excellent correspondent gave me no information about bulbs. *H. G. Rchb. f.*

Odontoglossum × Staurastrum, *nov.* ×.

This may be compared to Odontoglossum Lindleyanum, but its sepals and petals are broader. Their colour is a light yellowish-green, with a number of large square sepia-brown blotches, four of which stand free on the lateral sepals, and the unequal sepals and petals have them cohering together. The lip has its long stalk and a three-lobed blade, the side-lobes are obtusangled, mid-lobe ligulate-acute. Some sulci form a few inconspicuous blunt obtuse keels, the inner ones of which ascend into rhombic serrate lamellæ, whilst the lateral ones stand higher and are smaller, narrower, triangular-aristate. The chief colour of the upper half and stalks of the apex and keels is white. The major part of the mid-lacinia is dark sepia-brown, while a lighter colour is that of the anterior parts of the side-laciniæ. There are mauve stripes between the very low keels and some mauve spots on the sides of the stalk of the lip. The column is nearly that of Odontoglossum Lindleyanum. Side wings near the foveas narrow, and acute at the top. The leaves are broader than in Odontoglossum Lindleyanum. The pseudobulb is round, like that of Odontoglossum tripudians.

This very interesting specimen was kindly sent me by Dr. Alexander Wallace, New Bulb Company, Lion Walk, Colchester. It is stated to have been imported from the United States of Columbia, with other Odontoglossa. Dr. Wallace believes it to be a hybrid between Odontoglossum Lindleyanum and tripudians. That may be, inasmuch as it has a certain resemblance with several of our hybrid Odontoglosa, as the O. stellimicans and stauroides of Mr. Sander, and the O. lepidum of Messrs. Shuttleworth, Carder & Co., notwithstanding the supposition of different parents.

These plants should have their own sign. I will put in future the sign of a cross before them, as I put the × for acknowledged mules.

The more we see of the different products of cross-fertilisation of some plants the more we believe that a few parents may have numerous descendants of different appearance, and then the descendants of two mules—till finally the products get impossible by the diminished powers of fertilisation. How much is still to be done by skilful cultivators in this way, when Nature gives us the probability that such fertilisations are easily effected? How lucky would scientific botanists be to obtain such fine *leçons* from good gardeners. *Hic Rhodus, hic salta! H. G. Rchb. f.*

Galanthus nivalis, *L., sub-sp.* caucasicus, *Baker.**

The common Snowdrop of the Caucasus is continually confused with G. plicatus, both in gardens and herbaria. We have in the Kew Herbarium specimens from six different collectors, and in every case it is called "plicatus" on the label. But the leaf does not possess the reduplicate edge of the true plicatus, which is a native of the Crimea, and it is in my view a distinct subspecies, the affinity of which is greatest with the South European G. Imperati and the Asia Minor G. Elwesii. As it is flowering at the present time in the herbaceous ground at Kew I take the opportunity of placing on record a diagnosis and description made from living specimens. It is distinguished by Boissier in *Flora Orientalis* (vol. v., p. 144) under the name of G. nivalis var. Redoutei, but the plant described in Redouté's *Liliaceæ*, which he cites as a synonym, is G. Imperati. The varieties described by Ruprecht in Regel's *Gartenflora* for 1863 and 1868 under the names of nivalis vars. Redoutei, major, and caspius (the first figured on t. 400) are all forms of this Caucasian plant; and so I suspect is the G. virescens of gardens, which has a flush of green near the tip of the outer segments of the perianth.

Bulb globose, ½ inch in diameter; tunics many, brown, membranous; leaf-sheath cylindrical, membranous, 1—2 inches long, truncate at the apex. Leaves lorate, glaucous, ½ inch broad, simply channelled, shorter than the peduncle when it begins to flower, but finally as long. Peduncle very glaucous, 3—6 inches long; spathe usually simple, rarely bifid; pedicel cernuous, shorter than the spathe. Ovary green, turbinate, vertically plicate; outer segments of the perianth pure white, obovate-unguiculate (broader, more convex on the back, and with a narrower claw than in the genuine nivalis), ¾—1 inch long; inner half as long, obovate-cuneate, with a deep notch and two erect rounded lobes, only marked with green on the outside in a horse-shoe shaped patch round the notch, but within streaked with green and white more than halfway down. Anthers deep orange, narrowed gradually from the cordate base to the apex; filament very short, white. *J. G. Baker.*

* *Galanthus nivalis*, L., sub.-sp., *G. caucasicus*, Baker.—Bulbo globoso; foliis lorntis glaucis simpliciter canaliculatis; pedunculo glauco foliis eminente vel æquilongo; ovario magno turbinato verticaliter multisulcato; perianthii segmentis exterioribus oblongis unguiculatis niveis, interioribus obovato-cuneatis profunde emarginatis lobis roundatis erectis, extus solum circiter sinum viridi maculatis intus ex apice infra medium viridi lineatis; antheris aurantiacis e basi ad apicem sensim angustatis.

SALVIAS.

Among the shrubby members of this genus—of which there are a large number of really handsome species now in cultivation—we find a great many far hardier than is generally supposed. Many of the best kinds are grown largely for greenhouse and conservatory decoration during the late summer and autumn months, and very attractive features they make in small groups of a kind, or even mixed in a miscellaneous collection of other things. It has always been extremely difficult to make growers believe in the hardiness of a plant they have always been accustomed to look upon as tender; indeed, the same applies to a great many plants besides Salvias, as, for instance, Choisya ternata, a plant that in the middle and South of England is comparatively hardy, while in the North we have not infrequently seen it in the greenhouse, and even in a warm stove; yet I believe with a little judgment in selecting a suitable spot it would prove able to withstand the winter even in the North.

With regard to the Salvias, however, we have been for many years trying the several kinds most likely to stand in the open air; and although the result, so far, has not been in all cases quite satisfactory, they have at the same time been far more so than was at first anticipated, and quite enough to give encouragement to go on with the experiments. Of course some localities, or even counties, may not be found so suitable as others for some of the species, and for which it is necessary to make a careful choice of position even under favourable circumstances. Above all it will be necessary to see that the ground has been thoroughly drained before planting, as we find on this alone success to a very large extent depends. It will be better also to plant in situations that may be protected in case of snowstorms, as the late storms have caused considerable damage in this way to many of our plants. Where the risk is considered too great they may be planted in beds in the open air during summer, where if well cared for they are sure to give every satisfaction, and their accommodating nature will allow them to be lifted towards the end of autumn, and continue to flower in the house for many weeks after. The old plants will keep through the winter in cool frames if desired, but we find the best results are got from annually struck cuttings. The young strong shoots are taken off about the middle or end of September, and placed in an ordinary greenhouse temperature, when they will be found to be sturdy plants by the time spring approaches; the same rule will apply in increasing those grown out-of-doors permanently. The colours of the flowers of these plants are very varied and striking, from the deepest azure-blue to the most vivid scarlets.

S. chamædryfolia is a charming little plant, suitable for rockwork; its leaves are small, Sage-like, and the stems surmounted by charming azure flowers. S. Gregi, with its large scarlet flowers, is compact in habit, and very useful for cutting. S. Grahami and the variety are both fairly hardy, with large showy scarlet flowers. The list of suitable subjects is very large, and among which may be mentioned S. involucrata (Betheli), S. canariensis, &c. *D.*

The Orchid Houses.

WATERING ORCHIDS.

This is one of the most important operations in Orchid growing, and the treatment of most Orchids in pots, in some respects, differs from that of ordinary stove or greenhouse plants. If there is doubt as to any of the latter being dry it can often be decided by striking the side of the pot with the knuckles, or, if not too heavy, weighing in the hand is a very good guide, but with Orchid pots that have the greater part filled with drainage and the remainder with light open compost, the operator must use his own judgment in watering, being guided by the appearance on the surface of the potting material, and the requirements of the plants, according as they are growing or at rest. No one can safely water in a mechanical way—giving a certain species water once in a stated time, for plants in different houses under different conditions, dry more quickly than others. Sometimes the kind of stage will make a difference, whether it be made of battens with openings between, or of slate with a covering of shingle or coal-ash to give off moisture. It will make it more simple for those who have to water if the plants of each class are potted in as nearly as possible the same manner as Vandas, Cattleyas, &c., for pots nearly filled with drainage take more water than plants in pots where moss or peat has been mixed in with the drainage for about half way down the pot.

If plants are added to a collection it is well to ascertain how they are potted, if it be possible to do so without disturbing them much. Among Orchids which send out roots from a single stem (Vandas, Aërides, &c.), some plants will have the greater part of their roots exposed, whilst others will have them all growing inside the pot, and it sometimes happens that the only root-action is low down among the drainage; in such cases it is possible, by occasionally damping, to keep the moss green on the surface and at the same time allow the plants to shrivel and lose leaves through want of a sufficient supply of water at the roots.

Plants in baskets may be more easily examined, but there is little fear of over-watering them through the spring and summer months, if they be suspended from the roof. It is best to water most Orchids with a watering can, whether they be in pots, in baskets, or on blocks. When in an active state the points of the roots are very tender and those that are

exposed cannot endure the force frequently given to water when a syringe is employed. The use of a hose to damp between the pots is a dangerous method if care be not exercised, as many Orchids have nearly all their active roots outside the pots; but, if plants do well with this treatment it is a proof that they do not mind cold water. When baskets, rafts, and blocks are suspended and the roots of the Orchids are growing over and hanging down, it is not easy to take them down every day and dip them without injuring the roots, therefore, I am convinced that many grow best when watered as they hang.

Some Orchids delight in constant moisture at the roots, while others do best if allowed to become quite dry before being watered. We tried an experiment with some Cattleyas here growing on cork, by keeping the roots always wet, but the young roots soon died. Odontoglossums of the crispum type do not require to be kept saturated as some might imagine, for although, if well shaded, the pseudobulbs and foliage might keep green, the roots do not keep in so good a state of health as those that are allowed to become rather dry before watering.

Plants of Phaias tuberculosus now sending up flower-spikes should be examined often for yellow thrips, as these seem particularly fond of it. This Orchid grows and flowers very well fixed to a piece of cork placed in a pot and covered with live sphagnum; it should have sufficient water to keep the latter green, and the stage on which they stand should be covered with damp moss. The temperature may be kept a little warmer than that of the Cattleya-house. Cattleya Gaskelliana is now starting to grow, and should be top-dressed, or potted, as may be necessary. Oncidium Marshallianum, if on a block, requires plenty of water now, or the pseudobulbs will shrivel; while the spike is forming this Oncid will do in a cool Odontoglossum-house during summer, but enjoys the warm moist end of a Cattleya-house through the winter months. Masdevallias in the way of Chimæra, that require a little more heat than the other species in winter, should now be gone over; baskets are best for those that send out flowers from among the roots and close on the surface. If these plants are kept in a shaded part of the house they will establish themselves before the time comes for changing them to cooler quarters. If Masdevallia tovarensis is starting to grow it can be potted, but should not be overdone with pot-room as this species has finer roots than many others. *C. Woolford, Downside Gardens, Leatherhead.*

CYPRIPEDIUM CALLOSUM.

This species—a recent introduction from Cochin China—is one of the most promising of new Cypripediums. In growth it is like a strong C. barbatum, and in the form of its flowers it also resembles that species. The flowers, however, are very large, that from Mr. F. G. Tantz's plant, from which our illustration (fig. 64) was taken, having the dorsal sepal 2½ inches across, with two flowers on the spike, remaining in flower some six weeks.

Our illustration was taken before the second flower had expanded, but now that it is in full beauty, the superb effect of the plant may readily be imagined. The dorsal sepal is much like that of C. Lawrenceanum, pure white, striped with dark chocolate-crimson, the petals and pouch being soft rose or crimson on a greenish-white ground. C. callosum is likely to be one of our most easily cultivated and showy Cypripediums.

Influence of Forests.—M. André de Vos, to whose excellent *Flore Complete de la Belgique* we have had previous opportunities of alluding, has lately published an address on the subject of the importance of forests in the economy of Nature. The lecturer deplores the destruction of forests in the Ardennes, and shows how the barren sands of the Campine may, by judicious methods, be brought to rival the famous Pays de Waes, which, a century ago, was a sandy waste. It is pleasant to read of Count Jaubert's efforts to arouse the French deputies to a sense of their duties. His experience as a traveller and a botanist should have lent great weight to his teaching.

THE GENEVA GERMINATING APPARATUS.

Fig. 63 gives an excellent idea of the apparatus employed by J. M. Thorburn & Co., and other nurserymen, in the United States of America, which is so simple and so reliable that no seedsman or person having seeds to test can afford to dispense with it. It consists of a copper tank, 9 × 12 × 3 inches, in which are placed fifty pockets of asbestos felt supported by movable rods, and so arranged that when one of the pockets is opened for the purpose of putting in or examining the seed the remaining pockets are tightly closed, thus preventing any of the seeds becoming mixed by accident.

The tank contains about one-fourth inch of water into which the ends of the felt project. The excellent capillary properties of the felt cause a uniform moisture throughout all of the pockets, while the cover, which is not shown in the engraving, insures a saturated atmosphere and even temperature. The illustration shows the apparatus with two-thirds of the pockets removed, and with three of the remaining ones open.

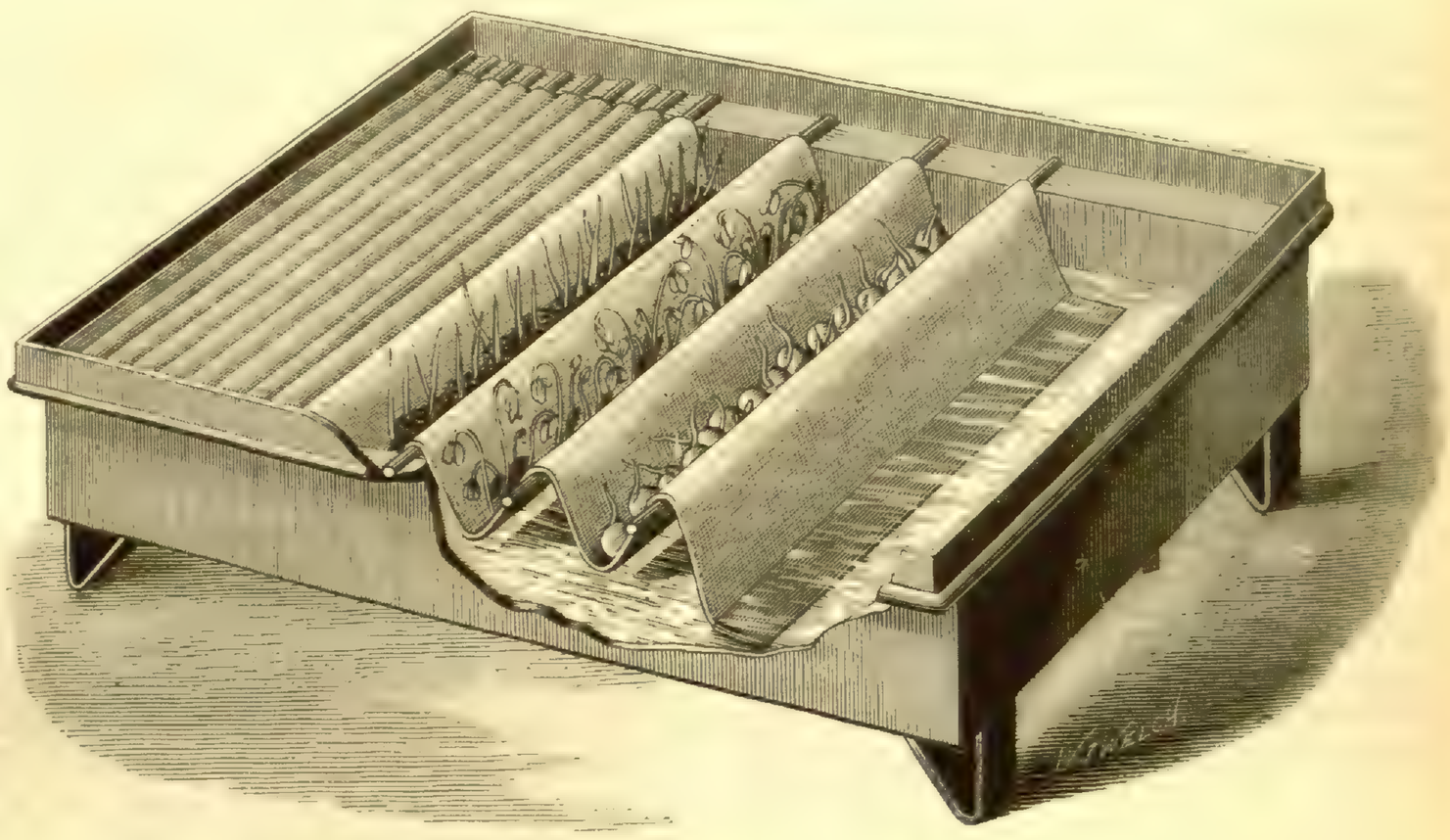

Fig. 63.—Seed-testing apparatus.

THE KITCHEN GARDEN.

SEED SOWING.

Onions may be sown whenever the ground is in a fit state; and if advantage has been taken during intervals of frost to stir the surface soil no difficulty will be experienced in obtaining a good seed-bed. The surface should be made smooth and even, and moderately firm, and the seeds sown in shallow drills one foot apart; this method of sowing is to be advised in a general way, and especially in well drained and cultivated soils; but in low damp situations raised beds for sowing on would be preferable; these should be from 5 to 6 feet wide, with alleys between, and in this instance sown thinly broadcast, or in drills from 6 to 8 inches apart.

Parsnips.—For these a distance of at least 15 inches between the rows must be allowed, sowing thinly, and on trenched ground that was manured for a previous crop; a stiff sandy loam suits them best.

Brussels Sprouts.—The first and principal sowing, if not already made, should be got in at once, in a cold frame under glass, or on a warm sheltered border outside. Some light friable soil to sow in should be prepared, and the seeds lightly covered; if in a frame, it should be kept shaded and closed until the seeds germinate, when air should be given freely on every favourable opportunity. If too thickly placed thin out all weakly and surplus plants, and when sufficiently advanced select and prick out the strongest and most forward for the first batch, making a succession of the smaller and later ones. Plants raised from this sowing will constitute the main crop, but a later and smaller one should be made towards the end of the month for late use. Under similar conditions, and at the same time, make sowings of Snow's and Early Penzance Broccolis, Veitch's Autumn and Walcheren Cauliflower, Cabbage, Lettuce, &c.

The following seeds may now be sown in the open ground:—Seakale, Asparagus, Parsley, and also additional ones of main crop of Peas, Early Horn Carrot, Spinach, Turnips, and Radishes.

Celery, Tomatos, Capsicums, Marrows, &c., may be sown in heat.

Cucumbers also should be sown in heat to raise plants for planting-out into frames for summer and autumn use. For general purposes these will give an ample supply, and come into bearing at a time when they are most appreciated and in request. Very little preparation is needed if vacant frames, which were constructed earlier in the season as hotbeds, can be utilised. Frames also that have been used during the winter months for storing Lettuce, &c., can also be put to a similar use, and need no further preparation than some suitable soil to plant in; in the latter instance the plants should be prepared for planting out about the end of April or beginning of May, and the frames should occupy a sheltered position, but fully exposed to the influence of sun and light. Some free-bearing variety with a hardy constitution should be selected for this purpose; we have found Pettigrew's Cardiff Castle preferable to any other in this respect, it being of a desirable size, good colour, and in every way suitable and satisfactory.

General Work.

After severe frosts, standing crops, such as autumn-planted Cabbages, Broccoli, and the like, become uplifted and loose in the ground, these should therefore be gone through, the decayed leaves removed, and the soil afterwards well trodden and made firm, and the plants supported and encouraged by having an additional earthing-up; any failures or blanks in the Cabbage lines should also be made good from the store-beds.

Spinach.

Winter Spinach should likewise be cleared of all dead and withered leaves, and the ground made firm and cleaned; if any of the plants show a tendency to go off at the root, this may be reme-

died by one or two liberal top-dressings of soot applied broadcast overhead, and allowed to wash in. Where this variety has failed or done badly, a small sowing of summer Spinach may be tried on a warm site in rich light soil.

Seakale.

Where the supply is dependent on lifted roots for blanching, any that may be still in the ground had better be taken up before it starts into growth, and laid in. Some cool situation should be chosen for this, and where it can be retarded as long as possible. Late supplies blanched in the open should also have the crowns covered before growth recommences, to exclude air and light; otherwise no after measures will secure the necessary whiteness.

Parsnips.

These can be lifted at any time now, and the roots stored; any cool cellar or shed will keep them in a proper condition as long as they are likely to be in demand. The vacated ground, after being manured and dug, should be allotted for some summer green crop.

Ground Work.

Let the quarters assigned for the main crops of Onions, Parsnips, Carrots, &c., have whatever top-dressing is intended to be given (such as burnt ashes, lime or soot) spread over the surface at once, that it may be mixed and incorporated with the top soil on frosty mornings; every means should be resorted to to get the ground in a fine mellow condition by sowing time, a good seed-bed being of the utmost importance.

Autumn-sown Onions should be drawn from the seed-beds and transplanted into rows from 1 foot to 15 inches asunder, and the plants from 9 to 12 inches apart; a warm situation and good rich deep soil should be preferred, the latter being made firm and even before planting. Planting is best performed with the spade or trowel, by cutting to a line a shallow sloping trench, spreading out the roots in fan-shaped manner, the plants being deep enough only to keep them erect, pressing the soil firmly about them, and afterwards with a rake making all smooth as the work proceeds. Lettuces, also, that have stood through the winter in the seed beds can be thinned out and transplanted; those in frames of the Cos section should be tied up to bleach. Remove all withered and decayed leaves, stirring the soil between the plants; give air by removing the lights, and administer copious supplies of water when required. Spring-sown plants that have been raised and in heat can be pricked off into shallow boxes or pans, and afterwards hardened off, and prepared for planting out. Celery.—A portion of the late Celery should now be lifted and laid in ashes, in a shaded, cool position, for latest use. Leeks.—These also may be treated in a similar way if desired.

Fig. 64.—Cypripedium callosum. (see p. 314.)

Jerusalem Artichokes,

if not already lifted, must be attended to at once, and a fresh plantation made; whole, moderate-sized sets should be selected for planting, in rows 3 feet asunder and 1 foot apart; almost any soil will grow them in an open, sunny situation; preference,

however, should be given to a deep rich sandy loam, and anything in the shape of fresh rotten manure avoided. Examine Globe Artichokes, and partially remove the protecting material afforded in autumn, also any decayed portion of the stems, leaves, &c. *John Austen, Witley Court.*

THE FLORENTINE IRIS.

Your correspondent's remarks on Iris germanica at p. 210, February 12, interested me particularly, because what he said of this valuable class of plants tallies exactly with my own experience of the Florentine Iris, or white Flag. Our little garden near Basingstoke was on the chalk, the driest of all soils, and there the white Flags flourished better than anything else. If the clumps were left to get too large, the plants would grow into a ring, and cease to bloom, so every autumn I made a point of breaking up the masses of Flag and planting small patches all over the garden. The consequence was that the stock increased so fast that though we gave away a hamperful every year, we were still considered to have "too many white Flags." They were well watered when first planted in, but never at any other time, and no manure was ever given to them.

The Florentine Iris and the crimson Pæony flower at the same time, and form a most effective contrast, while a more graceful floral combination does not exist than a spray of Solomon's Seal in blossom and a white Flag. *G. Layard.*

A LONDON SEED WAREHOUSE.

It is all-important that the farmer, agriculturist, and horticulturist should be able to procure seed of a guaranteed quality, and especially is that so as regards the two first-named, as they risk large quantities of one seed on a wide extent of land, as, for instance, in meadow and Wheat lands, &c. We have recently had the opportunity of seeing Messrs. Carters premises in High Holborn, London, and have had conclusive evidence of the extensive trade of the firm.

There are four warehouses, of various dimensions, occupied by Messrs. Carter, and one of these is entirely devoted to grass seeds. Here we were enabled to see the machinery used for the cleaning of the seed, and also for the purpose of separating it out into different qualities. The process consists of passing the rough seed, as collected, over a sieve kept constantly in motion, and slightly inclined. The larger part of the seed falls through the sieve into a box below which is divided into four troughs, the coarsest quality passing off the sieve at the other end. The seed which falls into the third and fourth trough is of the best quality, and is about as pure as could reasonably be desired. The contents of the two remaining troughs are the finer grass seeds and the impurities, so these are carried to another machine and further cleared in a cylinder which does its work well, giving a fine pure seed, which is mixed with the bulk from the first machine; the coarse seed here eliminated is mixed with that from the other clearer, and sold for sowing on waste land, railway embankments, &c. These two machines will clean from 30 to 35 cwt. per diem, and that is the average quantity passed through them at this season. Last year 75,000 acres of ground were sown with these seeds in the colonies and other places abroad, as well as lands in Great Britain.

As may well be imagined by any one who is acquainted with the seeds of the Meadow Foxtail, it is a difficult seed to separate from the impurity common to it, viz., the tufted Hair-grass, and it has always been a sore problem how to effect this; however, it is now solved, and a very simple piece of apparatus is employed. This is a sheet of perforated zinc, at an angle of 45°, firmly fixed to the ground, with the upper end resting on cog-wheels, which in revolving cause the whole frame to tremble, as can be demonstrated by placing the hand on it, although to all appearance it is quite steady. This is the invention of Mr. Sharman.

In another warehouse provision is made for Radish seed, and very large quantities of it are still in stock although within the last few weeks quantities have been dispatched to America—the output to that region only, in one season, being very large. Radish seed requires peculiar conditions, as there must be plenty of fresh air playing on it to dry it; and then there is the mite, which has to be considered too. How much seed per cent. is destroyed by this little pest! A lot certainly, as we testified by putting our hands into a sack of this season's seed, when they were covered with the *débris* of the ruined grains. All precautions, however, are taken, and before the seed is placed before the public it has been thoroughly cleaned. Turnip seed is stored with the Radish, while Swede seed is kept in yet another building—a wise precaution; for what would a customer say if by any chance the seeds were mixed, as might easily happen with Turnip and Swede if kept side by side? In the busy season (March) as many as 20 tons of farm seeds are dispatched per diem.

An interesting sight in the work is the cleaning of Peas, which are first of all passed through a sifting-machine, and afterwards hand-picked by women, who are paid by the piece. There are 150 hands employed in this section during a large part of the season.

Above this department, and on the roof of the warehouse, is a hothouse, where the rapid testing of the germinating power of seeds is conducted; for of course in the ordinary way this is done at one of the nurseries, but in an emergency it is found useful to conduct experiments at Holborn. This testing-house is under the supervision of Mr. Beale, jun. We felt strange indeed on the roof, and Bulwer Lytton's description in *The Caxtons* of house-tops from an attic window in Holborn rose in our memory. Lytton should have been on the roof of Messrs. Carter's warehouse, and what would he not have seen!

At the time of our visit the "rush" of orders for flower and vegetable seeds was on, and we were informed that 200 guinea packets of collections of seeds are sent off daily, and besides this there are the orders from the list. As is usual at this time, all the orders had come in together, causing a heavy strain, for the majority of customers are in the habit of not ordering their seeds until they are actually wanted for immediate sowing.

Although every one knows that seedsmen sift their seeds, it is not perhaps generally understood that the seeds undergo much more rigorous tests, but the analysing department of Messrs. Carter's business is a highly important feature. Here samples of all seeds are critically examined by an expert under microscopes, and the result tabulated in a book for this purpose. But more than this is done, for on a delicate chemical balance a given number of seeds taken from the sample under examination is weighed with a corresponding number of seeds of known quality. Every time seeds are to be purchased by the firm a sample is submitted to these tests, and before the sale is concluded the analyst has examined at least three samples, and it is on the strength of his reports that transactions are effected. A certificate is also given to all seeds offered for sale. In the Invicta lawn seed, for example, their official figures show two per thousand of impurities, which, for all practical purposes, is pure.

But we pass rapidly on, through stores upon stores of seed, glancing at the leading features, such as the despatch department, the general offices, &c., and reach the strong rooms in the basement, where are always neatly stored away all the records of executed orders of the previous ten or twelve years. Here it is one man's duty to see to the proper storing of these records of executed orders.

A museum is situated above the retail shop in High Holborn, which is as yet small, but contains several features of interest, the chief of which are life-size paintings and specimens of English-grown Tobacco on which the firm experimented largely last year, and samples of hybrid Wheats, showing the male and female parents and progeny together; vegetables preserved by the patent process of the firm, and having the appearance of models, although the vegetable itself is there, being coated with some preservative, were pointed out to us. There are also excellent models of the curious hybrid Potatos figured recently by us at p. 111.

This is Messrs. Carter's jubilee year as well as the Queen's, they having entered the premises at High Holborn in 1837, occupying then a small warehouse as a store and general office, and where they can now only find room for Potatos.

THE FLOWER GARDEN.

BEDS FOR HARDY PLANTS.

Beds for Hollyhocks and Dahlias should receive a liberal manuring and trenching. The Hollyhocks should be planted soon; should severe frosts, however, set in, it will be safe to keep a flower-pot beside each plant, to be placed over it at night. Beds for the reception of Carnations should also receive a good dressing of manure and a liberal application of lime rubbish. This is allowed to be the best material to preserve the purity of light ground varieties.

Roses.

A few Roses in well-sheltered nooks may also now be pruned for early blooming; do not, however, cut back so close as is done in the regular season, for it is possible the buds may get nipped by frost. The shoots if cut a couple of eyes longer than usual will have back buds which are dormant, and which would push flowering shoots if perchance the forward eyes were killed. China Roses may be systematically pruned now. The weaker shoots should be cut out, and the stronger ones left, which should be left of nearly their full length. The old China Roses are splendid subjects for decoration, as they continue in bloom from July to December, if the weather is favourable. A background of these plants on a long border having a line of dwarf purple Dahlias, or scarlet Pelargoniums in front, is a sight worth looking at. If Roses are still unplanted they should be seen to at once, as the parching winds of March will try all such. In the case of old standards which have been recently shifted, mossing the stems or covering them with haybands, and keeping them well syringed, will be found a good thing in preference to deluging the roots with water and lowering the temperature of the soil. Where not already done, a good mulch of manure should be placed over the beds, and a couple of inches of soil thrown over the top to make all tidy.

Propagation.

Push forward as rapidly as possible the propagation of all bedding plants. Pot or box off all cuttings when rooted. If possible give them the same temperature as they were rooted in, until such time as they start growing, when they may be moved into an intermediate one. Dahlia cuttings will root more rapidly and with greater success if a small heel be removed with the cutting; do not let the cuttings exceed 3 inches in length before taking them.

Seeds.

Great caution is necessary in watering seeds of Pyrethrum and other delicate subjects after they have germinated to save them from damping off. The preferable way is to immerse the pot or seed-pan in a pail of water 5° or 10° warmer than the atmosphere in which the subjects are growing until the water appears on the surface, when it should be removed. Let all seeds formerly directed to be sown be got in at once if still unsown. A little Mignonette and a few hardy annuals may now be sown in sheltered situations for early flowering to succeed those sown in autumn. If the ground is not

in suitable condition an early sowing may be made in pots, and after hardening off they can be planted out. These sometimes make a better display than when sown under unfavourable circumstances. If not already done no time should be lost in getting in Anemones and Ranunculuses. *W. M. Baillie. Luton Hoo.*

TREES AND SHRUBS.

A DESIRABLE HARDY SHRUB.

The Snowdrop tree (Halesia tetraptera) is a charming border plant, that receives not one-tenth the attention its merits deserve. I know of no prettier or more refined-looking a subject for the front positions of a lawn or shrubbery than the present plant. It grows freely, flowers profusely, the pretty Snowdrop-like flowers hanging all along the branchlets, that one is at all times tempted in passing the tree to procure a bunch. Any soil suits the Halesia, but that in which I have seen it doing best was prepared peat, and where the situation was what would be considered as well sheltered. *A. D. W.*

Gaultheria procumbens.

Assuredly one of the prettiest of hardy evergreen shrubs, either for forming beds for winter decoration or for clothing nooks in the rockery, is the Creeping Wintergreen of the Northern United States and Canada. The bright red berries nestling amongst the dark glossy leaves are very attractive. Both the fruits and the leaves when bruised give off the well known spicy aromatic odour of the sweet Birch (Betula lenta). *G. N.*

Leycesteria formosa.

This shrubby plant is about as peculiar as it is pretty, and twice as interesting; a border of it in our home nursery when in full flower is certainly strangely effective, the verticils of deep purple foliaceous-bracted flowers being produced in amazing quantities. The berries are of the same deep purple as the bracts, and are ornamental in a high degree. Few plants will succeed equal to the Leycesteria in cold windswept districts, for I have frequently met with it adorning some of the farmers' gardens away on the bare sides of the Snowdon range of hills, and where the plants that can have even a short-lived existence are few indeed. Stiffish soil suits the plant well; it may succeed in a finer mixture, but I have not seen it in such, and when once fairly established soon forms a dense mass of Bamboo-like canes of from 4 to fully 6 feet in height. Cuttings strike as freely as those of any plant I know of, and the plant attains full dimensions in a short space of time. *A. D. W.*

Ligustrum lucidum.

In answer to your inquiry concerning the specimen of Ligustrum lucidum at this place, we find on measuring the following to be the dimensions:—Height, 33 feet; spread of branches, 40 feet; circumference of three limbs at 4 feet from the ground, 38, 39, and 39 inches respectively; girth of stem at the base, 6 feet 9 inches. The plant is growing near the lake, which it overhangs, and has a very fine effect, especially when seen in bloom. The soil is chalk. *E. Burbery, Arundel Castle.*

Eurybia argophylla.

Although no member of this genus can be recommended for showiness or beauty of flowers, still the profusion in which they are produced, and generally neat appearance of the plants and peculiarly distinct foliage, all go far in rendering them favourites with the few who have attempted their cultivation. E. argophylla, with its large terminal panicles of flowers and silvery stalks, has just now a pretty appearance, and takes the fancy of passers-by in no small degree. The long, ovate leaves covered with woolly down on the under surface, have a very desirable musky odour and for which the plant is not unfrequently cultivated. To grow this plant in anything like a satisfactory manner a warm sheltered position must be assigned it, such as at the base of a sunny wall, or as a wall plant in some cosy nook, where abundance of sunshine is always permitted free access. Another distinct and desirable little plant is the New Zealand E. ilicifolia, which with its long shoots and freely produced white flowers is now becoming a general favourite. Against a sunny wall it is now bursting into flower.

Pyrus malus floribunda

is at present one of our most attractive plants, the bright crimsom buds and pinky flowers when fully opened being the admiration of everybody. Every garden, large or small, should possess a plant of this Pyrus, for it is very accommodating, bears trimming with impunity, and as an isolated specimen for the lawn it is particularly well adapted. The better known P. japonica, for depth of flower-colour and general floriferousness, is certainly not surpassed by any other in the genus to which it belongs. Some plants growing on an old wall within stone-throw of the sea at Bangor are just now in sight, rich and rare, hardly a branchlet wanting its several tufts of the most brilliant scarlet flowers imaginable. Of this there is a white variety, but in our opinion it is far behind the normal form as an ornamental flowering plant. *A. D. W.*

ORCHID NOTES AND GLEANINGS.

ORCHIDS AT BOCKING PLACE, BRAINTREE.

Steady progress is being made in the neat and well-grown collection of Sydney Courtauld, Esq., who seems to get an extraordinary amount of bloom from his plants—a circumstance perhaps to be accounted for by his having such well-constructed and perfectly ventilated houses in which to grow them. Notwithstanding every care, however, formerly the Phalænopsis used to be a source of great trouble to their owner and his Orchid grower, Mr. A. Wright, but now they are amongst the healthiest and most floriferous subjects in the garden, the little house to which they have at last taken a fancy being literally filled with large branched flower-spikes sent up from among their handsome and perfect foliage. Some superb Phalænopsis Schilleriana are in bloom, one especially being large, perfectly sound, and of fine colour, and with them some good P. Stuartiana, P. amabilis, and P. rosea, and in bud P. speciosa and many others. Such a sight as that in Mr. Courtauld's Phalænopsis-house and the knowledge of his former difficulties with these plants should spur on those who are not succeeding with them to further efforts, for Phalænopsis, although among the most stubborn of plants when not properly managed, are very easy to grow when once their wants are understood.

The Cattleyas here are also grown to perfection, the house devoted to them having a large number of fine forms of C. Trianæ in bloom, together with some good C. Percivaliana, C. amethystoglossa (one with two spikes of twelve and eighteen flowers), the white C. chocoensis, and a Lælia superbiens with a very strong spike of flowers. In this house there are two plants not to be beaten in their classes: the one a fine mass of a richly coloured form of C. Trianæ, which may be called Courtauld's variety, has sixteen flowers of good size and perfect shape, the sepals and petals bright rosy-lilac, and the well expanded lip a dark glowing colour in which maroon and crimson seem blended, a violet hue suffusing the whole; it is in the way of C. T. Normanni and C. T. Backhousiana, but far superior to both these fine varieties. It came out of Messrs. Veitch's importation, and is worthy to be included as one of the best dark-lipped Trianæs ever introduced. Beside it is a large specimen of a fine white form of Sander's importing—a lovely thing, with just a shade of pink in the front half of the lip and some yellow in the throat; it has just upon three dozen flowers all expanded, and forms a beautiful object.

Another intermediate-house has a fine display of Cœlogyne cristata in all its varieties, a fine specimen of the Chatsworth variety having scores of flower-spikes, some of them bearing seven flowers; and C. c. Lemoniana being equally vigorous. With them are some fine Lælia anceps (one with ten spikes, some of them with four flowers), a good and varied selection of Lycaste Skinneri, some large specimens of the pure white and fragrant Odontoglossum pulchellum, O. Cervantesi, O. aspersum, O. Oerstedi, many O. Rossii majus, the orange-scarlet Lælia harpophylla, Comparettia macroplectron, Pilumna nobilis, some good scarlet Sophronitis, the pretty old Bletia hyacinthina, and a chaste novelty named Eria bicolor, received from Ceylon, where it is called the Lily of the Valley Orchid. Its pure white flowers are borne on erect stalks, and look like closely arranged flowers of Lily of the Valley, but with much deeper cut floral segments. Its beauty and the beauty of E. clavicaulis, E. rhodoptera, and others of the genus now in flower, lead one to predict that the day is coming when Erias will come into favour; of late years they have been little regarded in collections, and have not been able to show their beauty like their better-cared-for brethren.

The Nepenthes-house, in which the Angræcum and other warmth-loving Orchids are grown, is always a fine sight at Bocking Place, where some of the rarer Pitcher-plants assume unusual proportions. N. sanguinea here has six stems, N. Northiana, N. cincta, N. Mastersiana, and other new kinds, are superbly pitchered. Two of the finest, however, are from an importation of Mr. Bull's, and the best character that can be given them is to say that in size, form, and brightness of colour they are superior to C. Rafflesiana, to which section they belong. In the Nepenthes-house Angræcum citratum, A. sesquipedale, A. hyaloides, and some grand Odontoglossum Roezlii are in bloom; and in the warm house adjoining is a very healthy collection of Cypripediums and other plants. The Dendrobium-house is gay with D. Wardianum, the varieties of D. nobile, D. primulinum giganteum, D. Findleyanum, D. Boxalli, D. luteolum, D. Ainsworthii, &c.; and the cool houses, which contain a very fine lot of Odontoglossums, among which are some unique hybrids, are showing well for flower. The Masdevallia-house has one of the best collections of these plants both as regards botanical and showy varieties. Later on it will be a sight worth seeing, with scarlet and other varieties of M. Harryana. At present there are in bloom M. velifera, M. pulvinaria, M. Armini, M. xanthocorys, M. polysticta, M. abbreviata, some fine M. ignea, the handsome and little known M. cucullata, with its pretty chocolate-crimson flowers, and a probably new species with very fine fleshy-white and crimson flowers as large as those of M. velifera. The old range of plant-houses has been done away with, and a new range, glazed on Rendle's system, erected more in the open, the flowering and foliage stove plants and flowering climbers evidently appreciating the change. The old range of plant-houses was the last trace of old-fashioned gardening at Bocking Place, and the whole of the garden may now be said to be modernised and made perfect.

Habenaria militaris.

A terrestrial Orchid, discovered in the mountains of Phu-Quoc, Cochin China, by M. Godefroy. The leaves are lanceolate, diminishing gradually in size, the upper part of the stem being occupied by a loose many-flowered raceme of flowers, each about 1½ inch long, with small greenish segments, forming a hood, and a large oblong four-lobed scarlet lip. The last number of the *Orchidophile* (February) contains a coloured figure of this remarkable and beautiful species. M. Godefroy does not give a very tempting account of the new French colony.

An American Seed-house in London.—We learn that Messrs. W. Atlee Burpee & Co., of Philadelphia, U.S.A., have opened a branch house in London, for the purpose of facilitating their trade in seeds with English gardeners, &c.

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APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

MONDAY, Mar. 7—Surveyors' Institute, at 8 P.M.

TUESDAY, Mar. 8—Royal Horticultural Society: Scientific Committee, at 1 P.M.; Fruit, and Floral Committees, at 11 A.M. National Rose Society: Executive Committee Meeting.

WEDNESDAY, Mar. 9—Royal Microscopical Society, at 8 P.M.

SHOW.

FRIDAY, Mar. 11—Hyacinths, at the Exeter Nurseries.

SALES.

MONDAY, Mar. 7—Fifteen thousand Lilium auratum, ten cases of Araucarias, 500 clumps of Lily of the Valley, &c., at Stevens' Rooms.

WEDNESDAY, Mar. 9—Roses, Fruit Trees, Shrubs, Border Plants, &c., at Stevens' Rooms. Lilium auratum, Roses, Greenhouse Plants, &c., at Protheroe & Morris' Rooms.

THURSDAY, Mar. 10—Established Orchids, in variety, at Stevens' Rooms.

FRIDAY, Mar. 11—Imported Orchids, at Protheroe & Morris' Rooms.

SATURDAY, Mar. 12—Roses, Fruit Trees, Shrubs, Border Plants, &c., at Stevens' Rooms. Roses and other Plants, at Protheroe & Morris' Rooms.

Alpine Plants in Winter.

A few years ago we had occasion in these pages to speak of the vegetation and of the forests in the valley of Zermatt as seen by tourists in the ordinary tourist season. We can now supplement this by an account of the same district in the middle of February, received from our esteemed contributor, M. Correvon, who seems almost to have rivalled Mrs. Burnaby in some particulars and to have excelled her in the particular matters in which we are most interested. "On February 10," writes M. Correvon, "I left Geneva, arriving at Zermatt on the 12th." Any one who calls to mind the snail's gallop of Swiss railways in summer will think this something prodigious. Perhaps it was too cold for the *conducteur* and the *chef du gare* to play a quiet game of dominoes together between the arrival and the departure of the trains at the several stations. Perhaps Marie did not find it convenient to attend the arrival of the train for the customary *causerie* with the train officials. In any case M. Correvon, as he tells us, did really arrive at Zermatt on the second day after leaving Geneva, which is, under any circumstances, fairly good work. Arrived at Zermatt he—lucky M. Correvon!—passed eight days on the mountains in the most serene (*pur*) weather; and while in the lowlands, and by the Lake of Geneva, dulness and fog prevailed, in the higher regions pure light bathed all Nature in refulgent glow. It is, says M. Correvon, a great error to suppose that plants at these high elevations have to submit to injury from severe frost. On the contrary they are protected by a thick covering of snow, or by structural appliances, beneath which they are—not at rest, but at work.

Accompanied by Auguste Gentinetta, of Brieg, M. Correvon ascended many peaks, including the Mettelhorn (3410 metres) and the well-known (in summer) Gornergrat. These lofty, wind-swept, sun-scorched crests were at that time denuded of snow. What were the little alpines about up there at that time? M. Correvon tells us that all the time they are covered by snow their roots are at work, and the buds are preparing for the spring campaign, so that when the good time comes they may be found ready to avail themselves of it. The Soldanellas were all ready for a start, so was Viola calcarata, Androsace carnea, Anemone vernalis, and indeed most of the plants that were covered by the snow. The case was very different with the plants unprotected by the snow and exposed to the full force of the cold. In such case the plants were shrivelled and dried up like the Rose of Jericho. At an elevation of 3400 metres Silene acaulis was found exposed to the greatest cold without any protection, the leaves were browned and folded one over the other as if to keep themselves warm, but looking as if killed by the severity of the frost. No such thing: they were all alive, and would recover at the first opportunity. In the centre of each tuft was a bud all ready to start into active life at the first touch of spring. Saxifraga oppositifolia was in like manner protected by the hairs which bedeck the margins of its leaves, and which are much more developed in winter than in summer. These hairs form a protection like the blanket which the chilly traveller wraps around him. Primula viscosa was similarly much better protected than in summer.

M. Correvon was impressed with the fact that these plants were by no means at rest. Their roots were deep in soil much less deeply frozen than is generally supposed; the surface soil was, indeed, frozen, but below the surface—thanks to the snow covering—the soil was still unfrozen. Hence the plants were quite ready to respond to the genial influences of the *foehn*, or south wind, which thaws the soil, or permits of the resumption of active vegetation. Spring, indeed, comes much later at these elevations than in the plains, while at the end of February such plants as Saxifraga oppositifolia, S. Burseriana, Primula viscosa, Draba aizoides, may be seen in bloom on the low grounds. In these high regions spring does not begin till the end of May, or even till July. The summer is short, but very favourable to rapid growth. Light of an intensity unknown in the plains is the heritage of the plants in the Alps. The more retarded the spring the more favourable are the conditions for the development of the flowers. The plant which has waited so long for the production of its flowers is impatient to show them, and under the influence of the light which may exert itself for fourteen or sixteen hours daily without check, the flowers develope and take on colour with a rapidity and intensity unknown in the plains; hence the explanation of the profusion of flower in alpine plants when the blooms are so thick as to conceal the leaves. These are conditions which we cannot imitate in our gardens, except, to some extent, by artificially prolonging the winter, and retarding the spring growth of the plants.

Another remarkable feature is the abundance of seed stored up in the snow itself. Millions of seeds, here and there, cover the snow; these swell gradually, and become stratified, to use a gardener's expression, their husks swell so as to enable the seeds to germinate on the first favourable opportunity. Most of these seeds are doubtless destroyed, but many are preserved. M. Correvon notes a natural growth of Rhododendron in a locality to which they were naturally strangers. This is a spot upon which the avalanches, laden with seeds derived from the upper slopes, fall. The seedling Rhododendrons, which come up so abundantly, are evidently the offspring of parents whose home is high up on the mountain side.

It is evident from this that in considering the local distribution of alpine plants snow and avalanches have to be taken into consideration more fully than is sometimes done. M. Correvon does not tell us what sort of accommodation he found near the Weisshorn in February, but his letter is so stimulating that we doubt not many will be found willing to exchange the fogs and sombre climate of these islands for the pure clear air of the mountain side, if only M. Seiler, or some other enterprising Swiss host, will provide adequate accommodation.

A Chinese Water Temple.—Some years ago there was a fancy among landscape gardeners for imitating Chinese gardens and Chinese decorations, a notable instance of which was the beautiful and interesting garden of Mr. Bateman, in Staffordshire. No doubt, in some cases, the fancy was pushed to excess, and the ugly was imitated as well as the beautiful. Nevertheless, as our present illustration shows (fig. 65), we might do well to reproduce some of the more beautiful features of Chinese taste, and give additional interest to gardens by stocking them with appropriate vegetation. When we think of the many beautiful hardy plants, such as various Bamboos, Tree Pæonies, Dielytras, evergreen Oaks, and other plants derived from the Flowery Land, there can be no question that a garden or a portion of one so treated would satisfy alike the eye and the intelligence. Our illustration was taken from a photograph kindly sent us by Mr. Westland, of Hong Kong, and shows a water-temple on the margin of a lake in Canton, which would form a pleasing model for similar constructions in like situations here. If we could hardly hope to grow the Nelumbiums which surface the water in our sketch there would be no difficulty with many of the Nymphæas.

Cambridge Botanic Garden.—Mr. R. J. Lynch, the Curator, has issued a very full list of seeds offered by the Garden in exchange. The list is not only full, but well arranged in botanical sequence, correctly and well printed, as a University list should be. An alphabetical index of genera would have been serviceable to those who are not "up in their botany."

English Tobacco Culture.—We observe that Mr. E. J. Beale (James Carter & Co.) has published a little volume, with numerous illustrations, on Tobacco culture in England and Ireland. The book is dedicated to the Queen by Royal command. The book contains a general history of the question, an excellent calendar of operations, a full description, with illustrations of each of the seventeen sorts tried by Messrs. Carter, with illustrative woodcuts and balance-sheets showing the cost of cultivation per acre of each variety. The process of curing is also described, and reports of the cultivation of the plant in various parts of England, Ireland, and the Continent are added. On another occasion we shall speak more at length of this very

Fig. 65.—Chinese water-temple: a model for a summer-house. (see p. 318.)

practical and useful publication; in the meanwhile we urge all those who are thinking of making experiments in this matter to procure and carefully study Mr. Beale's little book, which may be had of E. Marlborough & Co., London.

The Origin and Extinction of Cultivated Plants.—It is a well known fact that the source whence many of our cultivated plants have originated is not for certain known. Such is the case with Wheat, Maize, the Bean, and others. Failing in the endeavour to trace the ancestor of these plants, or any direct descendants from them, it is naturally conjectured that the plants in question are descendants from specific types no longer in existtence. M. De Candolle, reverting to this subject in a recent number of the *Archives des Sciences Physiques et Naturelles*, throws out the suggestion that these plants (Wheat, Beans, Lentils, Chick Peas, Maize) no longer exist in the wild state apart from cultivation, by reason of the circumstance that their seeds are destroyed by field mice, destructive birds, or other ravagers. The cultivator takes measures to obviate their destructiveness, but left unprotected the seeds

fall a prey to the birds, and so the species eventually becomes extinct. The seeds of the five plants mentioned are all more or less starchy, and easily digested by birds. Oats, on the contrary, pass through the digestive canal of horses uninjured, while many plants of wide distribution have very hard seeds, or seeds protected from injury in some way or another; such are the Date, the Olive, the Cocoa-nut, the Peach, Apricot, Mango, Avocado Pear, plants which readily escape from cultivation, and establish themselves, because they are protected from the assaults of their enemies; so also Strawberries, Cherries, Figs, Vines, extend their range, because, although their seeds are swallowed by birds, they are not injured by passing through the digestive canal, while they are widely dispersed; hence, as a general rule, M. De Candolle considers that plants with farinaceous seeds unprovided with adequate protection tend to disappear, while others protected in some way or another tend to increase and multiply.

Royal Microscopical Society.—At the next meeting of the Society, to be held on Wednesday, March 9, at 8 o'clock precisely, the following papers will be read:—"On the Differentiation of Tissues in Fungi," by Mr. G. Massee; "On Section-cutting of Sponges and other similar structures with soft and hard tissues," by Dr. H. J. Johnston-Lavis and Dr. G. C. J. Vosmaer.

Sunshine.—Mr. R. H. Scott, F.R.S., President of the Royal Meteorological Society, in a valuable paper on "The Measurement of Sunshine" (*Quarterly Journal of the Royal Meteorological Society*, July, 1885), has tabulated the results of the Stokes' recorder, as observed at forty-two stations. Having recorded the actual hours of bright sunshine, its relation to the possible duration of sunshine for the period concerned must be reduced to a percentage value. The following results have been given by Mr. Scott for some typical stations:—

Mean Annual Percentage of Possible Sunshine.

Jersey	39
Pembroke and Geldeston (Norfolk)	35
Douglas	34
Bournemouth	33
Cambridge and Dublin, Parsonstown and Valentia	33
Oxford	31
Aberdeen	30
Silloth and Kew	29
Stonyhurst	27
Greenwich and Stornoway	26
Orkneys	24
Glasgow	22

Mr. Scott's leading deductions are as follows:—1. The extreme south and south-west stations are the sunniest, Jersey standing first in this respect. 2. In late autumn and winter Ireland is much sunnier than Great Britain. Respecting the periods of maxima, May is the sunniest month, and in the most favoured districts the percentage is then 50 (in Jersey 60). June and July show a falling off. In the late autumn the Midlands and Lincolnshire show the greatest deficiency. But the averages are taken from too short a period of years (five or less), and it may be expected that larger experience will extend and amend these deductions.

"Designs for Flower Beds."—This is a book of designs for flower and carpet beds, by W. F. Gale, florist and landscape gardener, and published by G. A. Solly & Son, Springfield, Mass., U.S.A. The publication contains a collection of ninety designs in line engraving, and in colours, in the main for carpet bedding only. With very few exceptions these are of the most remarkable character, and the "notions" seem to be borrowed from the most incongruous objects imaginable, as butterflies on the wing, windmills, scrolls of paper, cross keys, wheels from clocks, pairs of spectacles, horseshoe and whip, while others are of purely fantastic or geometric character. The designer gives with each design a list of plants that can be used to fill the various parts of the patterns, oblivious apparently, of the fact that in the gardens of Europe the carpet style of bedding is dying out rapidly, owing chiefly to the growth of a better taste in such matters and to the general curtailment of labour expenses in gardens, and that the same causes will obviously prevent carpet bedding enjoying a long period of popularity in America, where the price of labour is higher than with us, and the desire of imitating the Old World in matters of taste very strong. We would remind the Editor that in dealing with the names of plants it is always politic to have proofs read by a competent person, so that such mistakes of spelling as parychoides for paronychioides; Santalena for Santolina; Geranium for Pilargonium; Pillia for Pilea: Sileginalis for Selaginelloides; Hyderanga, and others, may not occur.

New Species of Stylidium.—In November, 1886, Mr. J. G. Otto Tepper, of Adelaide, collected on Mount Taylor, Kangaroo Island, Victoria, Australia, a plant which Baron von Mueller has shown to be an unknown form, and named it S. Tepperiana. A specimen was transmitted and shown at the Linnean Society (February 17), where it was mentioned as having been found growing in the interstices of a tertiary limestone. Other trees which grew in the neighbourhood were stunted Eucalypts, Hakeas, and an Acacia somewhat resembling A. pycnantha. Mr. Tepper is to be congratulated on his find, and on the earnest way in which he is at present botanically exploring little frequented localities on the seaboard of the Victorian colony.

The Phylloxera.—Mr. MacLachlan, in his Presidential address at the Entomological Society, remarks as follows:—"In July last I had opportunities for learning more about the ravages of the Phylloxera in France, from personal observation and conversation, than I had ever before been able to do. A sojourn of some length in the Pyrénées Orientales brought the extent of the ravages vividly before me. I was in a district once covered with smiling vineyards, now there are only the dead stocks half concealed by weeds, left in the ground, ghastly reminders of the past. Or occasionally the dead stocks are piled in huge stacks for firewood, and the Vines have been replaced by Maize—a poor substitute from a financial point of view. I met men once prosperous proprietors, now impoverished peasants, still clinging to the scenes of former prosperity. The state of affairs there is repeated in very many other districts, and it was lamentably evident in that of Angoulême in passing through it by train. The famous Bordeaux district, however, seems largely to have recovered itself, and in passing through it one would not imagine that it also had recently gone through the same ordeal. In this district remedial measures and the introduction of new blood in the form of American stocks, said to be Phylloxera-proof, have told successfully. And, speaking as an economic entomologist, I cannot resist the opinion (in holding which I think I am in a minority) that the want of introduction of new blood may have had a large share in rendering the Vines, cultivated too much 'in and in,' ready victims to the pest when it first appeared. I am not armed with official statistics, but there appeared to be hopeful feeling to the effect that the Phylloxera was exhausting itself (so far as France is concerned); let us hope such is the case. But I met and conversed with intelligent and far-seeing Frenchmen, who held that the future of their country depends more upon what turn the Phylloxera may take, than upon political affairs. Never before has an insidious insect-pest caused such wide-spread and continued ruin."

Royal Horticultural Society. — The Council of the Royal Horticultural Society have definitely arranged with the Commissioners of the 1851 Exhibition for the occupation of the conservatory at South Kensington for the Society's meeting and shows, pending negotiations with the Royal Albert Hall Corporation. The entrance to the conservatory will be by the north-east orchard-house in the Exhibition Road, and exhibitors' entrance on the east side of the Royal Albert Hall. Fellows of the Society will be admitted at 12 noon, on presentation of their last year's tickets, and the public at 1 o'clock, on payment at the door. Until further notice the price of admission to the public will be 1*s.* to the ordinary meetings, and 2*s.* 6*d.* to the larger shows.

Market Apples.—Professor Bailey, of the Agricultural College of Michigan, has the following sensible remarks on this subject:—"No amount of good culture or shrewd marketing can make poor varieties profitable. Pay close attention to the Apples which succeed best in the vicinity. The three most important points to aim at in an Apple for market are a hardy vigorous tree, a good bearer, a large red fruit;" to which we should add, a good traveller and a good keeper.

New York Agricultural Station.—The annual report of the Botanist, Mr. J. C. Arthur, contains valuable articles summarising our knowledge on various plant diseases, such as Pear blight (Micrococcus amylovorus), and Strawberry mildew (Sphærocheca castagnei).

Tonquin Beans. — Our contemporary *The Chemist and Druggist*, in a recent weekly trade report, says that advices from South America state that the last crop of Tonquin Beans was a very good one, and yielded 3000 cwt., of excellent quality; the crop of 1886 is considered, however, to be a very inferior one, amounting probably to not more than 300 cwt. The exclusive right to gather Tonquin Beans in Venezuela is in the hands of a company who consign the whole crop to a well-known New York drug house. Other arrangements, however, will, it is said, be made in regard to the disposal of the crop in the course of the present year.

Primula Venzoi ×.—The *Illustrierte Monatshefte* for March contains a coloured plate, after a drawing of Herr Sendtner, of this pretty hybrid between P. Wulfeniana and P. tirolensis. The leaves are oblong-obovate, glabrous, deep green, and the lilac flowers are borne on shortly-stalked umbels. Mr. Sendtner finds this hybrid, like many others, easier to cultivate than the species.

Mr. Bernard Dyer, B.Sc., F.C.S., F.I.C.—This gentleman has been appointed Consulting Chemist to the Leicestershire Agricultural Society.

Ditherington and St. Michael's Cottage Garden Society.—On February 22 last, at a meeting of this Society, Mr. Miller, the head gardener, Sundorne Castle, was presented by the members with a portrait of himself, in recognition of his services in connection with the Society.

"Bees and Bee-Keeping." — Mr. Cheshire's admirable publication, issued by Gill, *Bazaar* office, has advanced to the second volume, devoted especially to the practical aspects of bee-culture. The manner in which Mr. Cheshire has treated the scientific part of his work gives us great confidence that the practical part will be no less well done. If advance is to be made in bee-keeping it must be by the application of scientific knowledge. Rule of thumb is only "round and round;" if we are to get on and advance, we must avail ourselves of the teachings of science in this as in other matters.

Polygonum Bistorta. — It is asserted in one of the Russian medical periodicals that the root-stock of this plant is a preventative against hydrophobia, animals bitten by mad wolves and mad dogs having escaped the disease when treated with Bistort. Although we narrate the alleged fact we do so with the view that it may be tested by scientific enquiry before it be believed in.

"Reichenbachia." — The last part of this sumptuous publication contains excellent coloured figures, accompanied by descriptions, of the following:—

Oncidium Jonesianum, and O. Jonesianum phæanthum, t. 21.—A beautiful Paraguayan species, introduced by M. St. Leger. The type has the whitish

segments purple or brown spotted, while the variety, phæanthum has brown unspotted segments. The climate of Paraguay, like that of Mexico, is very hot in summer and intensely cold in winter, hence the plants develope their growths quickly, and afterwards enjoy a protracted period of rest. The plants, says Mr. Sander, are best grown on blocks of hard wood, preferably Teak. The plants should be fastened leaves downward, and suspended near the glass in the East India house in April, when they begin their growth. They should be kept in full sun and frequently syringed. When growth is completed they should be removed to a cooler place and syringed once a day only, increasing the moisture when signs of activity show themselves.

Saccolabium giganteum, t. 22. — An old favourite, too well known to need comment.

Cypripedium Io ×, t. 23.—A hybrid raised by Mr. Norman Cookson between C. Lawrenceanum and C. Argus, and described in our columns April 17, 1886, p. 488.

Odontoglossum blandum, t. 24.—A species described by Prof. Reichenbach in our columns, 1870, p, 1342, and belonging to a group characterised by very narrow segments copiously spotted. It thrives best, says Mr. Sander, in a shady corner of the Cattleya-house. Shade is indispensable. In the growing season the plant requires plenty of water, and a temperature of 55° to 60° Fahr. It flourishes in May, when the plant should receive cooler treatment, and be removed to a shady part of the Odontoglossum-house. After flowering the plants should only have water sufficient to prevent the bulbs shrivelling.

The "Orchid Album."—The plants figured in the last number of this publication are :—

Lælia purpurata Russelliana, t. 269.—A very distinct variety, not recognisable when out of flower. The chief distinctions lie in the lip, the lobes of which are rosy-lilac strongly veined with rosy-purple; throat light yellow streaked with purple.

Aërides Lawrenciæ, t. 270.—The finest of its genus.

Sobralia leucoxantha, t. 271.—A rare species, with oblong lanceolate white segments, and a convolute lip with an orange throat streaked with deeper orange lines, and with the margin crisped.

Trichocentrum orthoplectron, t. 272.—The sepals and petals of this dwarf evergreen are of a light chestnut or cinnamon-brown faintly tipped with yellow; the lip is large, with a crimson-purple blotch on either side of the base; the crests or keels at the base are nearly obsolete and deep yellow. The warm end of the Cattleya-house suits this species best, but care must be taken to shade it from the mid-day sun.

Royal Gardens, Kew.—The second *Bulletin*, dated February, 1887, has just reached us. It contains notes on the new Boxwood, Buxus MacOwani, and Mauritian Industries. We shall take another opportunity of alluding to its contents.

Hyacinth Exhibition.—At the Exeter Nurseries, Exeter, Messrs. Lucombe, Pince & Co. will hold their tenth annual show of these bulbs on the 11th inst. Messrs. Lucombe, Pince & Co. have issued a circular inviting competition on favourable terms. Full particulars are published in the seed catalogue of the firm.

The Forthcoming American Exhibition.—The extent of the grounds occupied by the American Exhibition at Earl's Court, Kensington, is nearly 23 acres. With such ample accommodation the directors have been able to set aside nearly six acres for pleasure grounds. These will be elaborately laid out in gravelled walks, and the flora will include all such American specimens as will stand the English climate. Here will be the music stand, where two military bands will alternate in concerts of popular and classical music, pavilions for special exhibits, refreshments, &c., roller coasters, and a model of the celebrated American switch-back railway in Pennsylvania.

The Apiary.

THE BRITISH INVERTIBLE BAR-FRAME HIVE.

This is a thoroughly good hive, invented and manufacted by Messrs. George Neighbour & Sons, of Regent Street and High Holborn. It has been manufactured specially to suit our climate, and can be used by bee-keepers of all creeds. It consists of four boxes, floor-board, honey-board, and queen-excluder. To begin with the boxes. They are all of one size—viz., 5 inches deep, 14¾ inches wide, and 16¼ inches from back to front, outside measure. Two of these boxes are intended for the brood, and each of them contains ten shallow frames. The frames are placed in position, and then a piece of board is placed against the last frame, and all are held tightly together with two wooden screws. So tightly are they held by the screws that the boxes could be thrown about without the frames moving in the slightest degree from their position. The other two boxes serve for supers. Each of these contains seven wide frames, and each frame holds three

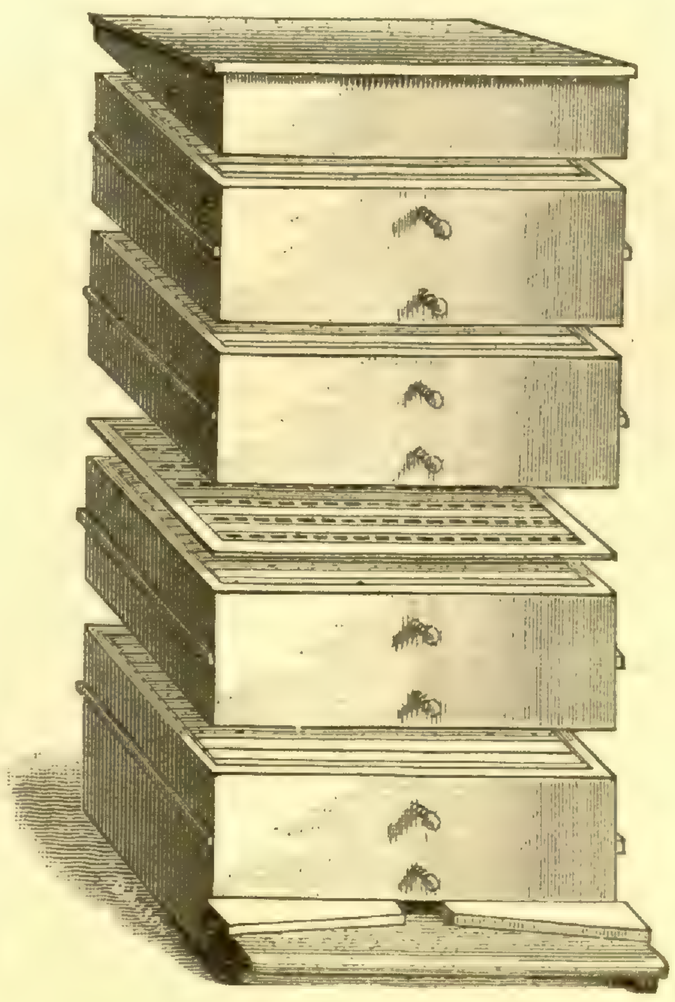


Fig. 66.—BAR-FRAME HIVE.

4¼ × 4¼ sections, so in the two boxes there would be forty-two sections. These are also held with screws. Of course, if desired, these two supers might contain the other kind of frame, and extracted honey obtained instead of comb honey. The floor-board is of the most approved fashion, and the entrance can be narrowed by sliding the hive back, and widened by sliding it forward. One great convenience of this hive is that every box is interchangeable and invertible. A good way to use this hive would be to get everything ready, by putting thick foundations in the frames of the brood boxes, and thin foundation in the sections. Let all this be done long before you want to use the hive, so that nothing be scamped. Suppose now the happy season has arrived and you have a prime swarm: put this swarm into one of the brood boxes, and place it on its floorboard, and cover up as usual with ticking and carpet, and put the roof on. After a few days invert this box and place the other on top. After a few days the top box may be inverted, and if honey is coming in very fast, the queen excluder may be placed on the top and one of the supers be placed on that. When these sections are getting towards completion, another super may be placed under the other, and the super which is nearly completed may at the same time be inverted, and will very soon be completed. If you have two swarms come off within a few days of each other, and these swarms are not too large, one could be put in a brood box, as explained before, and when the swarm comes off, put it in another brood box and stand it close to the other till dusk. Then take the last swarm and put it on the top of the other. This would make an immense population at once, and the bees themselves would settle the matter of the reigning sovereign, by casting one out. By the kindness of Messrs. Neighbour I am able to illustrate their substantial and well made hive (fig. 66). At some future time I shall again call attention to it, and explain how I should get the bees out of the supers of a hive like this. *W. Chitty, Pewsey.*

Plants and Their Culture.

INDOOR ROCKERIES.

These constructions in conservatories, &c., will now need attention, the inert soil should be removed, and replaced with fresh, sweet compost, and any unsatisfactory specimens of Palms, Ferns, Begonias, &c., should be replaced with more desirable ones, which should have fresh soil to grow in, the old being carefully worked out from amongst the rocks. If tastefully employed, Caladiums, Phyllotænium Lindeni and other Aroids are very effective while in good condition; their pots should be plunged so that their places may be taken in winter by Calanthes, Cypripediums, Begonia insignis, Euphorbia jacquiniæflora, and similar subjects. Selaginellas, Cyrtodeira fulgida, Fittonias, Tradescantias, Ficus minima, Panicums, and some other dwarf rock plants soon outgrow their spaces and become shabby; their propagation is, however, simple, and their cuttings will root readily in heat if attended to at the present time, and will quickly form pretty plants, old plants may consequently be replaced with little difficulty.

Clivias.

These with us are objects of great beauty at the present time, and the plants, by being associated with Callas, Lachenalias, Cyclamens, and forced bulbs, are made very effective. Plants that need more root-space may be attended to as soon as their flowers are faded. Large specimens may be kept in good condition for a few years without being repotted if assisted with concentrated manure. In order to increase the number of plants such plants may, however, have the soil removed from their roots and their crowns divided carefully, so that their roots are broken as little as possible, and repotted. Young established plants should be shifted into larger pots as soon as their growth commences, and all newly potted plants should be allowed a rather close light situation and an intermediate temperature. I. miniatum and its varieties succeed well in fibry loam mixed with a moderate quantity of sand.

Bouvardias.

Early propagation is an important point in the cultivation of these; plants treated as previously recommended should now be well rooted, and require potting singly in small pots without more delay, and be stopped subsequently, as may be found necessary to make them bushy. Plants one year old that were cut back after flowering, and have broken may now be shaken out and repotted in fibry loam, leaf-soil, and sand; the plants so treated should have the assistance of slight artificial heat until they become established in their new pots, when they must be gradually hardened, previous to being planted out in cool pits with the young plants. Fumigation will be resorted to if aphis puts in an appearance.

Epacrises.

As these go out of flower their growths should be cut back, and the plants placed in a moderately close temperature until they commence to grow, when repotting should be done, using pots a size larger; the compost employed being good fibry peat, mixed with a liberal quantity of sharp sand. The process of potting should be performed very firmly.

Until the plants have become well established the structure in which they grow should be closed early, to husband the sun's warmth, and the plants syringed overhead, and a humid atmosphere promoted. *Thomas Coomber, Hendre Gardens.*

PEARS.

A SELECTED LIST OF ONE HUNDRED VARIETIES OF PEARS.

(*Concluded from p.* 218.)

JANUARY TO MARCH.

1. Amiral Cecile.—Rather small; fine melting flesh, and of good quality.
2. Bergamotte d'Esperen.—Generally rather small; excellent quality, constant.
3. Beurré Sterckmans.—Of medium size and rather pretty; crisp flesh, good.
4. Beurré Rance (fig. 68).—Large, very juicy, sometimes rich, but uncertain.
5. Beurré de Jonghe.—Medium size, juicy, and richly flavoured; constantly good.
6. Duchesse de Bordeaux.—Medium size; sometimes remarkably good, but uncertain.
7. Duchesse de Mouchy.—Large, rather pretty, half melting, sweet.
8. Doyenné d'Alençon.—Medium size; flesh rather pasty; sometimes good.
9. Easter Beurré (fig. 67).—Large, frequently handsome; fine buttery flesh; excellent when well grown, but uncertain.
10. Louise Bonne de Printemps.—Medium; occasionally good, but uncertain.
11. L'Inconnu.—Medium size; occasionally good, but rather uncertain.
12. Madame Millet (fig. 70).—Medium, flesh soft, melting; moderate quality.
13. Marie Grusse.—Large, and rather pretty; flesh melting and pleasant.
14. Ne Plus Meuris.—Medium size, very irregularly formed, melting, juicy; a good constant Pear.
15. Olivier des Serres.—Medium, very good in quality; a good cropper.
16. Old Colmar.—Large, very juicy, and sometimes rich; pretty constant.
17. Passe Crassane.—Large, sometimes good, but uncertain.
18. St. Germain.—A fine old hardy sort, always moderately good.
19. Verulam (fig. 69).—Ripens freely and well some seasons, and is then moderately good.
20. Winter Crassane.—Small generally, moderately good in quality; a good hardy sort.

The Pears of this season are extremely variable in point of quality. It is indeed difficult to find good Pears after about the middle of January, excepting after specially good seasons. Great care in their preservation in the fruit-room is necessary Beurré Rance and Easter Beurré being specially amenable in this respect. Beurré de Jonghe and Olivier des Serres are more constant. Verulam only occasionally becomes melting, and is then valuable, coming in so very late.

FRUITS UNDER GLASS.

POTTING PINE-APPLE PLANTS.

Where there is accommodation at hand for the potting and standing of the plants under glass or in a warm shed while the plunging material is being renewed, the present will be a good time for shifting plants into larger pots. An excellent compost to use at potting consists of fibry, sandy loam, small charcoal, half-inch bones, and soot, at the rate of a 10-inch potful of the two latter ingredients to a barrowful of loam, the whole being well mixed and made warm before being used; and it should be sufficiently dry to prevent its adhering to the potting-sticks. Over-potting should be avoided, but a space of from 1 to 2 inches between the ball of the individual plants and the pot should be given to all healthy plants. The pots should have from 2 to 3 inches deep of thorough drainage, beginning with large pieces of crocks and finishing with small ones, placing a little fresh soot over the crocks to hinder the ingress of worms, and a few pieces of turf grassy side down. The plants should be let down to the bottom leaves, a few of which must be removed, and the soil rammed firmly round the roots, making the plants firm about the collars. The pots should then be plunged to the rim in the bed, the fruiting plants at from 2 feet to 2 feet 6 inches from centre to centre, giving the smaller plants space in proportion to their size, and keep the heads of the plants within an inch or two of the glass. Where shed accommodation is not at command the operation of potting had better be deferred till warm weather in April.

MELONS.

As the plants in the early house are now making rapid progress towards the trellis they should be secured to the sticks supporting them every two or three days, until the shoots have nearly reached the top wire of the trellis, when they should be stopped, to secure an equal set of fruit regularly distributed over the plants. This can easily be done by pinching out the first flowers that show on the laterals nearest the base of the plants. Pinch the shoots proceeding from the main stem between the ground-line and the first wire of the trellis to one joint, to insure that portion of the stem being as thick as that furnished with fruit-bearing shoots above it. Damp the plants overhead and the house generally morning and afternoon on bright days. Admit air freely during favourable weather, to secure a short-jointed, firm growth in the plants. Maintain a night temperature of 70°, 75° by day with fire-heat, running it up 10° or 15° higher with sun-heat, and plenty of atmospheric moisture at closing time—about 2·30 in the afternoon. Successional sowings and plantings must now, and for the next few months, be made according to requirements. Earth-up any young plants that may require it, and plant out or otherwise shift the plants into larger pots before they become pot-bound. Plants growing in hot-water pits and dung, and which have been stopped some short time since, will now have made some laterals, three or four of which should be trained over the surface of the bed, and stopped when they have made 16 or 18 inches of growth, which will result in the production of fruit-bearing shoots, which in their turn should be stopped at one joint beyond the fruit, after which, with the necessary stopping and thinning of the shoots, the plants can be allowed to furnish the allotted space. Impregnate the blossoms on fine days when the pollen is dry, and maintain as far as practicable a rather dry atmosphere while the plants are in this stage. Three or four fruits will be enough for each plant to ripen at a time.

Fig. 67.—Pear Easter Beurré.

Fig. 68.—Pear Beurré Rance.

PEACH TREES.

The young growths must be attended to in the way of tying down, and the stopping of any unduly strong shoots so as to promote a balance of growth in the trees. *H. W. Ward, Longford Castle.*

THE HARDY FRUIT GARDEN.

GENERAL WORK.

The bitterly cold easterly winds and sharp frosts of the present month have afforded opportunity to finish up the pruning and training of wall trees, so that but little will now remain to be done.

Planting Cuttings of Bush Fruits.

If the cuttings have been prepared as I advised in a former Calendar, and laid thickly in trenches, the planting of them now will be more expedited than by having to make them at the time of planting. The rows of cuttings should be 2 feet 6 inches asunder, and the cuttings 9 inches apart in the rows. At the time of planting I use old potting soil, and sprinkle a little along the bottom of the trenches, keeping the cuttings in an upright position, and again using a little more of the soil round them, then fill in the trenches with the best of the staple soil. The soil must finally be made firm by treading as the work proceeds. The young plants that were struck from cuttings last season may be taken up, and planted out in an open piece of ground, so as to give them the required space to develope into good-shaped bushes before being required for filling vacancies in the permanent plantations.

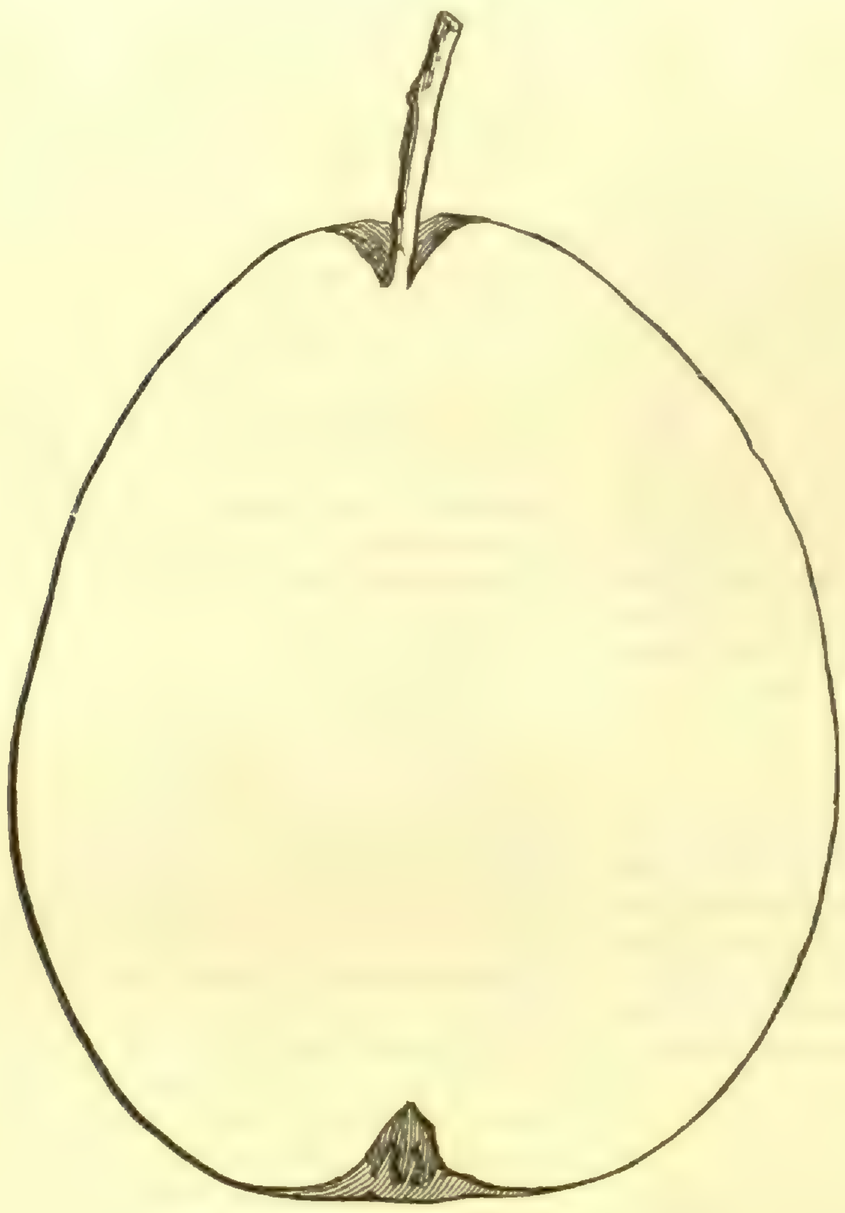


Fig. 69.—pear verulam.

Fig. 70.—pear madame millet. (see p. 322.)

Beheading Trees for Grafting,

Trees that are intended to be grafted, should now have their crowns removed, but should not be cut down too closely at present only so much as to allow of their being cut still further back at the time of grafting. It must be considered to be generally a waste of time to graft very aged, or worn-out trees, the bark of many of the old branches often dying back, thus causing the grafts also to perish. It is the least trouble to grub them up, and replant with young ones, and thus prevent ultimate disappointment. It is merely the trees that are unfruitful and yet vigorous, or varieties that are not suited to the soil and locality, that should be grafted with varieties that are known to be more suitable. Scions for this purpose should have been preserved in damp soil since they were taken off at the time of pruning.

Top-dressing Orchards.

For this purpose use the accumulation of the rubbish yard; we do so, and find this a much better purpose to put it to, than taking it back after decayed, and applying it to the kitchen garden ground, as it is sure to have a certain amount of seeds from weeds amongst it, which cause much labour to exterminate afterwards. This is wheeled out into the orchard in frosty weather, and spread about, after all the prunings are cleared up: afterwards it is levelled with a coarse-toothed rake. The annual dressing with such materials is found to greatly promote fine healthy growth and the swelling of the fruit, owing to the fibrous roots of the trees being induced to keep near the surface of the ground. *E. Ward, Hewell, Bromsgrove.*

Cultural Memoranda.

CELOSIA PYRAMIDALIS COCCINEA.

Plants of this showy annual, and its varieties plumosa and aurea, raised from seed sown now, will develope into highly effective plants by the month of August next. The seed should be sown in fine sandy loam, and be covered lightly with a little of the same, and then be put into heat, placing a square of glass over the pot containing the seed. As soon as the seedlings are large enough to handle prick them out, at 2 inches apart, in a shallow box, filled to within a quarter of an inch of the top with a compost consisting of loam and sweet leaf-mould in equal parts. Water through a fine rose, and place in heat again, and shade the plants from the effects of sunshine for a few days until the roots have taken to the soil, when it should be discontinued. Subsequently pot the plants singly into 3-inch and 6-inch pots before they become crowded, and the roots matted together in the boxes, shading after each potting as advised above, and keeping the plants near the glass, so as to secure a sturdy growth, and well supplied with moisture at the roots and overhead to prevent the attacks of red-spider.

Balsams.

The effect which well-grown plants of this indispensable greenhouse annual produce in the conservatory, &c., during the months of August, September, and October is very telling. Three sowings should be made at intervals of a few weeks from this date, so as to secure a succession of fresh blooming plants throughout the autumn months. The best results will be obtained by sowing the seed singly in the smallest size (thumb) pots in fine soil, and afterwards by shifting the youngplants, as they require more room at the roots, into 4-inch, 6-inch, and 9-inch pots respectively, using a mixture of three-parts good fibry loam (more or less rough, according to the size of the pot used) and one of horse-droppings and leaf-mould, with a dash of coarse sand added. Make the soil moderately firm about the roots when potting. Grow the plants on in a warm pit or hotbed near the glass, and keep them well supplied with water at the roots after the latter have pushed freely into the soil. Damp the plants overhead morning and afternoon on bright days. Admit air freely on all favourable occasions, to insure sturdy and compact plants. All flowers that show should be kept picked off the plants until the time they are wanted to flower arrives, giving diluted liquid manure at the roots during the growing period of the plants. A small portion of the plants should be allowed to flower in 6-inch pots, for use on side stages, vases, &c. If specimen plants are aimed at the branches of the individual plants should be brought gradually over the side of the pots by the aid of crooked sticks or wires. *H. W. W.*

Ireland.

THE SEASON AT GLASNEVIN.

We are experiencing a curious season here, and our plants are coming into bloom in a very erratic manner, but all later than usual. A fine bush of Rhododendron præcox was spoiled by frost on Sunday night last, while Daphne Blagayana by its

side, was uninjured. Rhododendron barbatum and Iris reticulata are also in flower, the former being earlier and the latter later than usual. In 1886 five kinds of Narcissus were in flower on March 1, *e.g.*, N. minor, which opened on February 17; N. major, February 18; N. minimus, February 19; N. pallidus præcox, February 20; and N. maximus, February 22. This season N. minimus opened on the same date as last year, February 19; N. Irish King on February 28, and N. maximus on March 1; the others are not yet in flower. *F. Moore, Glasnevin.*

Double Ard-Righ Daffodil.

Mr. Hartland sends us from Cork flowers of the single form of this fine Daffodil, and also one which is probably the double form of the same variety, the bulb, foliage, and time of flowering being alike. In any case it is a very fine symmetrical double form, referable to the maximus type.

SCOTLAND.

EDINBURGH BOTANICAL SOCIETY.

The Socie met on February 10, at 5, St. Andrew Square, Dr. Cleghorn in the chair. The following communications were made:—

1. "On the American Redwood," &c.
2. Obituary notices of Mr. John Jeffrey, Largo House; and of Dr. W. Traill, of Woodwick, St. Andrews, by Dr. Cleghorn, were read.
3. "Additional Notes on the occurrence of Trichomanes radicans in Scotland," by the Rev. D. Landsborough, Kilmarnock.
4. "On the Fructification of Sphacelaria and S. radicans," with microscopic exhibition, by George W. Traill, Joppa.
5. "Report on the Progress of Vegetation at the Royal Botanic Garden," by R. Lindsey, Curator.
6. "On the Temperature and Vegetation at the Glasgow Botanic Institute," by R. Bullen, Curator.
7. "Exhibits of the Californian Redwood tree, Sequoia sempervirens, with notes of experiments," by Andrew Taylor.

The forests of this tree, which extended over nearly three degrees of latitude on the northern Californian coast, and cover an area of nearly 4125 square miles, were being ruthlessly depleted for lumber supply at a rate and a method contrary to all the canons of scientific forestry. Professor Bolander anticipated that when this Redwood coast belt, 20 miles or so being the usual inland limit, was destroyed, the surrounding country would become a desert similar to that met with on the Pacific Overland Railway route. The ocean fogs would then be no longer intercepted by those giants, whose internal structure seemed specially fitted to transmit them downwards for the fertilisation of the thirsty ground. A transverse section of this Sequoia exhibits walls of fibres uniquely large, more than double the diameter of those of Pinus mitis, or the Yellow Pine of commerce, which is seldom used for external work. Nearly double the quantity of water found in English dried furniture woods had been found in lumber of the Sequoia. The results of experiments of drying Redwood in the steam bath, as well as of other portions boiled in water slightly causticised, was decided warping in both directions, as well as both loss and gain in weight just as the block was treated.

The Temperature and Vegetation at the Botanic Garden, Glasgow.

During the month of January the night temperature fell below the freezing-point nineteen times, the lowest reading being 11° and 10° during the nights of the 5th and 10th respectively. Total night frost, 100°. The day temperature was at or below the freezing-point eight times, the lowest reading being 7° on the 10th. Total day frost, 13°.

After the 19th only 1° of frost was registered, and that during the night of the 31st, the general mean temperature since the 19th having nearly corresponded with the usual records for April and May. The warm wave came on so suddenly, the frost was speedily driven from the ground, of which a rather firm grip had been held since the last week in November.

The wind, rain, and snowstorms were very light, as compared with most parts of the country. As regards vegetation, there is at present every indication of an early spring.

The Temperature and Vegetation at the Botanic Garden, Edinburgh.

The weather during January was upon the whole favourable. Frost was registered on seventeen mornings, indicating collectively 91° for the month, as against 158° for the corresponding month last year. The lowest readings of the thermometer occurred on the 5th, 23°; 6th, 23°; 11th, 22°; 15th, 19°; 17th, 18°. The highest morning readings were, on the 19th, 48°; 26th, 47°; 27th, 49°; 29th, 46°; 30th, 47°. The lowest day temperature was 31°, which occurred on the 5th, and the highest 53°, on the 27th of the month. Comparatively mild spring-like weather ensued from the 17th till the end of the month, which has brought forward the leaf-buds of many shrubs, particularly flowering Currant, Roses, Honeysuckles, Lilacs, &c. Several herbaceous plants have started into growth. So far very little injury has been done to vegetation this winter. Of the forty selected plants, whose dates of flowering are annually recorded to the Society, five came into flower during January, viz.:—Dondia epipactis, on the 13th; Tussilago fragrans, on the 19th; Corylus Avellana, on the 26th; Galanthus nivalis, on the 27th, and Galanthus plicatus on the 31st. None of these had opened by the end of January last year. On the rock garden nineteen species came into flower, amongst which were Geum aureum, Hepatica triloba and angulosa, Primula acaulis veris, Aubrietia deltoidea, Crocus Imperati and suaveolens, Erica herbacea alba, and three species of Helleborus.

Exhibits.

Several species of Orchid flowers were exhibited from W. Sanderson, Esq., Talbot House, Ferry Road.

Bark of Plagianthus betulinus, from New Zealand, resembling the Lacebark, Lagetta lintearia, from Mr. J. R. Hill, Pharmaceutical Society, Edinburgh.

A number of spring flowers, in fine condition, from the open air, including Rhododendron Nobleanum × and Veronica Andersoni, in full flower, from Mr. J. Campbell, Ledaig, Argyllshire.

North of Scotland Horticultural Association.

The usual monthly meeting of the members of this Society was held in the Christian Institute, Aberdeen, on the evening of February 18. There was a good attendance, and Mr. Alexander Grigor, head gardener, Fairfield, occupied the chair.

A communication was read by the Secretary from Mr, J. Maitland, Cawdor Castle, Nairn, on "The Geographical Distribution of Plants." The paper related chiefly to the distinctive flowering plants that are peculiar in different countries.

An elaborate paper on "Herbaceous Perennials" was then read by Mr. Cunningham, Kintore Nurseries. In the course of his paper Mr. Cunningham spoke of the great development of these plants during the last thirty or forty years, and to their suitability for decorative purposes. They were usually very hardy out-of-doors, and were less troublesome and less expensive than many of the more fashionable varieties of plants. The paper concluded with a brief description of various herbaceous perennials.

An animated discussion, in which many of the members took part, followed the reading of each paper, and the thanks of the Society were accorded to the contributors of the papers. A specimen of the Primula that had been in flower all winter was sent by Mr. Peter Harper, Duthie Public Park, Aberdeen, for inspection. It was intimated that the next meeting of the Association would be held in the Aberdeen University Buildings, when a lecture on "Worms" would be given by Professor H. Alleyne Nicholson (Chair of Natural History). A cordial vote of thanks to the Chairman terminated the proceedings.

Fyvie Horticultural Association.

The spring show of this Association was held on Friday, February 25, in the Town Hall, Fyvie, Aberdeenshire, and was attended with great success. The exhibits were tastefully laid out on three rows of tables running along the entire length of the hall. On the platform was placed a magnificent white Camellia, sent by Mr. Frank Stewart, gardener, Rothiebrisbane.

Hyacinths were shown by Mr. William Beattie, Gordonstown, and were very fine; the Tulips and Lily of the Valley sent by Mr. A. Milne, Fyvie Station, were also good.

Mrs. Forbes, Mains of Fyvie, showed Snowdrops and Hellebores.

There was a fine display of Cinerarias, specially worthy of notice being those sent by Mr. Beattie.

Mr. Milne was 1st for Camellias and greenhouse plants and basket of vegetable; Mr. William Sim had the premier position for Potatos, and Mr. James Beaton, Little Millbrex, for Carrots. Leeks were best shown by Mr. Beattie.

Amongst the other successful competitors were Rev. Dr. Milne, Mr. D. W. Greig, and Mr. A. W. Horn, Mill of Tifty.

NOTICES OF BOOKS.

HANDBOOK OF PRACTICAL BOTANY FOR THE BOTANICAL LABORATORY AND PRIVATE STUDENT. By E. Strasburger. Edited by W. Hillhouse, M.A., F.L.S. (Swan, Sonnenshein & Co.)

Till comparatively recently botanical teaching in this country consisted mainly in the delivery of a formal course of lectures, which were little else than a condensation of some favourite text-book. Illustrative specimens were supplied to the student more or less freely, and occasional excursions were made. Anything like demonstration or practical work was, except in a very few cases, not attempted. Now-a-days we seem drifting into the opposite extreme. The student is made or encouraged to work for himself and see for himself, and nothing could in it way be more admirable than this. The defect of the system lies in the circumstance that it is impossible for the student to see for himself more than a very limited portion of the subject, and in the fact that too scanty provision is made for acquiring a general survey of the whole subject, and so pupils come up for examination replete with proto and pro cambium, teleutospores and microsporangia, but hardly able to give the botanical distinctions between a Cabbage and a Cucumber, and with the vaguest appreciation of natural affinities. Morphological conceptions, indeed, have been vastly clarified, and their basis greatly widened by the modern systems of research; but the ordinary student (as distinguished from the expert) is little the better, if not worse off than under the old system, for his labours are so concentrated on a few things—types so called—that he has little opportunity of applying them generally. While formerly too exclusive attention was paid to flowering plants, to the neglect of the so-called Cryptogams, and to the inadequate consideration of anatomy and physiology, now the converse error is committed by unduly neglecting general botany and the structure and affinities of flowering plants.

The present work is a translation of Professor Strasburger's excellent laboratory handbook. Commencing with an account of the instruments and other means of research, the pupil is led on by easy stages from such simple matters as the recognition of starch grains to the investigation of the embryo sac, and the subdivisions of the nucleus. For comprehensiveness and general grasp of the entire

subject this is the best of the manuals of practical botany, and we heartily thank Professor Hillhouse for rendering it available to the English student.

OUTLINES OF CLASSIFICATION AND SPECIAL MORPHOLOGY OF PLANTS. By Dr. Goebel, &c. Translated by H. E. Garnsey, and revised by J. B. Balfour, M.D. (Oxford: Clarendon Press.)

This volume is a translation from the text of Professor Goebel. Goebel himself revised and recast the second book of Sachs' famous *Lehrbuch*, so that what we have here is in reality an English version of a new edition of that portion of Sachs' textbook relating to special morphology, and we may at once say of it that it is indispensable. The history of the English versions of "Sachs" is curiously analogous to the development of botany itself in these later days. It is the history of a transition period. The old ways of looking at things are not entirely obsolete; the new ones do not yet wholly predominate. In consequence there is a certain amount of confusion, a want of system and method, which embarass the students of an older generation and prevent those of later date from obtaining a firm grasp and clear insight of the subject. The successive editions of Sachs, and in particular the French version of Van Tieghem, have done much towards improving matters, but even now Sachs is by no means an easy book for a student to read. The present version of an important section of the original work is the result of an honest effort to crystallise heretofore diffused and mechanically mingled statements into one consistent whole.

The results may prove startling to the older race of students, but there can be no question that the newer ones will gain immensely. The unity underlying superficial variation was of course insisted on by ante-Darwinian naturalists, and formed the essence of Göethe's teaching, but, speaking broadly, it was confined, so far as plants are concerned, to the higher groups—the flowering plants. It is to Hofmeister in particular that modern botany owes the ideas, and, to some extent, the demonstration, that there are no impassable barriers between the so-called flowering and flowerless plants. Increased knowledge has filled up many gaps, and though many are still unbridged, and some may possibly remain so, yet, on the whole, it is evident that there is one series of organisms, profoundly modified and varied, it is true, but still essentially one. The process of fertilisation, for instance, is in essence the same in the white rust of a Cabbage (Cystopus) as in the Cabbage itself. One consequence of this is, that the old terminology must either be completely revised or wholly abandoned.

To employ a dozen or twenty different names was permissible all the time it was supposed that they applied to as many different things, but now that this is proved not to be the case, it is obvious that the application of a multiplicity of names to things essentially similar or identical is a most serious inconvenience. It is indeed one of the greatest hindrances to the progress of botanical science at the present day. Professor Goebel and his English collegues are to be congratulated on their attempts to remedy this state of things To call an anther a microsporange and a pollen grain a microspore, may embarrass those who devote themselves wholly to flowering plants; but it will be a boon to the student who wishes to gain a general knowledge of plants, and who will thus at once learn the mutual relationships of various groups of plants which otherwise he might look on as isolated groups. In the same way, to speak of a macrosporange and a macrospore may sound unfamiliar to those who have been accustomed to speak of ovule and embryo sac, but no one will doubt the wisdom of the change when he learns that the "ovule" and "embryo sac" are no special attributes of flowering plants, but exist, it may be under another guise, but exist all the same, in other groups of plants. This differentiation of the "sporange," indeed, involves great changes in our ideas of morphology.

The parts of the flower have been treated as specialised leaves, and so, indeed, they are, but the essential parts of the flower are this, and something more—they are leaves, with sporanges in addition. To discuss these matters would, however, lead us much too far. We must content ourselves with merely indicating them, as among the consequences of the modern way of looking at things. Neither in these pages can we venture to enter upon points still open to dispute. A *lapsus* at p. 321, allowed to remain uncorrected in all the editions, may be incidentally mentioned. No species of Pinus (in the sense in which the word is used here) has spirally arranged leaves in two comb-like rows. The inclusion of some notices of Professor Bowers' researches on Phylloglossum and on Apospory in Ferns is most appropriate, as being in harmony with the object of the book.

An excellent feature of the present volume is the explanation of terms, and especially of their synonomy. This is a great boon to students, although the definitions in some cases—*e.g.*, of Apospory and Apogamy—are hardly sufficiently clear. Goebel's term, "dorsiventral," might be rendered by the simpler term bifacial. Hypocotyl is a barbarous and unncessary neologism for "caulicle" or "tigellum," neither of which is mentioned, though both are prior to hypocotyl. Macrospore is too firmly established to be disturbed, otherwise megaspore would be more correct.

FORESTRY IN FRANCE. By Major Bailey, R.E.

Major Bailey's pamphlet is mainly concerned with forest management and conservancy as a whole. In this country woodlands form no more than 4 per cent. of the total area, as contrasted with 29 per cent. in Europe generally. Moreover, what woods we have are, for the most part, in private hands, and so there is little need for a special system of conservancy under Government control. In India, however, such an institution has been in working for nearly a quarter of a century, and with admirable results. Similar advantages would probably accrue in Ireland were the State to become possessor of the waste land, and commence planting on a large scale, as has been already done tentatively in the Isle of Man. Supposing this to be done, some organisation would be necessary, and Major Bailey's pamphlet detailing the system followed in France would then be found very serviceable. Our present Indian forest officers have, it may be remarked, received their practical training at French forest schools.

On all accounts, then, Major Bailey's pamphlet, which is a reprint from the *Transactions of the Scottish Arboricultural Society*, forms an acceptable addition to the library of those interested in woodland management. It deals with the demarcation survey, systems of culture and products of forests, together with notes on finance and forest laws and customs. It gives details of the process of afforestation on mountain slopes, in waste places, swamps, and dunes, where it is done either by the State or by private individuals, to whom compensation is given by remission of taxation or otherwise. The organisation of the staff and of the forest schools at Nancy and Barres is also described. Acknowledgment is due to Major Bailey for having thus placed within easy reach information of so much value.

Ginseng in the Corea. — It is stated in a recent report on the trade and commerce of Corea that the annual production and sale of red Ginseng is a Government monopoly, and is farmed out to a number of merchants attached to the annual overland Corean Mission to China. Capital punishment is inflicted on any other person found trafficking in the article. Notwithstanding this heavy penalty, smuggling is rife. The value of red Ginseng leaving the country annually has been estimated at over 400,000 dollars, or some £80,000, and this amount equalises the balance of trade.

Home Correspondence.

ALTON TOWERS.—Mr. Kemp's agreeable contribution, p. 281, and his not unkind criticism of my article on Alton Towers, remind me that many years ago a very attractive book was presented to me by a friend who wrote therein, "From one who knows his tastes." This volume, which I still prize, was a work then newly written by Mr. Kemp on landscape gardening, and if I am able to describe, with any degree of justice, the beauties and defects of a place like Alton Towers, I am mainly indebted to the just principles of taste expounded in that volume. The conservatories which Mr. Kemp saw in the glen below the house "more than forty years since" are of ornate architecture, but they are not now too conspicuous, as they may perhaps have been when newly erected. There is nothing obtrusive in the artificial ornaments of the glen at the present time. Nature is Queen there now, and I think the illustrations accompanying the article showed the features of this beautiful place very faithfully. *H. E.*

A COLUMN FOR YOUNG GARDENERS.—At the last meeting of the Chiswick (Royal Horticultural Society) Mutual Improvement Association, Mr. Alexander Dean delivered an instructive and practical address on "Character in Gardeners," and under the heading of "literary character" threw out what I conceive to be a valuable suggestion, in this form:—He advised young gardeners to cultivate more generally than is at present the case the art of communicating their ideas, from observations of daily routine, to the horticultural Press, as a means not only of improving their style of composition, but with the more laudable object of quickening—bringing into play—their powers of observation; and with this desirable end in view he suggested that editors of horticultural papers should set apart a column for young gardeners, wherein the young aspirants to fame might relate their experiences, &c., with great mutual advantage, and to the general good. No doubt there has been a "shyness" on the part of younger members of the craft in taking up literary work; an editor, in their eyes, is a dreadful being—hard to please!—but this is a fallacy. May I therefore suggest that the Editor of the *Gardeners' Chronicle* should establish a column for young gardeners? *B.* [Our columns are open to young gardeners as many of them know, but we cannot surrender editorial discretion. Ed.]

Tender Plants in the Island of Arran.—I have to-day (February 22) been in the island of Arran, and it may interest some to hear of the state of the gardens there. A Fuchsia (F. macrophylla) was still in bloom, as was also a Carnation; while the Holly-like Desfontainea spinosa, which had begun to bloom in July, still displayed one of its crimson and yellow tube flowers. Along with these, which may be called the last flowers of the previous year, Snowdrops, Hepaticas, the yellow Jasmine (Jasminum nudiflorum), Kerria japonica, and Berberis Darwinii, were also in bloom, though the most forward flower of the Berberis would not be fully out for a couple of days. I was glad to see that the severe frost about the New Year had not injured the Grass-tree (Xanthorrhœa arborea) nor the Bottle-tree (Brachychiton diversifolium), both of Australia. Being young plants they have received a little protection; but the Ferns, Dicksonia antarctica and D. squarrosa, as also Todea superba and T. hymenophylloides, were luxuriant without any. The rare Gum-tree (Eucalyptus alpina) now 6 feet 9 inches in height, shrubby to the ground, and with a circumference about equal to its height, has already made growths of 3½ inches. The buds of Camellia Donckelaari are beginning to burst; while the shining crimson-coloured young leaves of Photinia serrulata are 3½ inches in length. *David Landsborough, Kilmarnock.*

A JUBILEE ORPHANAGE FOR GARDENERS' CHILDREN.—I trust Mr. Penny and others who are advocating and working for this will be successful. It would be in no sense a rival to the Gardeners' Benevolent Institution, for the ministry of the orphanage would begin where the help of the other ceases—with the death of the parents. Perhaps no class need to do more, but are able to do less, for their families than gardeners. The educational efforts they make on behalf of their children mostly strain their resources to the uttermost, and not seldom wholly

their means. Hence, when sudden death overtakes the breadwinner the children are at once face to face with dire poverty and sore distress. No one conversant with the family history of gardeners but must have known many heartbreaking cases of suffering and sorrow brought upon their children through no fault of their parents. The means of the latter at best only suffice, and very often barely that, to meet the daily wants of their families. To provide for a rainy day is utterly impossible with a family of from four to six to feed, clothe, and educate. In fair situations with the exercise of man's art, industry, and unlimited thrift, the problem of making two ends meet may be solved. But sudden or unexpected death brings untold suffering to the children. The present agricultural depression has made matters worse. It has hit gardeners and their families even harder blows than farmers. Only this morning I heard from a married gardener, with a sick wife and family, who has been out of place for three years. He is a good gardener, has been at or in the business for thirty years, and never made more than bare bread and cheese. Should disease or death overtake him, his children are not only orphaned but pauperised at once; and I could name others, in or out of place, crippled by disease or insanity in their families, and nothing between their families and the union but a father's fast-failing strength, or a mother's endurance of hard drudgery. Gardeners, if they had the means, would support an orphanage for themselves with no niggardly hand; but I doubt our possessing sufficient means. It may be done if commercial horticulture comes strongly, as it promised, to our aid. Possibly, too, the Queen herself might think well to give a portion of the women's tribute of affection for her person and loyalty to the throne towards such a truly royal and womanly purpose as the lightening the lives of the orphans of poor gardeners. What is most needed, if possible, is such contributions down at once as should make the orphanage as far as possible independent of annual subscriptions. *D. T. Fish.*

—— I have read with much pleasure and satisfaction the excellent articles on this important subject by "H. J. C." and Mr. C. Penny, of Sandringham, published in the *Gardeners' Chronicle* of February 12. I think the remarks there made commend themselves very strongly to the earnest and thoughtful attention of all members of the gardening fraternity as a fitting subject for their warmest sympathy and support. In this Jubilee Year of the reign of our beloved sovereign, Queen Victoria, I am of opinion that the establishment of a gardeners' orphan home would afford great pleasure and satisfaction to the Queen, as a memorial, from the gardeners of the United Kingdom of the fiftieth anniversary of her reign. The Queen has always taken a warm and generous interest in the welfare of her subjects, her ear has ever been open, and her heart has ever sympathised with their sorrows and distress. To know that an orphan home for gardeners' children had been established would, I think, give great pleasure to Her Majesty. I sincerely trust that this praiseworthy undertaking will commend itself to gardeners of all ages and grades, and that a strong and united effort will be made by them in furtherance of this most desirable object. Let us all pull together, and try to help the distressed orphans of our brother gardeners in the same earnest spirit shown in securing the Pension Augmentation Fund of the Gardeners' Royal Benevolent Institution. There are many charitable ladies and gentlemen, who would, I feel sure, render great assistance if they only saw that we were striving to carry out the object so earnestly and eloquently advocated by "H. J. C." and "Mr. C. Penny." I shall be very glad to render what small assistance I can, and should the scheme be fairly started, I will do my best to secure the co-operation and support of others in the district in which I reside. *W. G. G., North Derbyshire.*

—— The idea of "H. J. C." and Mr. Penny (p. 219) in reference to this mode of commemorating the Jubilee of Her Majesty has been hailed with pleasure by all the gardeners to whom I have spoken, and exactly the reverse has followed upon the remarks of "W. H." (p. 257). Not that any of the gardeners entertain adverse opinions about the Royal Horticultural Society, but they evidently consider the suggestion of Mr. Penny as an undertaking more intimately connected with themselves. Many of us are well aware of the great advantages that have accrued from the establishment of institutions similar to the one proposed, and I cannot understand why the one proposed should not be productive of as good results. Your correspondent, "W. H.," as a champion of the Royal Horticultural Society, has, to my mind, chosen a mode of argument likely to produce the opposite result of what he desires, for, although he considers the annual subscription Mr. Penny suggests a modest one, yet with emphasis, he states that he is sure he would never get it and he knows they would not give it. I have met with very many gardeners in my time, but never with one who would hesitate to pay such a trifling sum for such a laudable object. To me it seems a contradictory argument for "W. H." to say he will give £5 to the Royal Horticultural Society, although he is a poor gardener, as soon as a Treasurer is appointed; and yet he assumes to know that others would not give anything. The annual subscription suggested by Mr. Penny would make it easy in twenty years for both journeymen and head gardeners, who can pay something more than fractions over a halfpenny and penny per week. Here, in the nursery, amongst head gardeners, married and bachelor, also foremen as well as journeymen of an advanced standard, the opinion is unanimous, that even out of nursery wages the modest sum suggested by Mr. Penny could be paid; therefore it seems to me that "W. H." will have to find some other reason why a gardeners' orphan home should not be a success; and if a united effort only is made I will, though only a poor gardener, be a liberal subscriber. *Thomas Reid, Upton Nurseries.*

DETERIORATION OF POTATOS.—I have been greatly interested in the correspondence on this matter, and agree with most that Mr. C. Dimmick writes on the subject (p. 290). While, however, accepting his antidotes to deterioration as in the main effective, I have met with a curious local case of deterioration which has greatly puzzled and disappointed me this winter. A quantity of Rose and Magnum Bonum Potatos were lifted early in October and carefully stored on the floor or shelves of a cool cellar. At first the Rose Potatos were of good quality; gradually they rapidly deteriorated, until one end—that in which the eyes are mostly found—became so wet as to be almost worthless. This did not arise from any amount of growth, for the samples of Rose remained abnormally dormant until consumed. The most surprising part of the matter remains to be told. The Magnum Bonum looked sound and good, but the very first cooking revealed the same features—wet and worthless eye end, the middle and other end being of fair quality. This, however, is not up to the usual average of good Magnum Bonums, and now and again, in the vicinity of the eyes, hardish lumps of inferior quality are found. The Potatos were grown on fair loam, with a light coating of spent Hops, damaged grains, and other refuse from a Swiss brewery. This dressing was applied on the level ground in winter, the ground ridged up in deep ridges 2 feet between the crowns. The Potatos were planted in March in the deep mellow furrows, and the ridge split over this with a spade. Could this dressing, which smelt vilely, affect the quality of the Potatos? Though a grower of the tuber for nearly half a century I have never met such a case of peculiar and partial deterioration. *An Old Hand.* [Obviously the "eye end" was in the state of unrest preliminary to growth. Ed.]

PLUMS AND PEARS IN POTS.—Trees of the above that are cultivated for a late supply of fruit may at present remain in their winter quarters out-of-doors; their buds, however, are now making considerable progress, and for their safety the trees' removal to the orchard-house must necessarily soon take place. Throughout the winter we plunge the pots containing our trees up to their rims in beds of sifted ashes, and mulch the surface of the soil with spent Mushroom dung; the pots are placed on slates to prevent the ingress of worms, and as we usually have a heavy rainfall slates are also placed over each pot to prevent the soil from becoming unduly saturated. We find enough water is conducted to the roots by the stems to keep the soil sufficiently moist for the welfare of the trees. As we are in the vicinity of large woods bullfinches are here numerous, but being influenced by articles in *The Animal World* we refrain from the use of powder and shot, and substitute nets, keeping the trees free by a framework of work; in this way we defy these depredators. When trees of this kind are placed under cover, they should be syringed overhead every fine day until the blossoms commence to expand, and the structure must be freely ventilated on all favourable occasions. Artificial heat should on no account be brought into use, unless to prevent injury from frost, or to keep the pollen dry during spells of damp weather; and if there is any doubt about the fruit setting, a camel's-hair brush may be run over the blossoms at mid-day to distribute pollen. We have frequently taken this precaution, but since keeping bees it has become unnecessary, for these industrious workers find their way to the trees in vast numbers. During the time the trees are in bloom syringing must be discontinued, to be resumed as soon as the fruit is formed. Plums, particularly, invariably set very thickly and may be thinned early with the Grape scissors; Pears are more precarious, and their thinning should be deferred until it can be seen which fruits are taking the lead in swelling. It is advisable to fumigate immediately before the blossoms commence to expand, to avoid an attack of aphis during the flowering period, and subsequently on the first appearance of the pest. When the trees are not plunged in the orchard-house, close watchfulness must be exercised in keeping them well supplied with water, so that no check accrues from drought at the roots, and after the fruit commences to swell diluted liquid manure and concentrated manure may be safely used liberally, for both Plums and Pears are gross feeding subjects; care, however, must be taken to keep clear drainage, top-dressings of rich decomposed manure should also be afforded. Disbudding and the stopping of shoots should be attended to cautiously and be done by degrees, while another all-important matter to observe is to allow each specimen adequate space to grow in, and free exposure to the sun. *Thomas Coomber.*

TREATMENT OF STRAWBERRY PLANTS AFTER FRUITING.—When the fruit has been gathered from the plants of the respective varieties they (the plants) should be put into a cold pit to become hardened off preparatory to planting out the desired number of each variety in a well prepared piece of ground a few weeks hence, using only strong healthy plants for this purpose. Plants the reverse of these should be thrown on the rubbish-heap. If good plants of Vicomtesse Héricart de Thury are planted in a warm border in rows at 20 inches apart, and the same distance from plant to plant in the row, and afterwards a surface-dressing of short dung be laid on between the plants, they will bear a good crop of fruit in the autumn. And in order to supplement the supplies of fruit obtained from plants so treated a goodly number of the best forced plants of the same excellent variety should be repotted and well cared for during the summer for fruiting under glass late in the autumn. *H. W. Ward, Longford Castle.*

EUCHARIS GROWING.—In growing Eucharis to perfection, with very simple treatment we have had them in bloom from September until the present time—plants carrying seventeen spikes of fully developed blooms of five and six to a spike. We find that liquid manure from the stable with soot mixed is better than any chemicals yet tried. Many gardeners use chemicals, which give the plants a temporary spurt, but fail to give satisfaction for any length of time. Our bulbs are of a very fine size, and the foliage healthy. The compost used consists of turfy loam, leaf-mould, and sharp sand. *W. Bridges, Croydon.*

ROYAL JUBILEE EXHIBITION, MANCHESTER.—The decorations of the principal transept of the above, with its length of 1022 feet, and height of 56 feet, have been entrusted to the Liverpool Horticultural Company (John Cowan), Liverpool. Across the centre is another transept, 370 feet long; and at the intersection a dome, rising to the height of 140 feet, with a diameter of 90 feet, around which is to be erected a rockery, 9 feet in width, by William Clapham of Stockport. Four groups, 25 by 15 feet, and a height of 30 feet, are to be arranged at intervals on either side of the rockery. The plants employed will consist chiefly of Palms, Tree Ferns, Dracænas, and other large ornamental and flowering specimens, which will give the whole an imposing and pleasing effect. *R. G. Waterman, Woolton, Liverpool.*

JUBILEE TREES.—Having been asked what are the best trees to plant in commemoration of the Queen's jubilee, I would suggest the following:—Abies Albertiana, A. Nordmanniana, and A. nobilis, specimens of which I have seen from 30, 50, 60 feet and upwards, and perfectly uninjured by the late severe snowstorms. I find the Pinus Laricio or Corsican Pine, also the austriaca and Scotch, have

stood well, but Arbor-vitæ, Cupressus, and other evergreens had a severe time of it. I could swell the list with other grand specimens, but nothing to beat the three as recommended, in my opinion. *J. M.* [There are many species of deciduous trees that reach a great age and make fine objects from which a selection might be made. Ed.]

BULLFINCHES, SQUIRRELS, AND FRUIT TREE BUDS.—Having been a sufferer from the ravages of the bullfinch, I have been obliged reluctantly to declare vengeance against them almost every spring, although I made a pet of one in confinement for ten years. It had many amusing antics. Like your correspondent at p. 219, I can bear testimony to the cleverness of the bullfinch in choosing its food. We have no standard Plum trees, and so far they have not done much harm to the wall trees. The first attack they make here is on the Kerry Pippin Apples, and unless watched they destroy every bud in a very short time. The next plant is a Braddick's Nonpareil Apple. This tree is so near a wood, and the bird so sly, that we rarely ever save any of them. The farmers and cottagers suffer very much from the bullfinch. Here his cleverness again steps in; he does his work so quietly, and is not seen, that the poor sparrow, beside its numerous other faults, gets the blame for picking out the buds. We have another amusing little animal, the squirrel, which makes great havoc among the Nuts, and they are not at all particular about coming over the garden wall slyly, and carrying off the Apricots, so that war has to be declared against them also. They do much harm to the Coniferous trees in winter by eating out the points of the leading shoots. *W. C., Thorpe Perrow.*

ANEMONE HORTENSIS (A. STELLATA) IN VARIETY.—For cutting or show, at this time of the year, when all outdoor flowers are scarce, probably in the whole floral range there is no other to compare in brilliancy with this. I have more particularly in my mind the scarlet-crimson variety, though the blue is also worth growing, and still more the double crimson. I was speaking lately to two intelligent gardeners, both of whom fail to grow it robustly in great masses, as I see it occasionally around here. One attributed his failure to the same grub or larvæ [Weevil], found in some loams, that eats off the roots of Cyclamen, Begonias, &c.; the other blamed his rather sandy calcareous soil, in which they seldom succeed. I cannot say I grow them myself to my satisfaction—certainly not so well as some others I know. There are most diverse opinions as to culture, one maintains the beds should be re-made and the corms lifted every year; another the contrary. Would some reader who succeeds, fully give his experience and reasons? *W. J. Murphy, Clonmel.*

THE WEATHER.

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING MARCH 12. (AVERAGE OF THIRTY-THREE YEARS.)

March 6	41°.3	March 10	41°.8
" 7	41°.5	" 11	42°.0
" 8	41°.6	" 12	42°.1
" 9	41°.7	Mean for the week	41°.7

THE PAST WEEK.

The following summary record of the weather for the week ending February 28, is furnished from the Meteorological Office:—

"The *weather* has been dull and unsettled in the extreme N. and N.E. of Scotland, and partially so in Ireland; but in all other parts of the kingdom the conditions have been generally fair and dry, especially over E., central and S. of England.

"The *temperature* has been above the mean in all districts, the excess ranging from 5° to 7° in Ireland, Scotland, and the N.E. of England, and from 1° to 3° in the other English districts. The highest of the maxima, which were generally recorded either on the 27th or 28th, varied from 54° in the 'Channel Islands' to 59° in 'Scotland, E.,' and 'England, N.E.,' and to 61° in 'England, S.W.' (at Llandovery). The lowest of the minima, which were registered during the latter part of the period, varied from 23° in the E., S., and N.W. of England, to 32° in 'Ireland, S.,' and to 35° in the 'Channel Islands.'

"The *rainfall* has been more than the mean in 'Scotland, N.' and 'Ireland, N.,' but less in all other districts. Over the greater part of England the fall has been scarcely appreciable.

"*Bright sunshine* has been less prevalent in the N. of Scotland than it was last week, but elsewhere a decided increase is shown. The percentages of the possible amount of duration ranged from 17 in 'Scotland, N.,' and 18 in 'Scotland, E.,' to 38 in 'Scotland, W.,' to 50 in 'England, S.W.,' and to 54 in the 'Channel Islands.'"

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 42° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Above or below the Mean for the week ending Feb. 28.	Accumulated. Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 4, 1887.	Below 42° difference from Mean since Jan. 4, 1887.
Principal Wheat-producing Districts.		Day-deg.	Day-deg.	Day-deg.	Day-deg.
0. Scotland, N. ...	6 above	27	6	+ 30	— 31
1. Scotland, E. ...	7 above	36	9	+ 39	— 26
2. England, N.E. ...	5 above	38	13	+ 26	+ 20
3. England, E. ...	1 above	23	35	— 20	+ 83
4. Midland Cos. ...	2 above	40	22	+ 7	+ 67
5. England, S. ...	1 above	31	17	— 7	+ 56
Principal Grazing, &c., Districts.					
6. Scotland, W. ...	5 above	25	5	+ 12	— 16
7. England, N.W. ...	3 above	31	11	+ 7	+ 38
8. England, S.W. ...	1 above	30	9	— 30	+ 57
9. Ireland, N. ...	5 above	36	3	+ 31	— 11
10. Ireland, S. ...	5 above	40	0	+ 19	+ 9
— Channel Islands	2 above	29	0	— 48	+ 33

Districts.	Rainfall. More or less than the Mean for the Week.	No. of Rainy Days since Jan. 4, 1887.	Total Fall since Jan. 4, 1887.	Bright Sunshine. Percentage of possible duration for the Week.	Percentage of possible Duration since Jan. 4, 1887.
Principal Wheat-producing Districts.	Tenths of Inch.		Ins.		
0. Scotland, N. ...	1 more	39	9.6	17	16
1. Scotland, E. ...	3 less	27	3.6	18	25
2. England, N.E. ...	4 less	22	2.0	42	27
3. England, E. ...	4 less	20	2.0	47	32
4. Midland Cos. ...	5 less	21	2.5	48	28
5. England, S. ...	5 less	21	2.5	43	24
Principal Grazing, &c., Districts.					
6. Scotland, W. ...	1 less	31	7.8	38	22
7. England, N.W. ...	1 less	25	3.9	43	25
8. England, S.W. ...	7 less	26	3.6	50	29
9. Ireland, N. ...	2 more	29	5.4	41	26
10. Ireland, S. ...	3 less	27	5.7	47	30
— Channel Islands	6 less	27	3.3	54	39

Obituary.

JAMES VAIR.—We regret to have to announce the death of Mr. James Vair, who was for upwards of thirty years the highly respected and well-known gardener of Lady Dorothy Nevill at Dangstein, and more recently at Stillyans Tower, Sussex. For some time past Mr. Vair's health has been much impaired, and his suffering had lately increased very considerably, the cause being cancer in the bowels. He died at Stillyans Tower, Heathfield, on the 24th ult., aged sixty-two. We believe that Mr. Vair was born at Faldonside, near Melrose, where his father was gardener. He was also some time in the garden of Sir Walter Scott at Abbotsford, and Mr. Vair's grand-uncle was the famous Tam Purdie, the witty factotum of the great novelist. Mr. Vair may be said to have died at his post, for he was taken ill when engaged in cutting Raspberry canes, was carried into the house, and died shortly after. *Journal of Horticulture, March 3.*

ENQUIRIES.

"*He that questioneth much shall learn much.*"—Bacon.

Cymbidium pendulum purpureum. — During the past four years I have been trying to induce a large specimen plant of the above to flower, but hitherto I have failed. It is a fine healthy plant, and is now throwing up about a dozen strong breaks. I should be glad if any of the readers of the *Gardeners' Chronicle* would kindly give their experience to *Orchid Grower.*

NOTICES TO CORRESPONDENTS.

Intelligent Readers, do please Note.—*Letters relating to* Advertisements, *or to the supply of the Paper, should be addressed to the* Publisher, *and not to the Editor.*

*** All communications intended for publication should be addressed to the "*Editor.*" Such communications should be *written on one side only of the paper*, and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Burridge Fund.—Mr. Burridge, writing to Messrs. Jacob Wrench & Sons, says that he is in hopes of being able to procure some light employment such as check clerk in a warehouse, or time-keeper, care-taker, foreman in a seed firm, or some similar occupation. "We trust Mr. Burridge may meet with some appointment of the kind, as we learn that he has secured the sympathy of all who knew him in more prosperous times."

Drying Plants: *A. P.* Procure some sheets of thin wrapping-paper, curl-paper will do very well. Make some thick drying pads of six or eight pieces of old newspaper cut to a suitable size (not too large) and fastened together at the corners; or by preference, if you can procure it from the oilman, some of the thick felt-paper used for laying under carpets. One or two sheets of this will form an excellent drying pad. Take your specimen and spread it out carefully on one of the sheets of thin paper. Put with it a label with the name of the plant, the source whence derived, the date (do not forget this), and any other particulars you think fit. Place the sheet of thin paper with the specimens in it between two drying pads at the bottom and two at the top. Then place in position another sheet with specimens and proceed as before. When your pile is of a convenient height, say 18 inches or 2 feet, place on the top of it a heavy weight. Next day have ready some more drying pads. If possible let them be thoroughly heated before the fire. Take the specimen sheets out from between the old pads and place them, without disturbing the specimens more than can be avoided, between the new pads. Do the same the third day. At the expiration of a week, or even four or five days, your specimens will be dried. The more frequently you change your drying pads, and the hotter you make them, the quicker and the better will your specimens be dried. In many cases it will be enough to change the drying pads every other day. Very fleshy plants will of course take much longer to dry than others, but you will soon find out by experience how to regulate your proceedings according to the nature of your specimen.

Early Forced Vines: *L.* If the Vines be not over-cropped, and are not subject to the conditions usually associated with shanked Grapes—viz., deep,

damp, and rich borders, in which the points of the feeding rootlets are produced late in the season to perish annually in the winter—your Vines, although they may be started in November, should continue to produce good useable fruit for five years, or even longer; but much will depend on the condition of the roots and the treatment of the Vines after the fruit is cut.

Gardeners' Benevolent Institution: *F.* Yes, Rule 6 provides that "those who have been on the books of the Institution as a *life member for fifteen years*, or the widows of such persons, shall be considered eligible;" and goes on to say that such "applicant would be appointed pensioners in preference to the other candidates," subject to certain other rules duly set forth, but which do not invalidate our statement. Thus a life subscription of ten guineas paid fifteen years before application for a pension would, other things being equal, entitle the applicant to the same chances as one who had subscribed annually one guinea for the same period.

Insects: *G. P. B.* The insects you send are millipedes, not mites, but they are very destructive to roots.

Melon: *H. B. S.* When the fruits are ripe send one or two to the Royal Horticultural Society's meeting to be adjudicated upon. Mr. Barron, Garden Superintendent, Chiswick, will furnish any information of which you may stand in need. If the fruit be found to be of superlative quality you will find no difficulty in disposing of the seed.

Moore Memorial Fund: Received communication from G. B. Wollaston.

Names of Plants: *Cymro.* 1, Libonia floribunda; 2, Habrothamnus fascicularis.—*Anxious Enquirer.* Sprekelia formosissima; 2, Zephyranthes carinata.—*S. Clarke.* Bletia hyacinthina; Phaius maculatus; Dendrobium speciosum; Cœlogyne flaccida.—*Mrs. S. N.* Freesia refracta var. alba.—*S. S.* Eria striata.—*E. C.* Masdevallia triangularis; Cypripedium barbatum.—*W. W.* Both forms of Cattleya Trianæ, but neither of them remarkable.—*B. Z.* Leucoium æstivum.—*L. J. F.* Petrea volubilis.

Odontoglossum: *J. McPhail.* The flower would be liked by many, but would not be thought of much value by the knowing ones.

Plant Life: *P. T. I.* 1. The natural orders mentioned are given in Henfrey's *Elementary Course of Botany*, Van Voorst. No such list has been given in the *Gardeners' Chronicle.* 2, 3. Refer to the same work, or to any text-book, for the nitrogenous and non-nitrogenous compounds, and for the illustration you require. 4. Perhaps; but we do not know of any experiments directly bearing on the point. The doings of a plant in life are very imperfectly known. Most of our knowledge is derived from the plant when burnt and dead, which, after all, affords only an indication of what may have happened during life.

Potato Tercentenary at Youghal: *M. B.* We know nothing whatever about the matter.

Soils: *H. B.* Neither samples are of a nature to make a Vine border, but are quite suitable for plants in pot—Melons, Pines, Strawberries, &c. Weak brine will destroy the fungus.

When Zonal Pelargoniums may be Trusted in an Unheated Greenhouse: *J. M.* In a mild spring the plants could safely be placed therein at the commencement of April, the sun's heat being utilised by closing soon after 3 o'clock, P.M. On cold nights recourse must be had to mats laid over the lower part of the roof and front lights.

Young Gardeners: *F. W. B.* Much has been done in these pages in the way you suggest, and we trust more will yet be done; but space is limited, and there is no lack of text-books, Burbidge's among the rest.

CATALOGUES RECEIVED.

John Peed & Sons, Roupell Park Nurseries, near Tulse Hill Station, S.W. General Catalogue.
Biddles & Co., Loughborough—Seeds, Bulbs, &c.
Sutton & Sons, Reading—"Farmer's Year Book and Grazier's Manual."
Jas. Veitch & Sons, Chelsea, London, S.W.—Agricultural Seeds.
Morley & Co., Exotic Nurseries, Preston, Lancashire—Tuberous Begonias, &c.
John Forbes, Hawick, N.B.—Florists' Flowers, &c.
R. and J. Farquhar & Co., 19, South Market Street, Boston, Mass., U.S.A.—Seeds, &c.
Webb & Sons, Wordsley, Stourbridge—Farm Seeds.
Messenger & Co., Loughborough—Horticultural Buildings, &c., Illustrated.
Wm. Kerr, Dargavel, Dumfries, N.B.—Potatos.
G. Boyes & Co., Aylestone Park Nurseries, Leicester—Pelargoniums, &c.
Joseph Breck & Sons, 51, 52, and 53, North Market Street, Boston, U.S.A.—Gardeners' Guide and Annual Catalogue.
F. and A. Dickson & Sons, 106, Eastgate Street, Chester—Farm Seeds.
J. C. Vaughan, 42, La Salle Street, Chicago, U.S.A.—Flower and Vegetable Seeds.
Edward Gillett, Southwick, Mass., U.S.A.—North American Wild Flowers.
W. Atlee Burpee & Co. (of Philadelphia), 133, Cannon Street, London, E.C.—American Seeds and "Farm Annual."
Thos. Kennedy & Co., 108, High Street, Dumfries, N.B.—Farm Seeds, &c.
Wm. Cutler, 42, 43, 44, 60 and 61, Covered Market, Leeds—Vegetable and Flower Seeds.
Hogg & Wood, Coldstream-on-Tweed—Agricultural Seeds, and Lawes' Chemical Manures.
Toogood & Finlayson, Southampton—Farm Seeds.
Dickson & Robinson, 12, Old Millgate, Manchester—Farm Seeds.

Communications Received.—F. W. B.—H. Correvon.—W. Engelman, Leipzig.—W. J. P. (with many thanks).—W. T. T. D.—W. S., Edinburgh.—F. R. B.—R. A., Natal.—G. B. W.—Jacob Wrench & Sons.—H. J. Veitch.—J. R. J.—C. W. D.—G. Jackman.—F. M.—D. M. (with many thanks).—F. W. B.—T. A.—H. G. S.—A. D.—Frank Miles.—K. L. D.—A. P.—J. W.—Comte de Kerchove.—B. & A.—E. A. P.—Dr. Bonavia.—R. I. L.—R. L. P.—G., H. & R.—A. M. C. Jongkindt Ceninck (photograph received, with thanks, but found unsuited to our pages).—W. S. (too late).—A. K.—Visitor.—J. B.—G. N.—W. N. (not good enough).—R. A. R.—J. R. J.—D. T. F.—F. T.—J. W.—W. Tuck, Grahamstown (many thanks.)—H. Broomfield.

MARKETS.

COVENT GARDEN, March 3.

[The subjoined reports are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list weekly, and are responsible for the quotations. It must be remembered that these quotations are averages for the week preceding the date of our report. The prices fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the prices at any particular date, still less can they be taken as guides to the price in the coming week. Ed.]

Now Lent has set in business is very dull, and prices, except with choice Grapes, are lower all round. A few good Strawberries to hand, meeting with little request. *James Webber, Wholesale Apple Market.*

Plants in Pots.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz.	6 0–18 0	Ferns, in variety, per dozen	4 0–18 0
Arum Lilies, dozen	18 0–24 0	Foliage plants, various, each	2 0–10 0
Azaleas, per dozen	24 0–42 0	Genistas, per doz.	10 0–12 0
Cinerarias, per doz.	9 0–12 0	Hyacinths, 12 pots	6 0– 9 0
Cyclamens, dozen	12 0–24 0	Lily-of-Val., 12 pots	12 0–24 0
Cyperus, per dozen	4 0–12 0	Marguerite Daisy, per dozen	6 0–12 0
Daffodils, 12 pots	9 0–10 0	Myrtles, per dozen	6 0–12 0
Dracæna terminalis, per dozen	30 0–60 0	Palms, in var., each	2 6–21 0
— viridis, per doz.	12 0–24 0	Pelargoniums, scarlet, per doz.	6 0– 9 0
Epiphyllum, dozen	18 0–30 0	Primula sinensis, per dozen	4 0– 6 0
Erica hyemalis, per dozen	12 0–24 0	Solanums, per dozen	9 0–12 0
— various, dozen	9 0–24 0	Spiræa, per dozen	12 0–24 0
Euonymus, in var., per dozen	6 0–18 0	Tulips, 12 pots	6 0– 8 0
Evergreens, in var., per dozen	6 0–24 0		
Ficus elastica, each	1 6– 7 0		

Cut Flowers.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Arum Lilies, 12 blms.	3 0– 5 0	Mignonette, 12 bun.	3 0– 6 0
Azaleas, 12 sprays	0 6– 1 0	Pelargoniums, scarlet, 12 sprays	0 9– 1 0
Bouvardias, per bun.	0 6– 1 0	Primulas, single, 12 bunches	4 0– 6 0
Camellias, 12 blooms	2 0– 4 0	— double, 12 sprays	1 0– 1 6
Carnations, 12 blms.	1 0– 3 0	Roses, Tea, per doz.	2 0– 4 0
Cyclamen, 12 blooms	0 4– 0 9	— coloured, dozen.	3 0– 6 0
Daffodils, 12 blooms	0 6– 1 6	— red, French, doz.	1 6– 2 0
Eucharis, per dozen	3 0– 6 0	— Saffrano, Fr. doz.	1 0– 1 6
Gardenias. 12 blooms	12 0–30 0	Tropæolums, 12 bun.	1 0– 2 0
Hellebores, or Christmas Roses, 12 bls.	0 4– 1 0	Tuberoses, 12 blms.	2 6– 4 0
Heliotropes, 12 spr.	0 6– 1 0	Violets, 12 bunches	1 6– 2 0
Jasmine, white, bun.	0 6– 0 9	— Parme, French, per bunch	3 0– 4 6
Lilies of the Valley, 12 sprays	0 9– 1 6	— Czar, Fr., bunch	1 6– 2 0
Marguerites, per 12 bunches	3 0– 6 0		

Fruit.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Apple, ½-sieve	1 6– 5 0	Lemons, per case	12 0–21 0
— Nova Scotia, brl.	8 0–12 0	Pears, per dozen	2 0– 4 0
Grapes, per lb.	2 0– 6 0	Pine-apples, Eng., lb.	1 0– 1 6
Kent Cobs, 100 lb.	65 0 70 0	— St. Michael. each	1 6– 6 0

Vegetables—Average Retail Prices.

	s. d. s. d.		s. d. s. d.
Artichokes, per doz.	6 0– ...	Mushrooms, punnet	1 6– 2 6
Asparagus, French, per bundle	18 0– ...	Mustard and Cress, punnet	0 4– ...
— English, per 100	12 0– ...	Onions, per bushel	4 0– ...
Beans, Kidney, lb.	4 0– ...	Parsley, dozen bunch	8 0– ...
Beet, red, per dozen	1 0– 2 0	Peas, per quart	6 0– ...
Brussels Sprouts, lb.	0 4– ...	Potatos, per cwt.	4 0– 5 0
Carrots, per bunch	0 6– ...	,, kidney, per cwt.	4 0– 5 0
Cauliflowers, per doz.	3 0– ...	Rhubarb, per bundle	0 6– ...
Celery, per bundle	1 6– 2 0	Seakale, per punnet	2 6– ...
Cucumbers, each	1 0– 2 0	Shallots, per lb.	0 3– ...
Endive, per dozen	1 0– 2 0	Spinach, per bushel	5 0– ...
Green Mint, bunch	1 0– ...	Sprue, bundle	1 0– ...
Herbs, per bunch	0 4– ...	Tomatos, per lb.	2 6– ...
Leeks, per bunch	0 3– ...	Turnips, bunch	0 4– ...
Lettuce, per dozen	1 0– 1 6		

Potatos.—Markets very heavy, at the following prices:—Regents, 80s. to 100s.; Magnums, 70s. to 110s. per ton.

SEEDS.

London: *March* 6.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., report that the recent favourable weather has caused an increasingly active demand for farm seeds. Stocks of all kinds are in consequence diminishing. The remarkably low prices current on Mark Lane are proving, in these times of agricultural depression, very acceptable to consumers. There is no change this week in either red Clover, Alsike, or Trefoil. White Clover seed tends upwards. For spring Tares there is a better sale on former terms. Bird seeds are neglected. Blue Peas continue exceedingly cheap.

CORN.

Averages.—The following is an official statement showing the average price of British corn, imperial measure, as received from the inspectors and officers of Excise, in the week ended February 26, 1887:—Wheat, 32*s.* 7*d.*; Barley, 25*s.*; Oats, 16*s.* 11*d.* For the corresponding week in 1886:—Wheat, 29*s.* 3*d.*; Barley, 28*s.* 3*d.*; Oats, 19*s.* 2*d.*

FRUIT AND VEGETABLES.

Columbia (East London): *March* 2.—Shorter supplies of vegetables met better demand, and prices higher. Quotations:—Apples 13*s.* to 19*s.* per barrel; Savoys, 1*s.* 6*d.* to 4*s.* per tally; Brussels Sprouts, 1*s.* 6*d.* to 2*s.* 6*d.* per sieve; Curly Kale, 1*s.* 6*d.* to 2*s.* per sieve; Turnip-tops, 2*s.* to 2*s.* 6*d.* do.; Sprouting Broccoli, 2*s.* to 2*s.* 6*d.* do.; Beetroots, 4*d.* to 6*d.* per dozen; bunch Greens, 2*s.* to 3*s.* 6*d.* do.; bunch Turnips, 1*s.* 6*d.* to 2*s.* do.; bunch Carrots, 1*s.* 6*d.* to 2*s.* 6*d.* do.; Celery, 9*d.* to 1*s.* 3*d.* per bundle of 12 sticks; Onions (English), 5*s.* to 5*s.* 6*d.* per cwt.; foreign do., 3*s.* 6*d.* to 4*s.* 3*d.* per bag; Carrots, 13*s.* to 22*s.* per ton; Mangels, 11*s.* to 13*s.* per ton.

Stratford: *March* 2.—The market has been well supplied, and a fair trade was done at the undermentioned quotations:—Savoys, 3*s.* to 5*s.* per tally; Turnips, 2*s.* to 2*s.* 6*d.* per dozen bunches; ditto, 28*s.* to 30*s.* per ton; Carrots, household, 23*s.* to 30*s.* do.; ditto, cattle feeding, 16*s.* to 23*s.* do.; Parsnips, 6*d.* to 9*d.* per score; Mangels, 10*s.* to 17*s.* per ton; Swedes, 19*s.* to 22*s.* do.; Onions, English, 105*s.* to 115*s.* per ton; ditto, Dutch, 3*s.* to 4*s.* 6*d.* per bag; Watercress, 6*d.* per dozen; Celery, 6*d.* to 8*d.* per roll.

POTATOS.

Borough and Spitalfields: *March* 1.—The trade was without material alteration, the best samples rather tending to harden in value. Quotations:—Regents, 70*s.* to 110*s.*; Magnum Bonums, 55*s.* to 90*s.*; and Champions, 50*s.* to 80*s.* per ton.

Columbia (East London): *March* 2.—Quotations:—York and Lincoln Magnums, 55*s.* to 80*s.*; do. Regents, 60*s.* to 80*s.*; do. Champions, 50*s.* to 70*s.*; Essex Regents, 55*s.* to 90*s.*; do. Magnums, 55*s.* to 80*s.*; do. Champions, 55*s.* to 70*s.*; Cambridgeshire Regents, 55*s.* to 75*s.*; do. Magnums, 60*s.* to 80*s.*; do. Champions, 55*s.* to 65*s.* 6*d.*; Scotch Regents, 60*s.* to 85*s.*; do. Magnums, 65*s.* to 100*s.*; do. Champions, 55*s.* to 70*s.* per ton.

Stratford: *March* 2.—Quotations:—Scotch Magnums, 70*s.* to 80*s.*; best Magnums, 65*s.* to 70*s.*; Fenland, 55*s.* to 60*s.*; Champions, 60*s.* to 70*s.* per ton.

DURING 1886

I WAS AWARDED

35 FIRST-CLASS CERTIFICATES

for New and Specially Meritorious Plants;

SIXTEEN MEDALS,

IN ADDITION TO

NUMEROUS PRIZES;

AND WAS PRESENTED WITH A

COMMEMORATIVE DIPLOMA

BY THE EXECUTIVE COUNCIL OF THE

COLONIAL AND INDIAN EXHIBITION,

for a Continuous Display of Hardy Cut Flowers during the time of the Exhibition, lasting from May until October, commencing with enormous groups of Showy Flowering Bulbs, consisting of an endless variety of **Narcissus**, also **Anemones, Hyacinths, Tulips**, and many other Spring-flowering Bulbs; succeeded at a later period with perhaps the finest display of **Pæonies** ever seen at an Exhibition, the **Tree Varieties** being specially admired. These were succeeded by **Double and Single Pyrethrums, Pinks, Show, Self,** and **Yellow Ground Carnations** and **Picotees**, and **Hardy Perennials** in great variety; also **Lilies**—my exhibit of these lasting for some time, and including the leading species and varieties in cultivation. The Exhibition was closed with extensive displays of **Dahlias**, including both **Shows, Fancies, Pompons, Singles,** and **Cactus** or **Decorative Dahlias**, including many new varieties, which will be offered in my next Catalogue of Dahlias.

The following CATALOGUES are now being issued, and may be had gratuitously and Post-free on application:—

No. 90, HARDY PERENNIALS ILLUSTRATED, credited with being one of the most useful catalogues published, and includes a complete selection of Hardy Perennials, everything being fully described and many illustrated. The catalogue contains over 150 engravings of Perennials, selections of Iris—this highly ornamental family are cultivated extensively at Tottenham; Hardy Terrestrial Orchids—under which heading are included all the Hardy Orchids which can be counted as showy; Hardy Aquatic and Bog Plants, Ornamental Grasses and Bamboos, Cannas, Lilies, and other Bulbs in pots, Hardy Cyclamens, Begonias, &c,

No. 91, HARDY FLORISTS' FLOWERS, contains Show and Border Carnations and Picotees, also Yellow Grounds, Trees, Selfs, and Clove varieties, going to constitute one of the finest collections of Carnations in the world; Delphiniums, a splendid collection, to which many varieties have recently been added; Dianthus or Mule Pinks, Hollyhocks, Lobelias, Show and Fancy Pansies, Bedding Pansies and Violas, Pentstemons—a first-class collection of these; Potentillas, Double and Single Pyrethrums, Sweet Violets—these are grown in large quantities; Early and Late Phloxes, &c.

CHRYSANTHEMUMS: a carefully revised edition of this catalogue, which included every Chrysanthemum worth growing, and a number of new ones. It extends to twenty pages, divided between the following sections:—Early or Summer-flowering, Reflexed, Incurved, Japanese, Anemone-flowered, Pompons, and Singles. This catalogue is embellished with a "litho" of the new yellow late Japanese Chrysanthemum; this variety is the best late yellow variety in cultivation for cutting.

TREE and HERBACEOUS PÆONIES. A separate catalogue of these is now published, my collection of which may fairly claim to be a most complete one. I have a fine collection of Tree varieties—about forty sorts, certainly the best varieties grown. The plants are all good stuff, established in pots. Herbaceous varieties, both Double and Single, are grown extensively by me; all the varieties are fully described in this catalogue.

HARDY CLIMBERS, ORNAMENTAL SHRUBS, NEW FRUITS, ROSES, &c. Amongst Climbers are included Clematis, Jasmines, Ampelopsis, Wistarias, splendid specimen Magnolias, Passifloras, &c. The Fruit portion consists of Blackberries and other modern fruits.

THOMAS S. WARE,

HALE FARM NURSERIES,

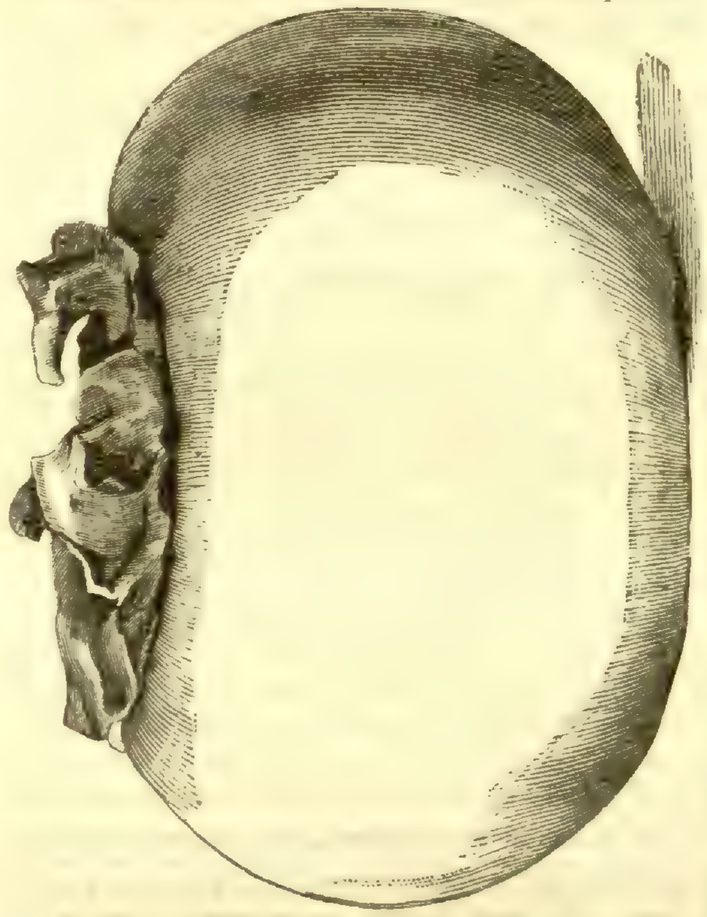
TOTTENHAM, LONDON.

VERTEGANS'

NOVEL, RARE, and DELICIOUS

HARDY FRUITS.

3 or more at rate per dozen, 25 or more at rate per 100.



Fruit of Diospyros Kaki. Grown at Heatherbank, Weybridge (natural size).

"THE DIVINE PEAR" (Diospryos Kaki). Said to be the "Forbidden Fruit" of the Ancients, and so delicious as to cause oblivion (*vide* Paxton).—I have been fortunate in securing a limited number of good plants, of this rare and desirable fruit. The eminent horticultural authority, Rev. Hy. Ellacombe, writes me, from Bristol, in a letter dated Feb. 7, 1887:—"It is perfectly hardy, and has fruited freely here for the last two or three years."

In an interesting article in *Garden* (Feb. 28, 1885, p. 169), the writer thus comments:—"The colour and flesh is similar to that of an Apricot, but more juicy, and of pleasanter flavour. Indeed, the fruit, when fully ripe, is quite delicious, and it is a wonder that it is not more grown as a dessert fruit for October; a season when such fruits are so limited in variety . . . The fruit is very handsome, and an ornament to the dinner table."

Price 3*s.* 6*d.* and 4*s.* 6*d.* each; 32*s.* 6*d.* and 42*s.* 6*d.* per dozen.

THE SIBERIAN APRICOT.—A splendid perfectly hardy variety, specially adapted for outdoor cultivation; fruit charming golden-yellow; flavour delicious, and very prolific. Maidens, 4*s.* 6*d.* each, 50*s.* per dozen.

THE ONLY RELIABLE BLACKBERRY for this Climate, "BEST OF ALL."—Many who have planted "Wilson Junior," "Kittatiny," and other varieties—only to see them die—can well understand what a treasure we have now in this superior variety. Equal to any in size, and bearing as freely, it eclipses them in two great features that must ere long put its contemporaries in the shade, viz., it "carries" when gathered much better than any other variety; and reliability can be placed upon the canes planted surviving and starting vigorously, as the following letter will show:—

"Stirling, N.B., Feb. 19, 1887.—The Blackberries (Best of All) Miss Whitelaw got from Mr. Vertegans in the autumn seem to have stood the winter well, and begin to show bud."

Strong plants, 9*d.* each, 7*s.* per dozen, 57*s.* 6*d.* per 100.

BLACKBERRY "CRYSTAL."—A white fruited and desirable variety. Strong plants, 1*s.* each, 10*s.* 6*d.* per dozen, 70*s.* per 100.

GOLDEN-FRUITED BLACKBERRY.—A Novelty of charming Golden-Yellow Colour. Stock limited. 1*s.* 6*d.* each, 15*s.* per dozen.

BLACKBERRY-RASPBERRY HYBRID "ORANGE GEM."—A chance seedling, evidently a cross between a Raspberry and a Blackberry; ordinary size; yellowish-orange colour; peculiar yet pleasing flavour. 1*s.* 3*d.* each, 10*s.* 6*d.* per dozen, 75*s.* per 100.

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APPLE "RED BIETIGHEIMER."—A rare and valuable variety; indeed, it is one of the handsomest, largest, and best Apples in commerce; a regular and heavy early autumn bearer. Maidens, 3*s.* 6*d.* and 5*s.* 6*d.* each, 36*s.* and 57*s.* 6*d.* per dozen.

JAPAN CHESTNUT.—Quite distinct from our European varieties, and a great improvement on them, being of superior flavour and sweetness, and larger. Trees come into bearing two years from graft. Price, 3*s.* 6*d.* each, 32*s.* per doz.

N.B.—One strong plant each of the above superb collection of rare and delicious fruits carriage paid to any railway station in the United Kingdom on receipt of cheque or P.O.O. for £1.

For other Rare and Delicious Fruits *vide* Illustrated CATALOGUE, gratis and post-free.

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Established 20 Years.

THIS OLD-ESTABLISHED MANURE is acknowledged by the leading practical Gardeners in the United Kingdom and the Colonies to exceed all others in general fertilising properties and staying powers. It promotes a rapid, healthy, and robust growth to plants generally. *For Vines* it cannot be too highly recommended, and this fact is fully sustained from the result obtained by its use in the hands of some of the most successful Grape growers. It is a clean and dry Powder, with very little smell, which renders it particularly adaptable for ladies interested in plant culture.

The highly fertilising properties of this Manure render its money value in comparison with other manures at least double; and users will find that very small quantities will produce favourable results.

Sold in new and enlarged Tins, 1/-, 2/6, 5/6, 10/6, and 21/- each; and in Kegs at reduced prices—28 lb., 12/6; 56 lb., 23/-; 112 lb., 42/- each.

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Every grain fertilizes because the Guano is perfectly pure. It is a most economical Manure, 4 to 5 cwt. per acre being ample for any crop.

Write for Pamphlet, Testimonials and Instructions.

FISH-POTASH

Dr. Voelcker's analysis guaranteed. FISH-POTASH contains Ammonia, Phosphates and Potash in large proportions, which are the principal elements of fertilization.

Average cost, applied to the soil, 35s. to 48s. per acre.

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ENGLISH ROLL TOBACCO PAPER,

Cloth and Fumigating Mixture,

Is celebrated throughout the United Kingdom, and acknowledged to be best, safest, and strongest it is possible to obtain, and contains the pure essence of Tobacco only. 6 lb., 4*s.* 6*d.*; 14 lb., 10*s.*; 30 lb., 20*s.*; the above is carriage paid to London or any railway station in Kent. Parcels sent by Post, paid:—2 lb., 22 stamps; 3 lb., 2*s.* 6*d.*; 7 lb., 5*s.* 6*d.*; 11 lb. 8*s.* 6*d.* Safe delivery is guaranteed on all parcels. Imported Tobacco Paper, &c., at lower rates. Our Tobacco Paper, Cloth, and Fumigating Mixture still stand the best extant. Used in Royal Nurseries, the gardens of the Nobility, by leading men of the Profession, &c. TRADE INQUIRIES SOLICITED.

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The Best Garden Manure.

In Tins, 2 lb., **1s.** *Larger quantities are charged less,*

MILLER & JOHNSON, 30, Mark Lane, E.C.

Ground BONES, FISH GUANO, POTASH, CRUSHED HOOFS and HORNS, and all other MANURES, at lowest prices.

EPPS'S SELECTED PEAT,

For CHOICE PLANTS, FERNS, HEATHS, &c.; also for RHODODENDRONS.

Specially Selected do. for Orchids.

LOAM, SAND, LEAF-MOULD, SPHAGNUM, COCOA-NUT FIBRE, CHARCOAL, &c., &c.; also all kinds of NURSERY STOCK. Prices on application to

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To Market Gardeners, &c.

To Grow fine Vegetables and Flowers, Gardeners should use

SULPHATE OF AMMONIA.

One trial will prove the great value of this Manure, and ensure its constant use hereafter. It can be applied either separately or mixed with ordinary stable or farmyard manure. Rose Trees and Garden Plants are much benefited by being watered with a weak solution once or twice a week. Instructions on application, post free. Price free on rail at Sheffield, 12*s.* 6*d.* per cwt., or 7*s.* per 56 lb. P. O. Orders payable to The MANAGER, Sheffield Gas Company, Sheffield.

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Especially adapted for cultivation of

FLOWERS, FRUITS, AND VEGETABLES.

Is not a Chemical production, but a purely natural Guano.

Useful everywhere alike, in Flower Garden, Conservatory and Greenhouse.

Packets, 1 lb., 6*d.*; 2 lb., 1*s.*; *postage extra.* Bags, 7 lb., 2*s.* 6*d.*; 14 lb., 4*s.* 6*d.*; 28 lb., 7*s.* 6*d.*; 56 lb., 12*s.* 6*d.*; 112 lb., 20*s.*, *carriage paid. Of the principal Nurserymen, Seedsmen, Florists and Chemists, or direct from*

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A dry powder, carefully manufactured by Mechi's process,

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The very best Manure for Roots, Grass, Potatos, Wheat, Barley, Oats, Turnips, Mangels, Fruit, Vegetables, Hops, &c.

DESTROYS WIREWORMS, SLUGS, INSECTS, and GRUBS.

35s. per Ton loose; 40s. per Ton in bags; 4s. per Cwt. in bag.

Delivered Free on Rail or Boat.

Extract from the London DAILY CHRONICLE, *Jan.* 6, 1887.

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Our special Grass, Potato, Fruit, and Plant MANURES; PEATS, SOILS, &c., are offered in bulk at rates to suit all requirements.

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NATIVE GUANO.—Price £3 10*s.* per ton in bags; lots under 10 cwt., 4*s.* per cwt. Sample bag (1 cwt.) sent, carriage paid, to any station in England on receipt of P.O. for 5*s.*

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PEAT and SAND.—Light Brown PEAT for Nursery and Greenhouse Work, in four-ton trucks of 10 yards each, at 10*s.* per yard. In bags at 2*s.* 6*d.* per bag. Rhododendron and American Plant Beds, at 15*s.* per ton. Orchid Peat, 5*s.* per bag. Fresh SPHAGNUM, 7*s.* 6*d.* per bag. SILVER SAND, coarse or fine, 13*s.* per ton.

WALKER AND CO., Farnboro' Station, Hants.

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TWO PRIZE MEDALS.

Quality, THE BEST in the Market. (All sacks included.)

PEAT, best brown fibrous ...	5*s.* per sack;	5 sacks for 22*s.* 6*d.*
PEAT, best black fibrous ...	4*s.* 6*d.* ,,	5 sacks for 20*s.*
PEAT, extra selected Orchid	5*s.* 6*d.* ,,	5 sacks for 25*s.*
LOAM, best yellow fibrous ...	1*s.* per bush., 3*s.* per sack. (sacks included).	
PREPARED COMPOST, best		
LEAF MOULD, best only		
PEAT MOULD, ,,		
SILVER SAND, coarse, 1*s.* 6*d.* per bush., 14*s.* half ton, 24*s.* ton.		
RAFFIA FIBRE, best only	1*s.* per lb.	
TOBACCO CLOTH, finest imported ...	8*d.* lb., 28 lb. 18*s.*	
TOBACCO PAPER ,, (Spécialité)	8*d.* lb., 28 lb. 18*s.*	
MUSHROOM SPAWN, finest Milltrack ...	5*s.* per bushel.	

	Tins.	In bags. 7lb.	14lb.	28lb.	56lb.	1 cwt.
CHUBB'S "PERFECT" FERTILISER, the Best Food for all kinds of Plants, Flowers, Fruits, Vegetables, &c. ...	1/6	3/-	5/-	8/-	14/-	22/-
CRUSHED BONES, best quality		1/2	2/-	3/6	6/-	12/-
VIRGIN CORK, best quality only		—	3/-	5/6	10/6	17/-

HORTICULTURAL CHARCOAL, ditto, 2*s.* 6*d.* per bushel.

COCOA-NUT FIBRE REFUSE (by Chubb's special process), sacks, 1*s.* each; 10 sacks, 9*s.*; 15 sacks, 13*s.*; 20 sacks, 17*s.*; 30 sacks, 25*s.*; 40 sacks, 30*s.* Truck-load, loose, free on rail, 25*s.* Limited quantities of G., special quality, granulated, in sacks only, 2*s.* each. Terms, strictly Cash with order.

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WEST FERRY ROAD, MILWALL, LONDON, E.

PEAT—PEAT—PEAT.

GATERELL & SON, RINGWOOD, HANTS,

Are now prepared to receive Orders for the above.

GOOD SOUND PEAT, very fibrous, for Orchids, in sacks only; do., for Stove, Greenhouse, Hardwooded Plants, and Rhododendrons, in any quantity.

GOOD YELLOW FIBROUS LOAM, Coarse and Fine SILVER SAND, SPHAGNUM, &c.

Special low terms to the Trade. Price List on application.

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COCOA-NUT FIBRE REFUSE.

4*d.* per bushel; 100 for 25*s.*; truck (loose, about 2 tons), 40*s.*; 4-bushel bags, 4*d.* each.

LIGHT BROWN FIBROUS PEAT, 5*s.* 6*d.* per sack; 5 sacks, 25*s.*: sacks, 4*d.* each.

BLACK FIBROUS PEAT, 5*s.* per sack, 5 sacks, 22*s.*; sacks, 4*d.* each.

COARSE SILVER SAND, 1*s.* 9*d.* per bushel; 15*s.* per half ton; 26*s.* per ton, in 2-bushel bags, 4*d.* each.

YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1*s.* per bushel

SPHAGNUM MOSS, 8*s.* 6*d.* per sack.

MANURES, GARDEN STICKS, VIRGIN CORK, TOBACCO CLOTH, RUSSIA MATS, &c. Write for Price LIST.—**H. G. SMYTH,** F.R.H.S., 21, Goldsmith's Street, Drury Lane (lately called 17A, Coal Yard), W.C.

Orchid Peat—a Specialty!

W. WOOD AND SON are now cutting from THE NEW ESTATE (the only estate celebrated for its special quality of ORCHID PEAT).

Send for Sample. Special Quotations.

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To Gardeners.

PROCTOR AND RYLAND'S well-known

Special Garden Manures.

Pure Ground Bone for Vines, Potting, &c.

10*s.* per bag of 1 cwt. on receipt of Postal Order.

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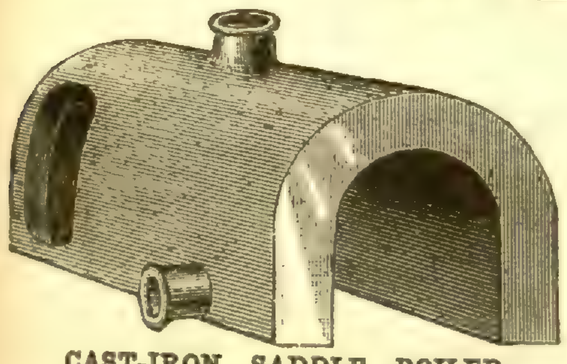

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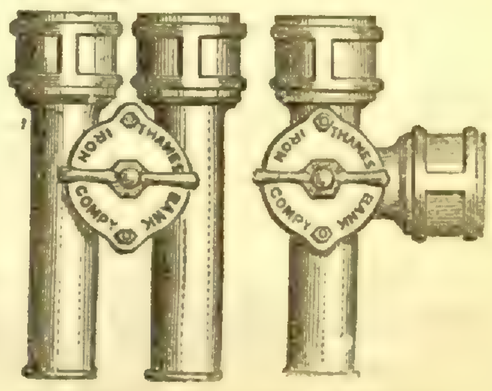

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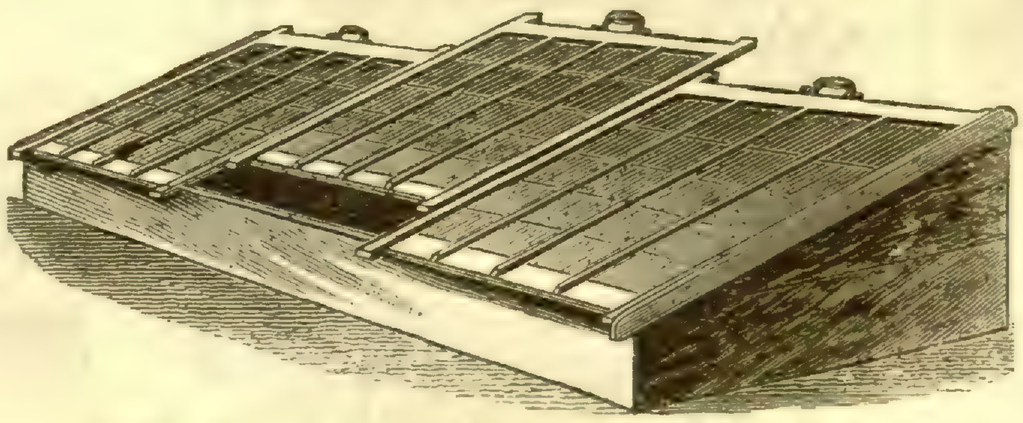

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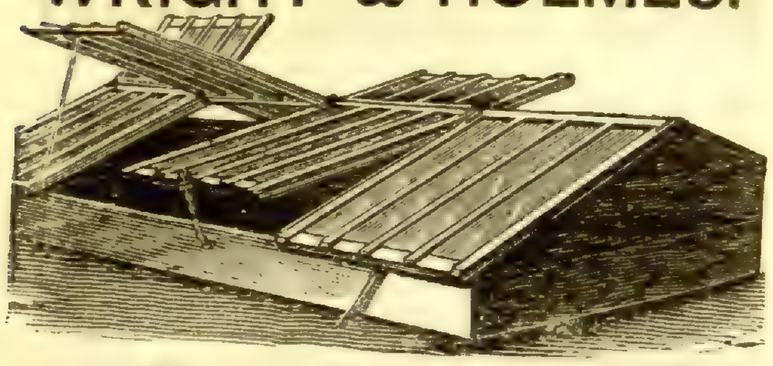

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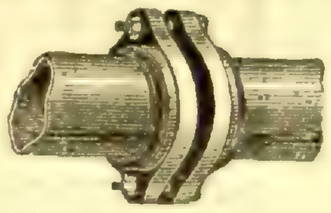

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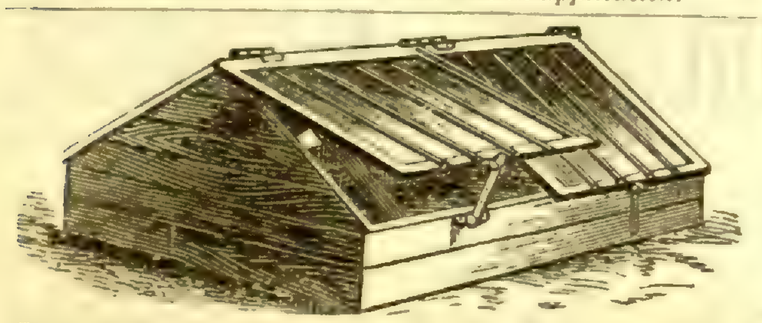

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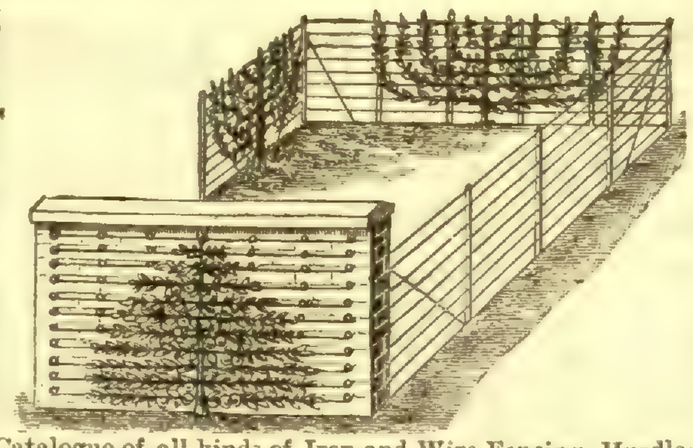

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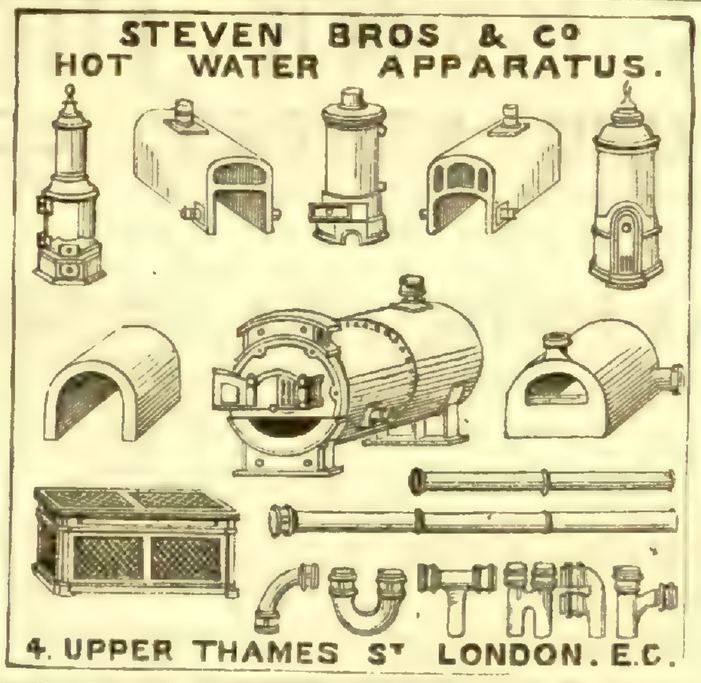

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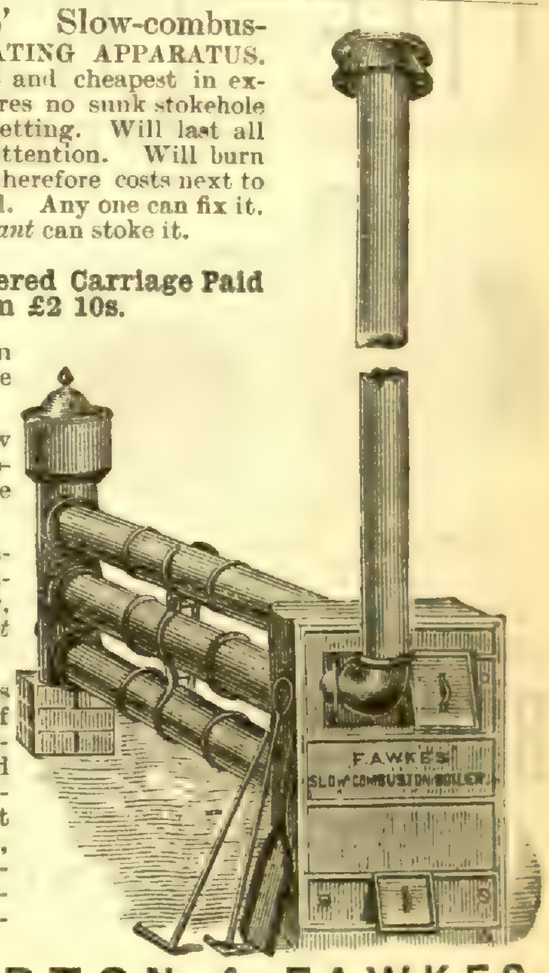

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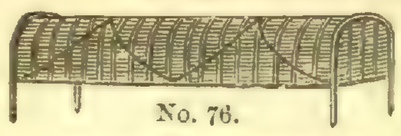

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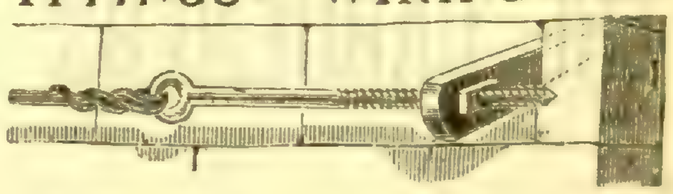

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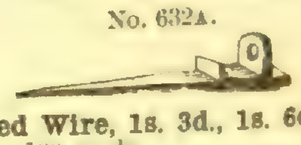

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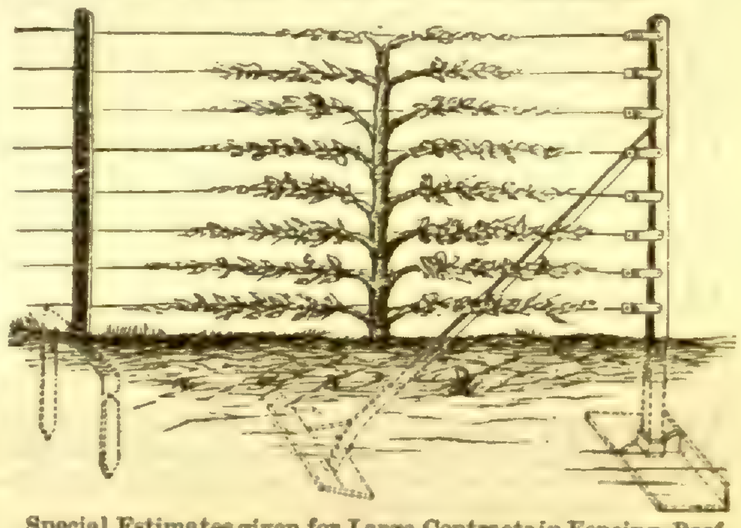

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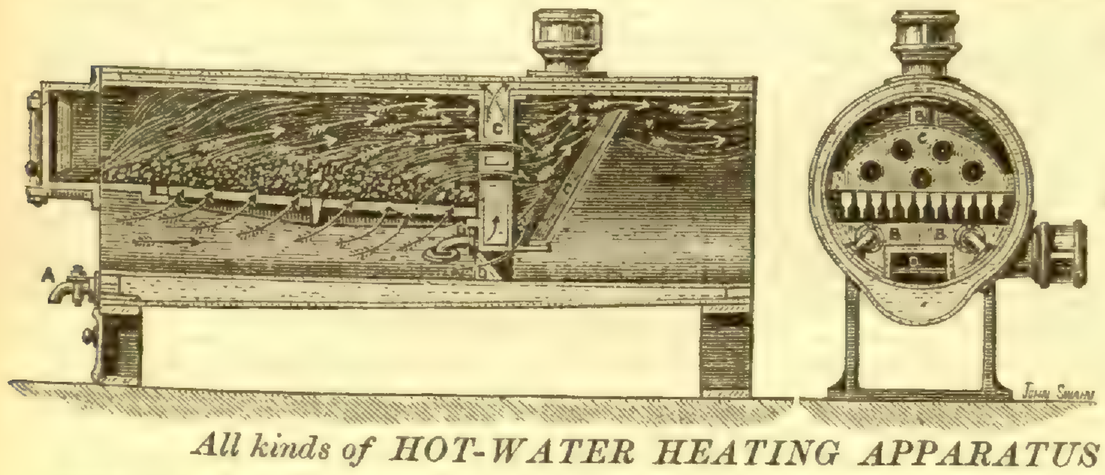

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JOURNEYMAN, in the Houses.—Five years' experience; excellent character from last and previous places.—G. ROUSE, Upton Road, Slough, Bucks.

JOURNEYMAN, in the Houses.—Age 23; acquainted with Orchids, &c. Good references.—E. BYE, Blackwater, Farnborough, Hants.

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JOURNEYMAN, in the Houses, under a Foreman.—Age 20; seven years' experience. Good character, Bothy preferred.—J. B. F., Rydon-on-Dunsmore, Coventry, Warwickshire.

JOURNEYMAN, in the Houses, in a good establishment.—Age 24; eight years' experience in good establishments. Bothy preferred.—T. SHELBOURN, Belton, Grantham.

JOURNEYMAN.—Age 22; strong, active. Five years' practice in good Gardens, and five years' good character. Three years' excellent character from last place.—E. MILLS, Watergate Gardens, Emsworth, Hants.

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JOURNEYMAN; age 20.—Geo. Vicker, The Gardens, Branston Hall, Lincoln, wishes to recommend George Rowland, as Journeyman Gardener; at liberty end of this week. Six years' experience in three gardens. He is sober and industrious.—Address as above.

JOURNEYMAN, in the Houses; age 22.—Mr. Ward, Gardener to the Right Hon. Lord Windsor, Hewell, Bromsgrove, can thoroughly recommend Frank Garrett as above, who has been with him two years. Eight years' experience.

JOURNEYMAN, in the Houses; age 21.—G. Lucas, Head Gardener to C. Liddell, Esq., Peasmarsh Place, Sussex, would be pleased to recommend James Pane, who has been with him three years, to any Gardener requiring a thorough energetic, hard-working, and trustworthy young man.—Address as above.

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JOURNEYMAN, or Second; age 23.—F. Coulling, Head Gardener, Monk's Manor, Lincoln, can with confidence recommend F. Blackith, having been three and a half years with him, during which time he has given entire satisfaction. Six years' experience.—F. BLACKITH, 5, Sussex Terrace, South Park, Lincoln.

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SITUATION WANTED, Glass or otherwise.—Bothy preferred. Age 28; six and a half years' character.—J. G., 136, Felix Road, Castle Hill, Ealing, W.

TO NURSERYMEN.—A youth (age 19) requires a situation in a Nursery. Has had three years as Under Propagator, outdoors.—PITTS, 6, Joy Terrace, Baddow Road, Chelmsford.

TO NURSERYMEN.—A situation in Market Nursery wanted; two years in a London firm. Age 21. Good references.—F. C., 2, Ashbourne Terrace, Gladstone Road, Wimbledon.

TO NOBLEMEN and GENTLEMEN.—Situation wanted by strong respectable youth (age 17), in Nobleman's or Gentleman's Garden; slight experience.—GEORGE WILLIAM AUSTIN, Barleythorpe, Oakham, Rutland.

WANTED, to place a YOUTH in a good Garden establishment. Has had no practical experience. Age 17. Wages no object.—J. C., Jos. Rylance, Hooton, near Chester.

TO FLORISTS and SEEDSMEN.—Required to place a Youth (age 16) with a Florist and Seedsman, where he would Learn the Business. Indoor preferred; small Premium.—M. P., 22, Adelaide Road, N.W.

GARDEN LABOURER, in a good establishment.—Age 24; strong and willing.—Apply, with particulars, to W., 18, White Cross Street, Monmouth.

MANAGER, or TRAVELLER.—Advertiser seeks engagement as above either in Nursery or Seed Department. Twenty years' experience with well known firms.—X. Y. Z., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

SHOPMAN.—Fourteen years' experience in the Wholesale and Retail Trade. First-class references.—A. S., 673A, Old Kent Road, London.

Seed Trade.

SHOPMAN—also used to Plant and Flower Trade.—Age 27; good Penman and Accountant. Good references.—W. HARRIS, Hammerwood, East Grinstead, Sussex.

Seed Trade.

SHOPMAN (Assistant).—Age 21; four years' experience. Nursery kept preferred.—142, Summer Lane, Birmingham.

SHOP ASSISTANT.—Six years' experience in Shop and other Nursery Work.—A. BEALE, Paul & Sons, "Old" Nurseries, Cheshunt.

TO FLORISTS.—Required, by Gardener's daughter (age 20), a situation in Florist's. Good knowledge of Flowers. Highly recommended.—M., 53, Chippenham Road, Harrow Road, W.

HOLLOWAY'S PILLS.—The Right Road to Happiness, Health, and Strength.—In selecting the most appropriate medicine for any particular ailment, there may be some difficulty unless one can be found at once to purify, regulate and strengthen. Holloway's Pills possess and exert these properties in an extraordinary degree. They purify the blood, regulate the liver, and strengthen the nervous system—thus they enable the stomach to digest any ordinary food, increase the secretory powers of the liver, cleanse the blood, expel all morbid matters, and throw into the circulation the purest elements for sustaining and repairing the frame, and, above all, they impart tone to the controlling nervous system, the due action of which regulates and modifies circulation and respiration.

Send for an ILLUSTRATED PRICE LIST of

JOHN BLAKE'S

PATENT SELF-ACTING HYDRAULIC RAMS,

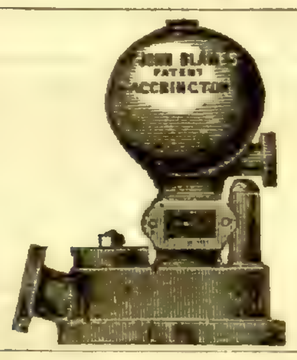
For Raising Water for the Supply of Towns, Villages, Irrigation, Railway Stations, Mansions, Fountains, Farms, &c.

No Cost for Motive Power, which is obtained from a Stream of Water passing through the Ram.

NO OILING OR PACKING REQUIRED.

MADE IN SIZES TO RAISE FROM **300** TO **500,000** GALLONS PER DAY. WILL FORCE TO A HEIGHT OF **1500 Feet.**
SPECIAL RAMS for HIGH FALLS, to send up One Third of the Water passing through them.

Fig. A.



This Ram raises a portion of the same water that works it.

PRICES OF RAMS OF FIGURE "**A**" MAKE, TO FORCE to MEDIUM HEIGHTS.

No. of the Size of the Ram.	Number of Gallons per Day of twenty-four Hours the Ram will raise where there is sufficient working Fall as compared to the Height the Water has to be forced.	Price.
2	300	£12
3	600	15
4	1,000	18
5	1,500	21
6	2,000	25
7	3,000	35
8	5,000	45
9	7,000	55
10	10,000	65
11	15,000	75
12	20,000	100
13	35,000	150
14	50,000	210
15	70,000	275
16	100,000	350

Estimates will be given on receipt of the following particulars:—

1st, the fall (in feet or inches) which can be obtained from the stream, spring, river, or other source of supply; 2d, the height and distance to which the water has to be forced; 3d, the approximate quantity falling per minute, and the number of gallons required to be raised in a day of twenty-four hours; and if a B ram is required, the depth and horizontal distance from the Ram to the clean water should also be stated. Gun-metal is liberally used in the construction of these rams, and the prices include gun-metal foot and stop delivery valve, &c. They are fitted up in a most substantial and workmanlike manner, the first cost being only a secondary consideration.

View of Ram Worked by Water from a Spring, and supplying the House and Garden on the Hill.

This Ram, whilst worked by a stream of impure water, will pump clean water from a well or spring.

Fig. B.

PRICES OF DOUBLE-ACTING RAMS OF FIGURE "**B**" MAKE, TO FORCE TO MEDIUM HEIGHTS.

No. of the size of the Ram.	Number of Gallons per day of twenty-four hours the Ram will raise where there is sufficient working fall as compared to the height the water has to be forced.	Price.
3	500	£40
4	1,000	50
5	2,000	60
6	4,000	90
7	7,000	120
8	10,000	150
9	15,000	180
10	20,000	200
11	30,000	280
12	50,000	400
13	70,000	550
14	100,000	700

EXTRACTS FROM TESTIMONIALS.

From THOMAS ROBERTS, Esq.,

Estate Surveyor to His Grace the Duke of Sutherland, K.G., Surveyor's Office, Trentham Hall, Staffordshire, April 13, 1886.

"Dear Sir,—I am pleased to say that the Hydraulic Ram you supplied and fixed at Titensor (the residence of the Marquess of Stafford, M.P.) does its work very satisfactorily, with a fall of 9 feet 6 inches, raising 9000 gallons daily to a height of 150 feet. The Duke of Sutherland, K.G., inspected the working of the Ram, and expressed his entire satisfaction with it.—I am yours faithfully,
"THOMAS ROBERTS."

From HENRY MORTON, Esq.,

Agent to the Most Honourable the Marquess of Ripon, K.G., Ripon, April 12, 1886.

"Dear Sir,—The Patent Ram, with 1½ mile of service pipe, a large galvanised tank, and other fittings, which you fixed for the Marquess of Ripon, for the conveyance of water from Hutton Moor Springs to Blows Hall and Copt Hewick Hall, are highly satisfactory to all concerned, both as an engineering success and the intrinsic merits of the materials supplied. About 6000 gallons of water per day are forced into the tank at Blows Hall, nearly a mile distant, and 127 feet above the Ram, the overflow falling into a 20,000 gallon underground tank, from which it gravitates through the 4-inch main 800 yards long, with a fall of 70 feet to the service-cocks and fire-plugs at Copt Hewick Hall, where in case of fire, two or three powerful jets of water can be thrown on to the roof of the Hall.

"I consider your method of carrying out the work is everything that could be desired, and, whilst the waste-power water from the Ram is less than you specified, the quantity elevated is just what you guaranteed.—I am, dear sir, yours very truly,
"HENRY MORTON."

From WILLIAM DICKINSON, Esq.,

Agent to the Most Honourable the Marquess of Abergavenny, K.G., Eridge Estate Office, Hargate Lodge, Tunbridge Wells, July 3, 1885.

"Sir,—I am instructed by the Marquess of Abergavenny to say that the Patent Hydraulic Ram, with over two miles of pipes, forcing water to a height of 230 feet, which you erected at Eridge Castle about nine months ago, has given his lordship entire satisfaction, and he has every confidence in its continuing to do so.—I am, sir, yours faithfully,
"WILLIAM DICKINSON."

From Captain TOWNSHEND,

Wincham, February 10, 1877.

"In answer to your inquiry I am glad to say the Hydraulic Ram you sent me in November, 1875, is working exceedingly well, and gives no trouble. It will work when quite immersed, as it has been several times during the floods this winter, forcing up water through a delivery pipe 900 yards long, at the rate of 80,000 gallons per day, although you only promised 50,000."

BLAKE'S RAMS HAVE BEEN SUPPLIED TO THE FOLLOWING AMONGST OTHERS:—

The Duke of Connaught.
The Maharajah of Kashmir.
The Duke of Devonshire.
The Duke of Westminster.
The Duke of Cleveland.
The Duke of Portland.
The Duke of Sutherland.
The Marquess of Ripon.
The Marquess of Downshire.
The Marquess of Abergavenny.
The Marquess of Londonderry.
The Earl of Devon.
The Earl of Derby.
The Earl of Gainsborough.
The Earl of Ilchester.
The Earl of Romney.
The Earl of Granard.
The Earl Beauchamp.
The Earl of Caledon.
The Earl of Lichfield.
The Countess de Morella.
Lady Henry Cholmondeley.
Lady Frankland, Thirkleby Park.
Lord Hothfield.
Lord Londesborough.
Lord Galway.
Lord Leconfield.
Lord Ribblesdale.
Lord Hatherton.
Lord Leigh.
Lord Raglan.
The Rev. Lord Scarsdale.
Lord Bridport.
Lord Clifden.
Lord Boyne.
The Hon. A. C. G. Calthorpe.
The Right Hon. T. Sotheron-Estcourt.
The Hon. R. More O'Farrell.
Sir William Ventris Field.
The Hon. George Kenyon.
The Rev. Hon. E. T. St. John, Bletsoe.
Admiral Sir George Broke-Middleton.
Sir Frederick A. Millbank, Bart., M.P.
Major-General Sir H. M. Havelock-Allan, Bart.
Major-General Fielden, Witton Park.
General Mackenzie, Foveran House.
Gen. Gerard Potter Eaton, The Pole.
Sir James Robert Walker, Bart.
Sir Henry A. Hoare, Stourhead, Bath.
Sir William Fielding, Bart., Feniscowles.
Sir Robert Menzies, Bart., of Menzies.
Sir Humphrey De Trafford, Bart.
Sir Michael Robert Shaw-Stewart, Bart.
Sir Henry W. Ripley, Bart., Acacia.
Sir Michael Arthur Bass, Bart., M.P.
Sir W. C. Worsley, Bart., Hovingham Hall.
Sir Kenneth Smith Mackenzie, Bart.
Sir William Eden, Bart.
Sir Thomas C. C. Western, Bart.
Sir John Shelley, Bart.
Sir Julian Goldsmid, Bart.
Sir Edward Bates, Bart.
Sir Edmund Buckley, Bart.
Sir A. Woodiwiss, Derby.
Colonel Starkie, Lovely Hall.
Colonel Milligan, Cauldwell Hall.
Colonel Towneley, Towneley, Lancashire.
Colonel Hargreaves, Maiden Erleigh.
Colonel Tremayne, M.P.

JOHN BLAKE, ENGINEER, ACCRINGTON, LANCASHIRE, ENGLAND.

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CONTENTS.

Begonia egregia 346
Botanical Magazine 345, 353
Botany, economic ... 358
Cannas, bed of 352
Crocus parviflorus, home of 356
Daffodils 354
Daturas 349
Die Naturlischen Pflanzen-Familien 354
Dipladenias 348
Eichler, Professor ... 353
Espalier, an oblique ... 356
Florists' flowers 347
Forestry 355
Fruit, English, and the uses of sugar 348
Fruits under glass ... 350
Gardeners, a new benefit scheme for 356
Gardeners' orphanage ... 355
Hardy fruit garden ... 351
Harrison & Sons, Leicester 350
Kew Gardens 352
,, Museum, new exhibits at 351
Lindenia 355
Lælia anceps var. Williamsi 349
Narcissus Committee ... 355
National Chrysanthemum Society 354
New York experimental station 355
Obituary—
Baboo Hari Mohan Mookerjan 354
Birch, W. 359
Orchid Album 352
Orchid, an ant-catching . 347
Orchids at Messrs. Low's 347
Plants and their culture . 350
Potatos, deterioration of 357
Primulas at Maidenhead 347
Roses 348
,, cross-bred 356
Royal Horticultural Society 352
Society—
Royal Horticultural ... 358
Thrixspermum Hartmanni 346
Van Geert, M. Auguste . 355
Vine pruning 354
Weather, the 359

ILLUSTRATIONS.

Cannas at Euston Hall, Thetford. (See Supplement.)
Crocus parviflorus, home of 357
Dipladenia, plant of 348
Espalier "Griffon" 356
Lælia anceps var. Williamsi 349
Van Geert, M. Auguste 353

NOTICE TO SUBSCRIBERS.—All Numbers of the "Gardeners' Chronicle" from January 1 of this year are still to be had.

ROYAL BOTANIC SOCIETY.
Gardens, Regent's Park, N.W.
The following are the arrangements for the season:—
SPRING EXHIBITIONS, WEDNESDAYS, March 23 and April 20.
SUMMER EXHIBITIONS, WEDNESDAYS, May 18 and June 15.
EVENING FÊTE and SPECIAL EXHIBITION, WEDNESDAY, July 6.
Schedules of Prizes and Tickets now ready.

ROYAL BOTANIC SOCIETY.
Gardens, Regent's Park, N.W.
FIRST EXHIBITION of SPRING FLOWERS, WEDNESDAY, March 23.
Gates open at 2 o'Clock. The Band will play from 2.30 to 5.30.
Tickets to be had at the Gardens only by vouchers from Fellows of the Society, price 2s. 6d. each.

CRYSTAL PALACE.—GREAT ANNUAL SHOW of SPRING FLOWERS, SATURDAY, March 26. Schedules on application to Mr. W. G. HEAD, Garden Superintendent.
Crystal Palace, S.E.

ROYAL BOTANICAL and HORTICULTURAL SOCIETY of MANCHESTER.
The FIRST SPRING FLOWER SHOW of the present season will be held in the Town Hall, Manchester, on MARCH 15 and 16.
BRUCE FINDLAY, Royal Botanic Gardens, Manchester.

BATH BULB SHOW, WEDNESDAY and THURSDAY, March 23 and 24.
18 HYACINTHS, open, 1st prize, £3; 2d, £2; 3d, £1.
12 HYACINTHS, Amateurs, 1st prize, £2; 2d, £1.
6 ORCHIDS, distinct, open, 1st prize, £3; 2d, £1 10s.
And several other Classes for Plants, Cut Flowers, Fruit and Vegetables—47 Classes in all. Entries close March 19. For Prize Schedules apply to
14, Milsom Street, Bath. BENJAMIN PEARSON, Sec.

BIRMINGHAM BOTANICAL and HORTICULTURAL SOCIETY.
A ROSE SHOW will be held in the Gardens, Egbaston, on JULY 14 and 15, 1887. For Schedules apply to
W. B. LATHAM.

WILTS HORTICULTURAL SOCIETY, Salisbury.
SHOW on AUGUST 25, 1887. Prizes amounting to ONE HUNDRED and FIFTY POUNDS. Division A, Open. 12 Stove and Greenhouse Plants, distinct; 6 Foliage and 6 Flowering. 1st Prize, £15; 2d, £10; 3d, £5. Schedules may be had on application to W. H. WILLIAMS, Hon. Sec.
The Nurseries, Salisbury.

SHEFFIELD and HALLAMSHIRE GARDENERS' MUTUAL IMPROVEMENT SOCIETY.
The TENTH ANNUAL CHRYSANTHEMUM and PRIMULA SHOW will be held in the Drill Hall, Glossop Road, on NOVEMBER 14 and 15. Open to all England. For 24 Incurved Blooms of Chrysanthemums, dissimilar, 1st peize, £10; 2d, £5; 3d, £2 10s. 24 Japanese, dissimilar, 1st prize, £10; 2d, £5; 3d, £2 10s.
E. AUSTIN, Secretary.

THE FIFTH ANNUAL CHRYSANTHEMUM SHOW of "The Taunton and District Gardeners' Association" is fixed to take place this year on THURSDAY, Nov. 17, when several valuable and Special Prizes will be competed for. The Schedules are now ready, and may be obtained of
Mr. W. HOCKIN, Hon. Sec.,
Tauntfield Cottage, South Road, Taunton.

BEGONIA SEED.—Box's Jubilee varieties, choicest, from latest Prize Singles and Doubles, most reliable; per packet, mixed or separate, 1s., 2s. 6d. and 5s; extra pure double white, per packet, 2s. 6d. and 5s. Sow now. Special LIST now ready.
Choicest GLOXINIA, self and spotted, per pkt., 1s. and 2s. 6d.
J. R. BOX (for last ten years J. Laing's partner), Surrey Seed Warehouse, Croydon.

MESSRS. GREGORY AND EVANS, NURSERYMEN, Sidcup, and 285, 286, 287, 288, Flower Market, Covent Garden, W.C., are open to RECEIVE CONSIGNMENTS of Choice CUT FLOWERS in any quantity for their Commission Department. Boxes and Labels supplied.
Telegraph Address—"COMMISSION, SIDCUP."

Floral Commission Agency.
A. HILL AND CO., 52, Hart Street, Covent Garden, W.C., are open to RECEIVE CONSIGNMENTS of Choice CUT FLOWERS in any quantity. A. H. & Co., giving personal attention to all consignments, are thus enabled to obtain the highest market prices. All Cheques forwarded weekly. Bankers and good Trade references. Boxes and Labels supplied.

WANTED, BOX EDGING.—State price per 100 yards.
T. CLARKE, Syegrove House, Chipping Sodbury, Gloucestershire.

WANTED, a quantity of BEDDING PLANTS from Store-pots. Please state price per 100 or 1000.
F. HOLLICK, Florist, Streatham Common.

WANTED, large PALMS, TREE FERNS, and other large ORNAMENTAL FOLIAGED PLANTS, in EXCHANGE for ORCHIDS or other PLANTS. Send full particulars.
The LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, The Vineyard, Garston, Liverpool.

WANTED, Tall Feathery PALMS—Arecas, Seaforthias, and Kentias; DRACÆNAS and CYCAS REVOLUTA.—State size, number of leaves, &c., to
WILLIAM ICETON, Putney Park Lane, Putney, S.W.

WANTED, Large PALMS, DRACÆNAS, TREE FERNS, CYCAS, and other LARGE PLANTS for Furnishing.
WILLIAM DENMAN, Salesman and Horticultural Agent, Covent Garden, W.C.

WANTED, Large Specimens of KENTIAS. Large price given for good plants.
W. WEEKS, Nurseryman, 440, Fulham Road, S.W.

WANTED, BACK NUMBERS of *GARDENERS' CHRONICLE.*
No. 104, Dec. 25, 1875, containing Index, July—Dec. 1875; also No. 131, July 1, 1876, containing Index, Jan.—June, 1876.
Apply, by letter in first instance, stating price, to W. R., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

PANSIES.—Scotch Prize Pansies, 50 best Exhibition varieties, 12s. 6d., 26 for 6s. 6d., 14 for 4s. 6d., post-free, my selection of strong healthy plants.
Competitors please note—Cuthbertson's New CATALOGUE of Competition Flowers and Vegetables, with 30 Illustrations, free to all. Send for a copy.
M. CUTHBERTSON, Seed Grower, Seed Merchant, and Florist, Rothesay.

To the Trade.
WAITE, NASH AND CO. have posted their General CATALOGUE of Agricultural Seeds to all their Customers; if not received, another copy will be sent on application. 79, Southwark Street, London, S.E.

FOR SALE, strong Autumn-struck CALADIUM Golden Gem, 4s. per 100; 35s. per 1000. Also 150 ASPIDISTRA, green and variegated. Packages free.
W. WATSON, Higham Hill, Walthamstow, Essex.

RHODODENDRONS.—Well budded, choice named kinds, 21s., 24s., and 30s. per dozen. Thousands to select from.
JOHN STANDISH AND CO., Royal Nurseries, Ascot.

Rhododendrons.
JOHN WATERER AND SONS, Bagshot, Surrey, are the Great Exhibitors of Hardy Scarlet and White RHODODENDRONS.
Their CATALOGUE is ready, and may be had on application.

EDW. PYNAERT'S NEW PLANT CATALOGUE is now sent post-free on application.
EDW. PYNAERT, Ghent, Belgium.

ORCHIDS A SPECIALTY.
Stock immense in extent, fine in quality, moderate in price. Inspection invited.
HUGH LOW AND CO., Clapton Nursery, London.

TO THE TRADE.—200,000 English OAK, extra strong, in quantities at 3s. 6d. per 1000. Single 1000, 5s. EXCHANGE, Standard APPLES, and PLUMS.
THOS. BEACHAMP, Woodfalls, Downton, near Salisbury.

Grape Vines and Strawberries (in pots).
FRANCIS R. KINGHORN offers very fine stocks of the above in all leading varieties, true to name LIST and Prices on application.
Sheen Nurseries, Richmond, Surrey.

Strawberries a Specialty.
LOVEL'S STRAWBERRY PLANTS, 100, 2s. 6d.; 500, 10s.; 1000, 15s.
Sample and Pamphlet, 3d. Select LIST free.
W. LOVEL AND SON, Strawberry Growers, Driffield.

Mangel Wurzel and Turnip Seeds.
H. AND F. SHARPE are now prepared to make special offers of home-grown MANGEL WURZEL and TURNIP SEEDS, raised in 1886 from specially selected Bulbs. The quality is excellent and the prices are very low.
Seed Growing Establishment, Wisbech.

Notice to the Trade.
NUTTING AND SON'S Wholesale CATALOGUE of AGRICULTURAL SEEDS has now been posted to the Trade; please inform them if not duly received.
106, Southwark Street, London, S.E.
TELEGRAPHIC ADDRESS—"NUTTING, LONDON."

Trade Price Current—Farm Seeds—1887.
PETER LAWSON AND SON (Limited), Edinburgh, have now Posted their ANNUAL CATALOGUE of AGRICULTURAL SEEDS to their customers, but should there be any not delivered, Copies will be sent upon application.

SNOWDROP POTATOS.—The best for table or exhibition. About 40 stones of good Seed to part with.
W. H. DIVERS, Ketton Hall, Stamford.

SALES BY AUCTION.

Wednesday Next.—(Sale No. 7375).
SPECIAL SALE of ORCHIDS in FLOWER and BUD.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, March 16, at half-past 12 o'Clock precisely, a fine collection of ORCHIDS in Flower and Bud, including some splendid forms of Odontoglossum Alexandræ, O. Pescatorei, O. Andersonianum, and other Hybrids; Dendrobium Ainsworthii, D. Ainsworthii roseum, D. crassinode album, D. Wardianum, some grand pieces of Phalænopsis of sorts, a fine specimen of Cymbidium eburneum with thirty-three flowers, Cypripediums, fine pieces of Cœlogyne cristata, including the Chatsworth variety, Masdevallias; also six cases of Araucaria excelsa as received.
On view morning of Sale, and Catalogues had.

Wednesday and Thursday Next.
15,000 Grand Bulbs of LILIUM AURATUM, just received from Japan, in the finest possible condition.

MR. J. C. STEVENS will include the above in his SALES by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY and THURSDAY NEXT, March 16 and 17.
On view mornings of Sale, and Catalogues had.

Wednesday and Saturday Next.
Consignments of Choice named Indian AZALEAS, CAMELLIAS, PALMS, in variety; DRACÆNAS, Hybrid RHODODENDRONS, and other Plants, from Ghent; First-class Standard and Dwarf ROSES, including most of the leading varieties; Hardy Ornamental SHRUBS and CONIFERS, FRUIT TREES, of sorts; BORDER PLANTS, in quantity; GLADIOLI, fine clumbs of LILY OF THE VALLEY, SPIRÆAS, &c.

MR. J. C. STEVENS will SELL the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY and SATURDAY NEXT, March 16 and 19, at half-past 12 o'Clock precisely each day.
On view mornings of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7376.)
VALUABLE IMPORTED ORCHIDS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, March 17, at half-past 12 o'Clock precisely, by order of Mr. F. Sander, grand importations of ADA AURANTIACA, in superb condition, and in unusually large and fine masses; ODONTOGLOSSUM PESCATOREI, with large and distinct-looking bulbs, collected in the best district, from which many fine and rare forms have flowered; ODONTOGLOSSUM TRIUMPHANS, in large and compact masses, the whole being in superb condition; also a splendid lot of the rare and pretty ODONTOGLOSSUM BLANDUM, just received in extra condition; strong Pieces of ODONTOGLOSSUM CORONARIUM, ANGULOA CLOWESII, fine lot; large masses of ONCIDIUM MARSHALLIANUM, several new and rare CŒLOGYNES, collected in hitherto unsearched districts in Upper Burmah; a quantity of Burmese DENDROBES, the whole in the best possible condition; and many other rare and fine ORCHIDS.
On view morning of Sale, and Catalogues had.

Woodford, E.
Almost without reserve, Owner going abroad.
Small FREEHOLD NURSERY, suitable for a young beginner; also the STOCK and UTENSILS in Trade.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, The Nursery, Derby Road, Woodford, on MONDAY, March 14, at 1 o'Clock precisely, the FREEHOLD NURSERY, consisting of a Plot of Ground with 40 feet frontage to Derby Road, and three long Greenhouses, all well heated. Following the sale of the property, the whole of the STOCK will be offered in suitable lots, consisting of Ferns, Roses, Geraniums of sorts, Primulas, Begonias, Seeds, UTENSILS in Trade, &c.
May now be viewed. Catalogues may be had on the Premises; of Messrs. TERRELL AND ATKINSON, Solicitors, 33, Gracechurch Street, E.C.; and of the Auctioneer, 67 and 68, Cheapside, London, E.C., and Leytonstone.

Wedneseay Next.
3000 Splendid Bulbs of LILIUM AURATUM.

MESSRS. PROTHEROE AND MORRIS will include the above in their SALE, on WEDNESDAY NEXT, March 16.
On view morning of Sale and Catalogues had of the Auctioneers, 67 and 68. Cheapside, E.C.

Every Wednesday and Saturday.
SALES of CAMELLIAS, AZALEAS, PALMS, and other PLANTS in variety, from Belgium, and elsewhere; LILIUM AURATUM and many rare LILIES, also a collection of beautiful IRIS from Japan (see native drawings), 500 choice named Standard and Dwarf ROSES, FRUIT TREES, CARNATIONS, PICOTEES, English grown LILIES, and a great variety of hardy BULBS and PLANTS.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., every WEDNESDAY and SATURDAY, at half-past 12 o'Clock precisely each day.
On view morning of Sale, and Catalogues had.

Hendon, N.W.
Re James Wright, The Bell Lane Nursery, Hendon—A Bankrupt. Absolute Sale, Thursday and Friday next. Important to the Trade.

MESSRS. PROTHEROE AND MORRIS are instructed by the Official Receiver, A. H. Stoneham, Esq., to SELL by AUCTION, on the premises as above, on THURSDAY and FRIDAY NEXT, March 17 and 18, at 12 o'Clock precisely each day, without the least reserve, the whole of the NURSERY STOCK, comprising thousands of CONIFERÆ, and EVERGREEN SHRUBS, in various sizes, 2000 PRIVET, 5000 LIMES, 8 to 12 feet, 10,000 Forest Trees, Greenhouse Plants, three Greenhouses, Hot-water Piping, three Horses, capital Market VAN, Household Furniture and effects.
On view day prior to Sale. Catalogues had on the premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C.

Friday Next.
CATTLEYA TRIANÆ.
ONCIDIUM MONACHICUM.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. J. C. Charlesworth, Heaton, Bradford, to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, March 18, at half-past 12 o'Clock precisely, a splendid consignment of CATTLEYA TRIANÆ. The plants have been collected by Mr. W. Hennis, from the same district where he collected Cattleya Trianæ Leeana and other grand varieties. The consignment consists of plants specially selected for shape, and contains many extra large pieces the majority being of the dark coloured type.
Dried flowers will be on view.
Also semi-established plants of ONCIDIUM MONACHICUM. This very handsome Oncidium, hitherto unknown to many Orchidists, is of very easy culture, requiring the same treatment as O. superbiens. One fine plant, with twenty flowers, will be offered.
A splendid hybrid ODONTOGLOSSUM and other ORCHIDS in FLOWER will also be included in the SALE.
On view morning of Sale, and Catalogues had.

Friday Next.
Twelve Cases of CATTLEYA SPECIES,
Collected more than 100 miles away from Cattleya Mendelii district, and received direct from Brazil through Messrs. J. F. Obree & Co., Southampton.
For Sale without Reserve.

MESSRS. PROTHEROE AND MORRIS will include the above in their SALE of ORCHIDS on FRIDAY NEXT, March 18.
On view morning of Sale, and Catalogues had.

Friday Next.
LÆLIA ELEGANS.
Just received direct in magnificent condition.
They have been collected and sent home by Mr. Osmers, who is so well known as a collector of this and other Orchids, having travelled for many years in Brazil. The consignment will include one plant of LÆLIA ELEGANS TURNERII, gathered in bloom, a dried flower of which will be shown; the whole of the plants (about 100 in number) were collected in the same locality, and more of this variety may be amongst them.

MESSRS. PROTHEROE AND MORRIS will SELL the above in their Orchid Sale on FRIDAY NEXT, March 18, by order of Mr. J. D. Osmers, without reserve.
On view morning of sale, and Catalogues had.

Preliminary Notice.
The Downside COLLECTION of ORCHIDS.
Unusually IMPORTANT SALE of selected duplicate plants from this renowned Collection, consisting chiefly of examples matchless in point of rarity and culture.
ALTERATION of DATE to MAY 3 and 4.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from Wm. Lee, Esq., to SELL by AUCTION, on the Premises, Downside, Leatherhead, on TUESDAY and WEDNESDAY, May 3 and 4 (instead of April 26 and 27, as advertised last week), in consequence of the overcrowded state of the houses, a selected assortment of ESTABLISHED ORCHIDS, comprising probably the most valuable assemblage of plants ever offered in a single sale.
N.B.—It is proposed to at once Catalogue the plants, many of which are now coming into flower. Intending purchasers will thus be enabled to inspect the lots, note the varieties, and mark their Catalogues accordingly.
Cards to view the Collection may be obtained of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Orchids in Flower.
SPECIAL SALE, MARCH 29.

MESSRS. PROTHEROE AND MORRIS beg to announce that their next SPECIAL SALE of ORCHIDS, in flower and bud, will take place as above, for which they will be glad to receive notice of entries as early as possible.
Central Auction Rooms, 67 and 68, Cheapside, London, E.C.

PRIVATE COLLECTION of ORCHIDS for SALE.

THE LIVERPOOL HORTICULTURAL CO. (John Cowan), are pleased to announce that they are instructed by E. Harvey, Esq., of Riversdale, Aigburth, near Liverpool, to offer for SALE his valuable COLLECTION of ORCHIDS.
His collection is well known as one of the best in this part of the country; the plants are all in splendid condition, Mr. Harvey having devoted close personal attention to them for many years.
Rare and valuable varieties have constantly been added, and inferior varieties weeded out; an accurate description of each plant has been kept, and the catalogue description may therefore be depended upon.
It is impossible to give details in a short advertisement, but some idea will be got of the importance of the Collection when it is stated that the Catalogue consists of about fifty closely printed pages; it is now ready, and will be sent post-free on application.
The collection will be on view here from Tuesday next, the 15th inst., and orders should reach us on or before the 23rd inst. See catalogue for details as to method of selling. Applications for catalogues should be addressed to The Vineyard and Nurseries, Garston.

WANTED, within easy distance of London, by a man well known in the Trade, and having an extensive connection, a SMALL NURSERY, near a Railway Station, to which there is a good train service; if possible, in a neighbourhood where additional Land can be procured, adapted for the extensive Cultivation of Hardy Bulbs.
Apply, in the first instance, giving Acreage, amount of Glass, &c.—D. L., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

FOR DISPOSAL, a FLORIST'S BUSINESS. First-class opening; twenty-one years' lease. Price, £350, 4000 feet of glass, 20,000 Bedding-out Plants, and other Stock included. Leaving through illness.
J. L., 42, The Grove, Ealing, Middlesex.

FOR DISPOSAL,
MARCH 25, or after,
MR. LAING'S NURSERY, Twickenham.
Owing to the Death of Mr. LAING, this LONG-ESTABLISHED NURSERY, occupied by Mr. LAING for the last fifty years, with Lease, Goodwill and Stock of GREENHOUSES, PITS, SHRUBS, PLANTS, and IMPLEMENTS, for EARLY SALE. 5 minutes' walk from St. Margarets; 15 minutes' walk from Twickenham; 20 minutes' walk from Richmond. All Stations of the S.-W. Railway, close to the new residential neighbourhood of St. Margarets, and ten minutes' walk from centres of Richmond and Twickenham towns respectively. As a Home Nursery, held with land at Teddington on Twickenham Common (as done by Mr. Laing), or as a Nursery for a London Shop, a Market Grower, or for an energetic man wishing to commence business with a long-established connection, the opportunity is unexceptional. Particulars now ready.
Apply to GEORGE PAUL, The Old Nurseries, Cheshunt.

To Gardeners, Florists, and Others.

FOR SALE, situate 3 miles from Cheltenham, six Glass-houses, with DWELLING-HOUSE, OUT-BUILDINGS, &c., and about 2 acres of Land.
Apply to T. TARLING, Field House, Bishop's Cleeve, near Cheltenham.

FOR SALE, very valuable FREEHOLD LAND, from ½ Acre to 10 Acres. Splendid views. Near the Thames. Good dry soil.
For particulars apply to Mr. ABEL, "King's Arms" Hotel Maidenhead.

TO BE DISPOSED OF, in consequence of ill-health, an old-established and genuine FLORIST'S and JOBBING BUSINESS. In same hands upwards of twenty years. All necessary Houses, Pits, and Plant for carrying on a good and profitable Trade. Every inspection solicited. Well stocked for the coming season.
For particulars, apply at the Victoria Nursery, Malham Road, Forest Hill, S.E.

FOR DISPOSAL, through ill health, in an important Market Town, near London, an old-established NURSERY, FLORIST'S, and JOBBING BUSINESS; large Dwelling-house, Shop attached, with good frontage to the Market Place; several Greenhouses and Frames, and 3 acres of excellent Land, mostly stocked, and in working order. Seed Business can also be acquired if desired. An immediate purchaser will be very liberally dealt with, and it is an opportunity that seldom occurs.
For particulars, apply by letter to C. D., 17, Norton Folgate, London, E.

To Gentlemen's Gardeners, Market Growers,
PRIVATE GENTLEMEN and OTHERS.

TO BE LET, or SOLD, goodwill and possession of old-established NURSERY, 11 spacious Greenhouses, Hot-water apparatus complete, &c., every convenience; Dwelling House, &c. Incoming very low to immediate purchaser.
Apply RICHARD BIGGS, The Nurseries, Lewisham, S.E.

To Gardeners and Others.

TO LET, or SELL, a NURSERY, standing on nearly Four Acres of Land, with a substantially built Stone Dwelling-house; also two Cottages, about 6000 feet of Glass, Stabling, Cart-sheds, and other Outbuildings.
L. C. M., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

To Fruit and Flower Growers, Market
GARDENERS and OTHERS.
Surrey, 18 miles from London midway betwixt two stations, and in the midst of a district where there is a local demand.

TO BE LET on LEASE or SOLD IMMEDIATELY, owing to owner's ill-health, an excellent FRUIT GARDEN, well stocked, about 12 acres in extent (more or less Land could be had as desired), with numerous Glass Erections, including Vinery, Strawberry, and Tomato Houses, and several Pits. All heated.
Substantial brick-built 7-roomed Cottage, also Stabling, Carshed, Cow-shed and other Buildings, Fruit, Seed Potting and Washing Sheds. Terms of
WATERER AND SONS, Land Agents, Chertsey.

TO BE LET or SOLD, a compact little FLORIST'S NURSERY with four good Houses and several Pits. Has a flourishing trade in a first-rate position close to the Town. Stock small.
Apply to HARRISON AND SONS, Seed Merchants, Leicester.

Hoddesdon, Herts.

TO BE SOLD, or LET, Freehold detached Residence, on Gravel, standing within Grounds of about an Acre, including Pleasure Gardens thoroughly planted with Shrubs of mature growth, and walled Kitchen Garden, 10 Bed and Dressing-rooms, Bath-room, Drawing and Dining-rooms, each 23 feet long; Breakfast-room and Ground-floor Offices, with Cellarage, Stabling for 2 Horses, Man's room and Buildings. Additional Land can be had.
Messsrs. DEBENHAM, TEWSON, FARMER, AND BRIDGEWATER, 80, Cheapside, E.C. (3995S.)

To Amateur Fruit Growers.

TO LET, furnished, an old-fashioned comfortable HOUSE, with Stables and Coach-house; walled Garden, large Orchard-house, Small Hothouse, Conservatory and Rose House in excellent order and full bearing.
Apply by letter only to H., care of W. H. Hastings, Esq., Solicitor, 110, Cannon Street, E.C.

Landscape Gardening.

H. F. MALLER (of the firm of B. Maller & Sons), late Pupil of the Crystal Palace School of Landscape Gardening, is prepared to FURNISH PLANS, or undertake any kind of the above work.—61, High Street, Lewisham.

FOR SALE, cheap, Nine clean, healthy PINES. Also a few small ones, or would EXCHANGE for FERNS.
W. ATKIN, The Gardens, Thistleworth, Park Road, Twickenham.

SEED POTATOS.
IMPERATOR, WHITE ELEPHANT, SCOTCH FLUKES — 6s. per cwt. 100s. per ton.
By taking One Ton of each kind, 90s. per ton.
ALFRED COCKERILL, 18 and 20, The Drapery, Northampton.

FINE PYRAMID VICTORIA PLUMS and DAMSONS, £2 per 100; Hybrid RHODODENDRONS, all colours, 1½ to 2 feet, 30s. per 100; London PLANE TREES, 8 to 12 feet, £3 per 100; HOLLY, bushy, 1 to 1½ foot, 25s. per 100; do., 1½ to 2 feet, 30s. per 100; many others cheap.
W. JACKSON, Blakedown, Kidderminster.

FOR SALE, the following CABBAGES, good stocks and good growth:—Enfield Market and Dwarf Nonpareil, 50s. per cwt.; Dwarf York, 45s. per cwt.; and Red Cabbage, 90s. per cwt.
Apply EDWARD WARNER, Seed Grower, Kelvedon.

ORCHIDS FOR SALE, CHEAP, to make a clearance.—Odontoglossums in great variety, the bulk not flowered; some fine varieties of O. Alexandræ and its hybrids are amongst them. Strong plants, imported some years, and likely to flower this season. Price £25 per 100. Apply to
Rev. J. B. NORMAN, Whitchurch Rectory, Edgware, London.

Reduced to 2s. 6d. each.
NEW CRYSANTHEMUM, "MR. RALPH BROCKLEBANK."—A beautiful bright primrose-yellow sport front from Meg Merrilies. Was last season awarded Eight 1st-class Certificates, including N.C.S. Mr. Molyneux writes:—"The best variety of the year in the Japanese section is undoubtedly the New Yellow Sport from Meg Merrilies." Strong plants, capable of yielding exhibition blooms, 2s. 6d. Cash with order.—THOMAS WINKWORTH, Childwall, Liverpool.

The Choicest Specimens of Evergreen
TREES and SHRUBS.
RICHARD SMITH AND CO. beg to announce that they have just published a little LIST in which they offer the above at prices practically within the reach of all, and they will be happy to send same free by post.
St. John's Nurseries, Worcester.

Laurels, Hollies, English Yews, &c.
JOHN PERKINS AND SON offer the following fine, bushy, recently transplanted EVERGREENS, which will move safely now:—
LAURELS, Common, 2½ to 3½ feet, 20s. per 100.
HOLLIES, Green, 2 to 2½ feet, 45s. per 100.
YEWS, English, 2½ to 3 feet, 70s. per 100.
THUIA LOBBII, 2 to 3 feet, 40s. per 100.
Billing Road Nurseries, Northampton.

RHODODENDRON PONTICUM
FOR SALE.
SEEDLINGS, 6 to 9 inches high, 70s. per 1000.
TRANSPLANTED, 1 to 1½ foot, 40s.; 1½ to 2 feet, 55s.; 2 to 2½ feet, 90s.; 2½ to 3 feet, 140s. per 100 and upwards.
Mostly stout bushy plants, well set with bloom-buds.
Apply to HEAD GARDENER, Plas Gardens, Dinas Mawddwy, Merionethshire.

NEW LATE-FLOWERING CHRYSANTHEMUM, Mrs. N. Davis (Yellow sport from Princess Teck), 3s. 6d. each. NEW POMPON, Mrs. Mardlin, splendid variety for Exhibition, 1s. 6d. each. For other New Varieties see CATALOGUE, which contains more complete directions upon cultivation than are given in any other Catalogue. Price 4d.
W. E. BOYCE, F.R.H.S., F.N.C.S., Victoria Cottages, Archway Road, Highgate, N.

HOLLYHOCKS.—We are again in a position to offer finest named varieties, strong, healthy plants, at 18s., 24s., and 30s. per dozen. Early orders solicited.
R. B. LAIRD AND SONS (late Downie & Laird), Nurserymen, Edinburgh.

Reduced Prices to meet Depression.
DESCRIPTIVE CATALOGUE, comprising fine transplanted FRUIT TREES, ROSES, Hardy CLEMATIS, RHODODENDRONS, CONIFERS, TREES and SHRUBS, CLIMBERS, FOREST TREES, &c., free on application to
GEO. JACKMAN AND SON, Woking Nursery, Surrey.

LILIUM AURATUM. — Good, plump, sound Bulbs, 6s., 9s., 12s., 18s., and 24s. per dozen; extra strong, 20s. and 42s. per dozen. All other good LILIES at equally low prices.
Mr. WILLIAM BULL'S Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

Come and See.

OUR NURSERY.

ALL our various departments are now in splendid order, and stock immense, and a walk through our many houses now is highly interesting and enjoyable. ZONAL PELARGONIUMS, BEGONIAS, CINERARIAS, CYCLAMEN, PRIMULAS, and CARNATIONS—is the finest floral sight perhaps ever seen at this season. Send for a Catalogue of all the best plants and seeds ever issued. Even in America they are the best.

Mr. JOHN RICHMOND, Bath Beath, New Utrecht, King's Co., Long Island, U.S. America, Feb. 18, 1887.
"The collection of Flower Seeds from your establishment last year proved something grand. My friends greatly admired them for their beauty and quality, and pronounced them wonderful. Send me your Catalogue—I must have more."

G. W. CHAPIN, Esq., 5, Parade Street, Providence, R.I., U.S. America, Feb. 25, 1887.
"I received thirty-nine CUTTINGS of Chrysanthemums; twelve were affected with damp, but I shall save four of them. Send six of Virginale. Your packing is perfect."

H. CANNELL & SONS,

THE HOME FOR FLOWERS — SWANLEY, KENT.

New Edition, Corrected up to Date.

THE COTTAGER'S CALENDAR OF GARDEN OPERATIONS.

By the late Sir JOSEPH PAXTON, M.P. Reprinted from the *Gardeners' Chronicle.*

Price 3d., Post-free 3½d.;
Twenty-five Copies, 5s; fifty, 10s.; and one hundred, 20s.

Parcels of not less than twenty-five delivered, Carriage Free, in *London* only.

Not less than one hundred Carriage Paid to any part of Great Britain.

W. RICHARDS, 41, WELLINGTON STREET, STRAND, LONDON, W.C.

FRIDAY NEXT.

CATTLEYA TRIANÆ, ONCIDIUM MONACHICUM.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. J. C. CHARLESWORTH, Heaton, Bradford, to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, March 18, at half-past 12 o'Clock precisely, a splendid consignment of CATTLEYA TRIANÆ. The plants have been collected by Mr. W. Hennis, from the same district where he collected Cattleya Trianæ Leeana and other grand varieties. The consignment consists of plants specially selected for shape, and contains many extra large pieces, the majority being of the dark coloured type. Dried flowers will be on view.

Also semi-established plants of ONCIDIUM MONACHICUM. This very handsome Oncidium, hitherto unknown to many Orchidists, is of very easy culture, requiring the same treatment as O. superbiens. One fine plant with twenty flowers will be offered.

On view morning of Sale, and Catalogues had.

Myrobella.
PRUNUS MYROBALANA, or CHERRY PLUM.—The best stuff for Mending Old Fences or Making New Ones. Grows fast in poorest soils. Much stronger than Whitethorn. It is also an excellent Stock for the Plum. A sample hundred, 2 to 3 feet, sent on receipt of 6s., 50 for 3s. Full further particulars of
EWING AND CO., Sea View Nurseries, Havant, Hants.

EIGHTY THOUSAND CLEMATIS, in Pots, of all the finest Double and Single Varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants. Descriptive LIST on application.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

HARDY RHODODENDRONS and AZALEAS.—The most extensive stock in the Kingdom of the finest hardy varieties known.
☞ The Rhododendrons in Rotten Row and the Botanic Gardens, Regent's Park, are supplied by
ANTHONY WATERER, Knap Hill Nursery, Woking, Surrey.

CREEPERS FOR WALLS.—By planting what is suitable, an ugly object may easily be made beautiful. Descriptive LIST and advice free.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

SMALL SHRUBS and CONIFERÆ:—Cupressus Lawsoni, 12 to 15 inches, transplanted, 60s. per 1000; C. erecta viridis, 1 to 1½ foot, extra, 12s. per 100; C. stricta, 10 to 12 inches, 12s. per 100; C. gracilis, 10 inches, 12s. per 100; Cedrus Deodara, 2-yr., 50s. per 1000; Thuia Lobbii, 9 to 12 inches, 50s. per 1000; T. Ellwangeriana, 9 to 10 inches, 12s. per 100; Thuiopsis dolobrata, 9 to 10 inches, transplanted, 10s. per 100; Retinospora plumosa, 12 to 15 inches, bushy, 12s. per 100; R. squarrosa, 9 inches, transplanted, 10s. per 100; Araucaria imbricata, 8 inches, fine, 40s. per 100; Pinus Cembra, 1-yr., 5s. per 1000; P. excelsa, 2-yr. 1-yr. transplanted, 10s. per 100; P. insignis, 1-yr. transplanted, 6s. per 100; P. Nordmanniana, 1-yr., 25s. per 1000; Abies Douglasii, 6 inches, 6s. per 100; ditto, 9 to 12 inches, 12s. per 100; English Yew, 6 to 9 inches, 8s. per 100; American Arborvitæ, 9 to 10 inches, 50s. per 1000; Box, Tree, 9 to 10 inches, 40s. per 1000; Sweet Bay, 9 to 12 inches, 7s. 6d. per 100; Evergreen Oaks, 2-yr., fine, 6s. per 100; Laurustinus, 8 inches, 8s. per 100; Portugal Laurels, transplanted, 6 to 8 inches, 60s. per 1000; Common Laurels, 2-yr., 20s. per 1000.
GARLIES MITCHELL, Nurseryman, Stranraer.

Begonias a Specialty.
LAING'S BEGONIA SEED.—Awarded Two Gold Medals. From Prize Plants, in sealed packets. Choice mixed, from single varieties, 1s., 2s. 6d., and 5s. per packet; double varieties, 2s. 6d., 3s. 6d., and 5s. per packet. Collections—12 named varieties, separate, 5s. 6d.; 6 ditto, 3s. Order direct from us, to procure the genuine seed.
JOHN LAING AND CO., Seedsmen, Forest Hill, S.E.

SCOTCH FIR, AUSTRIAN FIR, and CORSICAN FIR.—The subscribers beg to make a special offer of very fine transplanted trees of above Firs. The Scotch is the true Red-wooded Highland Pine. Special prices for large quantities.
LITTLE AND BALLANTYNE, by Special Appointment, Nurserymen and Seedsmen to the Queen, Carlisle.

JOSIAH H. BATH offers the following varieties of SEED POTATOS:—

Rivers' Royal Ashleaf	Dalmahoy
Myatt's Prolific Do.	Early Don
Old Ashleaf	,, Bog
Early Shaw	York Regent
,, Goodrich	Scotch Do.
,, Rose	Dunbar Do.
Imperator	Fluke
Beauty of Hebron	Paterson's Victoria
White Elephant	Snowflake
Schoolmaster	Scotch Champion,

And other leading varieties. Prices upon application.
1 and 3, York Street, Borough Market, S.E.

ASPARAGUS, grand Roots for Forcing, 2s. per dozen, 12s. 6d. per 100; strong, for planting, 2s. 6d. per 100. SEAKALE, forcing, 2s. 6d. per dozen, 16s. per 100; planting, 2s. per dozen, 12s. 6d. per 100.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

CHARLES NOBLE, Bagshot, offers Nine kinds of LILIES.
GIGANTEUM SPECIOSUM, 3 vars.
FORTUNEI FLORE-PLENO.
PARDALINUM CALIFORNICUM.
SPLENDENS LEOPOLDI.
Two of each, 18, for 15s. cash.

CHARLES NOBLE, Bagshot, offers the finest selection of named RHODODENDRONS, AZALEAS ANDROMEDAS, &c.

CHARLES NOBLE, Bagshot, offers the finest selection of CONIFERS and HARDY SHRUBS.

CHARLES NOBLE, Bagshot, offers general NURSERY STOCK, including FRUIT TREES, AVENUE TREES, and others. All engaged in planting should see the Nursery and judge for themselves. A very fine selection of Fruiting Pyramid PEARS.
C. NOBLE, Bagshot.

NEW INCURVED CHRYSANTHEMUM
"MRS. NORMAN DAVIS."
Bright golden-yellow sport from "Princess of Teck." Finest sport obtained for many years. Invaluable alike for exhibition and for cutting. For late market work it will prove a capital companion to its parent variety. First-class Certificate Royal Horticultural Society and National Chrysanthemum Society. Strong plants now ready, 3s. 6d. each, three for 7s. 6d. Cash with order.
DAVIS AND JONES (late N. Davis), Chrysanthemum Nurseries, Camberwell, London, S.E.

Cheap Bedding Plants—Special Offer.

WILLIAM BADMAN offers as under, from Store-pots, all well-rooted, and fit for present potting. The present is a good time for making up losses sustained during the winter:—

VERBENAS, Purple, White, Scarlet, Crimson, Rose, 6s. per 100, 50s. per 1000; 12 choice named varieties, 8s. per 100.
LOBELIA Bluestone, pumila magnifica, true, from Cuttings, 2s. 6d. per 100, 20s. per 1000; Brighton Blue, fine, 3s. per 100, 21s. per 1000.
CALCEOLARIA Golden Gem, 5s. per 100, 40s. per 1000; Camden Hero, fine dark, 6s. per 100.
HELIOTROPE Jaun d'Amour, Miss Nightingale, dark, 6s. per 100, 50s. per 1000.
AGERATUM Imperial Dwarf, blue, 5s. per 100, 40s. per 1000.
COLEUS VERSCHAFFELTI, bedding crimson, 6s. per 100, 50s. per 1000.
IRESINE LINDENI, dark crimson, good bedder, 6s. per 100, 50s. per 1000.
PELARGONIUM Vesuvius, finest bedding scarlet, 8s. per 100, 75s. per 1000; Master Christine, 12s. per 100; Mrs. Levers and Jenny Dodds, fine pink, 10s. per 100; Henry Jacoby, best crimson, 12s. per 100.; Madame Vaucher, white, 12s, per 100; Queen of Belgians, finest white, 3s. per dozen, 20s. per 100; Niphetos, bedding white, 12s. per 100; Waltham Seedling, Lucius, Jean Sisley, and White Vesuvius, 10s. per 100.
SILVER VARIEGATED May Queen (Turner's), Princess Alexandra, Flower of Spring, 12s. per 100; Little Trot, dwarf, 12s. per 100; Prince Silverwings, 10s. per 100,
GOLD-LEAF Crystal Palace Gem, 10s. per 100; Happy Thought, 12s. per 100.
BRONZE McMahon, Black Douglas. The Czar, the best bedders, 15s. per 100.
TRICOLOR Mrs. Pollock, 15s. per 100; Sophie Dumaresque, Lady Cullum, Sir R. Napier, 18s. per 100.
DOUBLES, F. V. Raspail, fine scarlet; M. Thibaut, pink, M. Baltet, best white, 12s. per 100.
TROPÆOLUM Vesuvius, 8s. per 100; coccinea elegans, best dwarf scarlet, 10s. per 100.
FUCHSIAS in twelve good named sorts, 8s. per 100.
PELARGONIUMS, Show and Decorative, from single pots, good, 20s. per 100, 3s. per dozen.

NOTE.—Not fewer than twenty-five of any one sort supplied at above rate. Packing included. Terms Cash.
Cemetery Nurseries, Gravesend, S.E.

"HARTLAND'S YEAR-BOOK of RARE SEEDS for 1887." Post-free to any address. Special Seeds of Hardy Primulas, Oxlips, Cowslips, and Polyanthus; also plants of same at p. 4 in great variety. Auricula, Giant Yellow, or Dusty Miller, beautiful, 1s. per packet. Cowslip, Danesfort Yellow Hose-in-Hose, deliciously scented, 1s. 6d. per packet. Oxlip, Hartland's Giant William of Orange, producing enormous heads of the richest golden-yellow and most beautifully perfumed, the eyes the colour of the well-known Soleil d'Or Narcissus, 2s. 6d. per packet. The above, with various other "Rare Seeds," are offered on pp. 31 and 32 in "Addendum." *** 20,000 Ard-Righ Irish King Single Daffodil, to bloom in the open very early. Orders booked now for Bulbs of this very early Market sort. Sample Box of Specimen Blooms, post-free, 1s. 6d.—WM. BAYLOR HARTLAND'S Old Established Garden Seed Warehouse, Cork, Ireland.

Choice Flower Seeds.

JOHN LAING AND CO.'S PRIZE STRAINS of FLOWER SEEDS.

CALCEOLARIA, CINERARIA, CYCLAMEN, HOLLYHOCK, PANSY, PRIMULA, in separate packets, and GLOXINIA, erect, drooping, spotted, and mixed. Per packet, post-free, 1s. and 2s. 6d.

ANTIRRHINUM, AURICULA, DAHLIA, PENTSTEMON, PHLOX, and POLYANTHUS, per packet, post-free, 6d. and 1s.

These superb strains are unsurpassed in quality.
JOHN LAING AND CO., Seedsmen, Forest Hill, S.E.

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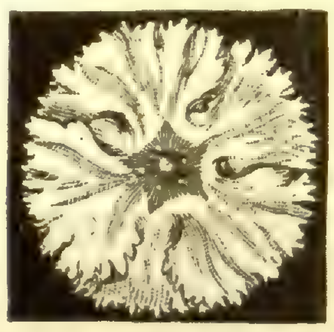

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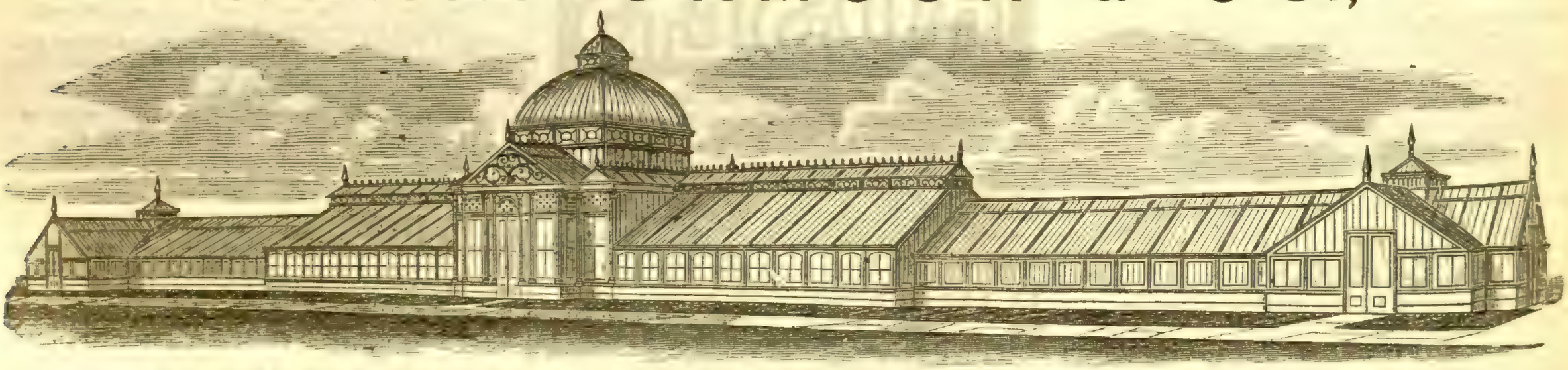

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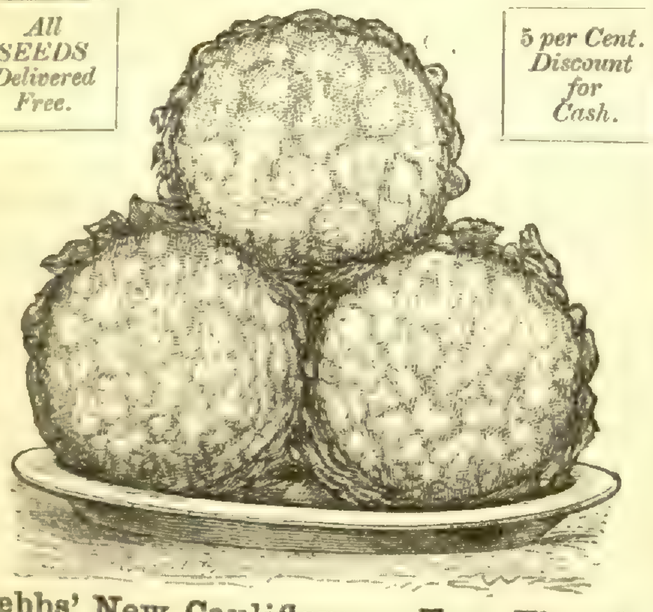

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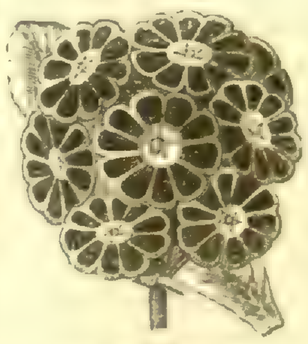

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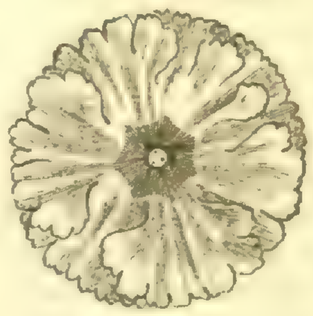

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NURSERIES.

As a Supplement to the "GARDENERS' CHRONICLE" for next week, March 19, will be published an Ink-Photograph of an AVENUE OF PALMS (OREODOXA), BOTANIC GARDEN, CEYLON.

THE
Gardeners' Chronicle.
SATURDAY, MARCH 12, 1887.

THE "BOTANICAL MAGAZINE."

As already stated in this journal (n.s., xxvi., p. 784), with the completion of its 112th volume the *Botanical Magazine* attained the hundredth year of its uninterrupted existence, having long outlived the numerous rivals and imitators which its successful career gave rise to from time to time. Indeed, it is doubtful whether it is not the only illustrated serial ever published that has enjoyed a century of unbroken vitality; and its history is the history of flower gardening in the open and under glass, from its infancy to the achievements of the present day. A hundred years is but a short period, yet during the past century the cultivation of tropical and subtropical plants for the delights they afford the eye has developed from a few small beginnings by wealthy amateurs and botanic gardens to an almost incredible extent, both as to what is accomplished and the number of persons engaged in producing a luxury which is essentially a luxury of the present age. From its commencement up to the present time varieties of garden origin, or florists' flowers, have, with very few exceptions, been excluded from the *Botanical Magazine*. Nevertheless, and in spite of its title, which was given at a period when scientific botany was still in its infancy, the *Botanical Magazine* contains the history of flower gardening in the various phases through which it has passed during the last century. Although the marvellous creations of the gardener's skill are not represented therein, the wild parents from which he has obtained such results are so in most instances, and remain as silent witnesses of what may be effected by education, if it may be so termed, and freedom from the struggle for existence which plants are ever exposed to under natural conditions. Moreover, the serials which have been more specially devoted to the illustration of florists' flowers may be regarded as the legitimate offspring of the *Botanical Magazine*, in the double sense of the priority of the latter, and by reason of its being a refuge for the usually less showy progenitors of the florists'

flowers themselves. This being so, a sketch of the history of the career of the *Botanical Magazine* and its collateral associations will doubtless interest many readers of the *Gardeners' Chronicle*, for it is a part of their history too, and their forefathers' history.

But before proceeding to that history itself it may be well to go back a little further, and glance at the condition of flower gardening in England previous to the founding of the *Botanical Magazine*, as we shall then be in a better position to appreciate the advances made in the art subsequently. It will be understood that in a sketch of this nature only the most noteworthy events, and a selection of the principal actors and books, can be passed in review; and it will be confined almost entirely to English illustrated works, though mention will be made of others which may be regarded as connecting links in the history of flower gardening.

Flower Gardening in England Anterior to the Foundation of the "Botanical Magazine."

The earliest English printed book with figures of plants that I have seen, and probably the first produced, is the *Grete Herball* of 1526, "emprinted at London, in Southwarke, by me, Peter Treveris;" though it is stated by Pulteney, on the authority of. Ames, that the first edition was printed in 1516 The oldest Banksian copy is, however, of the same date as that in the Kew library. This work, which is only mentioned on account of its historical interest, was translated from the French. There were numerous Continental editions of a book similar in character under the title of *Ortus Sanitatis*, or "Garden of Health;" the oldest at Kew having been printed at Mainz, in 1485. It is a thick quarto, with numerous coarse woodcuts, which have been rudely coloured by hand.

The *Grete Herball* is a small quarto book, and the principal object of it, as of all the early works on plants, was to set forth the medicinal virtues of herbs and trees; it also includes some medicinal minerals. Although it is not filled with the gross astrological superstitions of some later works, the numerous virtues ascribed to almost every plant mentioned give an idea of the almost incredible ignorance of medical matters in those days. As very few persons have a chance of seeing this literary curiosity, I will extract some of the passages relating to so familiar a plant as the Rosemary:—

"Rosmary is hote and drye, but the auctours tel not in what degre. It is a herbe that groweth in maner of a tree, and it is not properly called Rosmary, but ros marinus, as it were dewe of the see, for comynly it groweth in places by ye see syde. The floures and the leues be good in medycyne. And the floures ought to be dryed a lytell in the sonne whan they be gadred, and they may be kept a yere and leues lykewyse. The floure of Rosmary is called anthos, and of it an electuary of it is named dyanthos or dendrolibanas. . . . . Rosmary hath vertue to conforte by the good odoure, and to waste and clense humours and to put them out by subtyll vapour.

"For the herte.—Agaynst dysease of the herte and dysposycyon to fall in swoone, take the electuary dyanthos with wyne. Or elles sethe the floures of Rosmary wyne or rose-water, and give it to the pacyent.

"For weykenesse of ye brayne.—Agaynst weykenesse of the brayne and coldenesse thereof, sethe Rosmary in wyne and lete the pacyent receyve the smoke at his nose, and kepe his heed warme.

"For the throte.—The wyne that Rosmary is soden in dryeth the moystness of the throte yf gargarysme be made thereof.

"For the stomake.—Agaynste coldenesse of the stomake and to comforte dygestyon, take dyanthos or the wyne that Rosmary or mastyke is soden in."

Turner.

William Turner, who has been styled the Father of English Botany, was the author of the first original English work on plants,* of which Mr. Daydon Jackson edited a *fac-simile* reprint in 1877. This is little more than a catalogue of only about 170 species of plants, and the forerunner of his excellent *Herbal*, the foundation of English botanical literature. Turner had a garden at his deanery, and he also mentions his garden at Kew.

But I must not dwell on this, as it belongs to a period perhaps wholly antecedent to the practice of flower gardening for ornamental purposes in England. Be that as it may, before the end of the sixteenth century several notable gardens existed in the vicinity of London, the most celebrated being that of the oft-cited John Gerard at Holborn.

Gerard published a catalogue of the plants cultivated in his garden in 1596, and an amended and extended one in 1599.† It is hardly necessary to state that a great majority of the plants were cultivated for their real or imaginary medicinal properties. Still the catalogue contains a considerable number of plants that could only have been cultivated for ornamental purposes. Most of the extra-European plants enumerated are American, and the only possibly South African plant is the Senecio (Kleinia) Anteuphorbium, which I suspect is really a native of the Red Sea region; but for an analysis of the contents of Gerard's catalogue the reader is referred to the *Gardeners' Chronicle*, n.s., ix., p. 365, March 23, 1878.

Flower gardening, it should be explained, was practised in France, the Netherlands, Germany, and Italy, long before it was in England, and cultivated plants were gradually introduced into this country, partly by Englishmen who travelled on the Continent, and partly by refugees who fled from their own countries to escape persecution.

One of the great merits of Aiton's *Hortus Kewensis* is the immense amount of information of this kind it has handed down to us, much of which would otherwise have been lost. In very many instances, of course, no exact date can be given; all that is known is that such and such a plant was cultivated at a certain date, and sometimes the author does not cite the earliest date. Thus it is stated that the Damask Rose was cultivated in 1573, while in Johnson's *History of English Gardening* we are informed that Linacre, who died in 1524, introduced it from Italy. Again, it appears that the Auricula was cultivated in England as early as 1570,‡ having been brought over by artisans who were driven out of the Netherlands.

Didymus Mountaine.

Previous to the earliest of Gerard's publications appeared Didymus Mountaine's *Gardeners' Labyrinth*, the first part in 1571, and the second part, in which the author treats of "delectable floures," in 1577. There were several editions of this work, notably one by Dethycke in 1586. Among the "tender herbes and pleasant flowers" enumerated in this book are Marigold, Rose Campion, Flower Armoure, Columbines, Pinks, Heartsease, Pæony, Red Lily, Lavender, Bachelor's Button, Gilliflowers, and Carnations.

Tradescant.

John Tradescant, a Dutchman, who settled in this country, and was nominated gardener to Charles I. about the year 1629, having previously successively served in the same position under several noblemen and Queen Elizabeth, was famous for his natural, history museum and garden in Lambeth. An interesting account of the garden, by Sir William Watson, will be found in the forty-sixth volume of the *Philosophical Transactions* of the Royal Society, and the museum formed the nucleus of the Ashmolean Museum at Oxford. A son of the same name travelled in North America, and introduced a number of plants thence into English gardens, including the common Spiderwort (Tradescantia).

Tusser's *Five Hundred Pointes of Good Husbandry*, familiar to many from quotations, was preceded by *A Hundred Good Pointes of Husbandry*, which appeared in 1557. Besides a good assortment of fruits and vegetables, Tusser includes a considerable number of flowers, mostly such as are still common in country cottage gardens. *W. B. Hemsley.*

(To be continued.)

* *Libellus de Re Herbaria Novus*, 1538.

† Reprinted by Mr. Daydon Jackson in 1876.

‡ Shirley Hibberd, in the *Journal of the Royal Horticultural Society*, vii., p. 103.

Plants New or Noteworthy.

Thrixspermum Hartmanni, *Rchb. f.* (*Sarcochilus Hartmanni, F. v. Mueller*).

It is a great pleasure to me to see this lovely gem again, thanks to the inexhaustible kindness of Sir Trevor Lawrence. What great differences are to be seen in various individuals of the same species! A flower sent me in 1877 by Mr. Bull had only a few red spots on the apex of the ovary; those sent by Messrs. J. Veitch & Sons in 1879 had these spots scattered over the pedicelled ovary to the base; those now sent by Sir Trevor have the whole side of the labellum zebroid with numerous red bars and spots, which look delightful. It appears that Thrixspermum rubrocinctum (Sarcochilus rubrocinctus, Fitzg.) is best distinguished by the unequal apex of the leaves, as is so often seen in the distichous leaved Orchids, whereas all the leaves of T. Hartmanni I have seen are terminated by two sharp teeth (see the very fine representation in R. D. Fitzgerald's *Australian Orchids*, vol. ii., part 1). I hope Sir Trevor may be able to find the secret how to give a long life to these plants, which usually come to their end after from one to three years. Perhaps Baron von Mueller or Mr. Fitzgerald will enlighten European growers as to what periods of rest are required. *H. G. Rchb. f.*

Begonia egregia, *N. E. Br., n. sp.*

This is a very distinct plant, unlike any other in cultivation, and different from any species contained in the Kew Herbarium. It is a tall growing species, with a thick stem, peltate rough leaves, and terminal corymbs of white flowers, which, being produced in winter, make it a desirable addition to our stoves. It has been introduced by Mr. W. Bull, who states that it comes from Brazil.

Plant growing to 3 or 4 feet high. Stem woody below, 1 inch or more thick, with a smooth, pale greyish-brown bark; the young shoots light green, fleshy, covered with a pale brownish, thin, cobweb-like tomentum. Stipules deciduous, three-quarters of an inch long, lanceolate acute, complicate, pale green, erect, cobweb tomentose, like the stem, and ciliate at the edges. Petioles 2½—3 inches long, 2—2½ lines thick, subterete, pale green, sparsely cobweb tomentose at the base, but in the upper part the tomentum passes into short hairs. Blade of the leaf peltate, 8—11 inches long, 2½—4 inches broad, obliquely oblong, acuminate at the apex, obtusely rounded at the unequal base, cup-like at the insertion of the petiole, rather thin and soft in texture, margins closely dentate, upper surface bright green, rough with hair-bearing papillæ; under surface pale green, with prominent midrib and veins, and covered more densely with rather softer hairs than those on the upper surface. Peduncle 2½—3 inches long, very pale green sparsely pubescent, as are also the branches of the gracefully drooping corymbose cyme, which is 3—4 inches in diameter, and many-flowered. Male flowers half an inch across, white, petals two, obovate, obtuse, concave. Stamens about thirty, light yellow; filaments free; anthers linear-oblong, shortly apiculate. Female flowers I have not seen, there being no trace of them upon the two inflorescences which I examined, and Mr. Bull informs me that none have yet been produced at his nursery; possibly it may be a diœcious species; time only can prove this. In the process of drying the leaves have the curious property of drying unequally, and so crack in various places and break themselves in pieces in a very disagreeable manner. *N. E. Brown, Herbarium, Kew.*

FLORISTS' FLOWERS.

THE PHLOX.

This is one of the most lovely late summer flowering plants, easily propagated, and its cultural requirements are of the simplest kind. For this very reason the Phlox is generally badly grown. A plant that can be dug up periodically and propagated by simply quartering it with a spade and replanting is likely to become common, but no really well grown plants can be obtained by this method. This is the best time to propagate plants. Each one will throw up many shoots from the base. A two or three year old plant may produce a dozen or score; all these may be removed but about five, when they are two or three inches long, and in that state they make the best cuttings. In order to get them rooted quickly I put each cutting in a deep thumb-pot, and plunge the pots over a gentle hotbed. They produce roots very quickly, and soon make growth. When rooted each plant is potted into a 5-inch pot, and will produce a handsome spike in August, when they not only make a good show, but fill the atmosphere with a delicious perfume. These pot plants are planted out in beds or borders of rich deep soil. The best spikes imaginable may be produced from these the following season. The third year they will flower not so strong, and after that they ought to be destroyed. *J. Douglas.*

Primulas at Farnham Royal.

The capacity to produce the finest strains of Cinerarias and Calceolarias in the kingdom which has marked Mr. James' experience seems to have been equally valuable in securing for him some exceedingly fine strains of Chinese Primroses. Without doubt the houses at Farnham Royal in which the Primulas are grown are of the very best for the purpose which we have seen—light, airy, and dry, and have also the aid of some top-heat, which is of the greatest importance when fertilisation of the flowers is proceeding. Still strains stand for something, and these of their kinds cannot be excelled. The gem of the collection is found in about 150 plants of a grand ivory-white flowered, Fern-leaved kind, compact in habit, stems stout and erect, and carrying large trusses of wonderfully fine massive flowers. A purer white or in all respects finer white kind has never been seen, and it has consequently been secured by Messrs. Veitch & Sons. A second gem is found in an intense red, semi-double, of which there are about thirty plants only. This has unusually fine flowers, and the colour, when lit up by sunlight, glows like fire. The old market white is now so improved that many plants produce flowers 2¼ inches across, and even finer are the flowers found on the Lavender-hued Marguerite strain—a splendid selection. A very beautiful strain also has flowers of a rosy-cerise hue, very bright and effective, whilst a very delicate form has large bold flowers flushed with mauve. The blue kind, though blooming well, is not striking, like the others, the Chiswick Red selection especially being of the most intense red colour and bearing very fine flowers. *A. D.*

Winter-Flowering Carnations.

A supply of these sweetly scented flowers, varying in colour from pure white to brilliant red and rich crimson during the winter months, is now nearly indispensable in gardens. And it is advisable, therefore, for the cultivator to grow a goodly number of plants of the best varieties only, such as La Belle, white; Empress of Germany, white, slightly marked rose; Andalusia, primrose-yellow; Pride of Penshurst, yellow (this has no scent); Miss Jolliffe, pink; Vulcan, bright red; Worthington G. Smith, deep scarlet; Alegatière, red; Valencia, dark crimson; and Souvenir de la Malmaison, blush-white. These kinds will supply blooms during the months of March, April, May, and June.

No time should be lost in getting in cuttings of the above or other approved varieties. If sufficient slates are placed closely together on the front hot-water pipes to take the necessary number of hand-lights, and the slates covered with two inches deep of white sand, the desired complement of good healthy cuttings may be inserted therein at from one to two inches apart, watered through a fine rose, the top light put on, and the cuttings shaded from bright sunshine when the foliage of the Vines is not sufficient. They will soon root, and must then be potted off singly into thumb-pots, using fine sandy mould, put back in heat near to the glass, watered, and shaded for a few days until the roots have pushed into the soil; afterwards admit air freely during favourable weather to ensure sturdy growth. The plants should afterwards be shifted into larger pots as soon as they require it, using a compost consisting of three parts good loam (more or less rough), and one of sweet leaf-mould with a little coarse sand added, making this firm about the roots in potting. The pinching, sticking, and tying of the shoots should also be duly attended to. *H. W. W.*

AN ANT-CATCHING ORCHID—ERIA STRICTA.

Few people would be inclined to enumerate an Orchid in any list of insectivorous plants, yet the little plant which is the subject of this note is such a confirmed ant-catcher that the circumstance deserves to be recorded, though it would hardly be correct to describe the plant as insectivorous. Of dwarf and compact habit, it bears erect distichous spikes of numerous small white and very woolly flowers, the spikes much resembling those of our British Spiranthes autumnalis. The flowers measure nearly two lines long, the sepals and petals, which expand but very little, being about half this length. A plant in the Kew collection is now bearing several spikes of flowers, many of which appear black in the centre, and on closer examination this is seen to be due to the presence of a small black ant. The flowers secrete a drop of liquid at their base, which is perceptibly sweet when applied to the tongue. This serves as an attraction to the ants, but on crawling in to sip the nectar their front legs and antennæ become glued to the viscid stigma, and there they literally starve to death. So efficient is the trap, that on one small spike, with fifteen expanded flowers, no less than eight ants were captured. On examining the plant it was seen that several flowers had captured a couple of these unfortunate little creatures, and that in several instances they were alive, and making most strenuous efforts to escape, but all to no purpose. They come to suck the nectar secreted by the plant for the delectation of those insects (whatever they may be) which fertilise the flowers, but being themselves unfitted for this purpose, and not being strong enough to get away, they pay the penalty of meddling with things too high for them with their lives. Such is fate. *R. A. R.*

NURSERY NOTES.

PRIMULAS AT MAIDENHEAD.

Mr. R. Owen, of the Boyne Hill Nurseries, has for the last ten years been working up a strain of Primula sinensis, and has got one of the prettiest collections I have observed, most shades of colour found in Primulas being represented; amongst them a fine rose-magenta, a very distinct variety, with clear yellow angular eye. The flowers are of fine form and substance. Also specially noticeable were rose, rosy-purple, violet-purple, crimson, scarlet, lilac, blush, and white—all of the plain leaf class. The Fern-leaf varieties, the light and dark-leaved varieties are represented by first-class flowers of great substance, with small calyces, some very fine colours having been introduced into the flowers of the class—lilac, lilac-blue, rose, blush, and white. The lightly spotted varieties are invaluable for decorative purposes. They are a distinct type with medium-sized flowers. A rich crimson flower with white spots shading off to yellow in the centre, with broad yellow starred eye, was very distinct. Other colours of the same type were rose, crimson, lilac, purplish-lilac, all beautifully spotted and very pretty.

Another form of the spotted and striped class, being a great improvement on Cottage Maid, was white spotted and striped with crimson and rose. A new type of flower, edged like a Picotee, was very charming, and should be in every collection; the colours are rose, lilac, and crimson.

The blue Primula, so-called, was represented by a fine group, the plants having a very distinct habit and flowers of great substance, borne on long stout stems; the colour is light blue.

Mr. Owen has been successful in raising a few very pretty varieties from seed of the double Primulas which are decided acquisitions, and invaluable where cut flowers are in demand at this season of the year—one a clear white, of good form and substance and habit all that can be desired; it is one of the finest of the double white varieties. Another, white with primrose-yellow ground, is of great merit: and lastly, a scarlet-flowered kind, similar in habit and form to the first-mentioned. Other colours there are, also very pretty and useful, and as the blooms are borne on stout stems well elevated above the foliage, they are admirably adapted for cutting purposes. *Visitor.*

Orchids at Messrs. H. Low's, Clapton.

The visitor to this establishment is not taken aback, as at some other Orchid-growing establishments, by the fine aspect of flowering specimens of a large size, but rather with the immense numbers of the species and varietie brought together from their distant homes. The plants are congregated in huge groups, and are rarely any length of time established on blocks or in pots ere they pass into other hands. The newest importation observed was one of Cymbidium Lowianum, with which the side benches in a long span-house were strewn unpotted, but already showing the new breaks in all cases just starting. This fine Orchid was recently sent home from Upper Burmah by the travellers of the firm, who had been enabled to follow out their risky enterprise in the immediate rear of our advancing troops.

The Cypripedium-houses were full of the most healthy-looking plants. C. ciliolare, a small plant, was throwing up freely, although in some hands reputed shy; established plants of C. lævigatum were also showing bloom. Many of the flowering plants of this species consist of a heavy importation from Borneo. Large numbers of wonderfully healthy examples of C. Swanianum, C. villosum, C. Roezlii, C. Lowii, and C. Lawrenceanum were observed in the various houses.

The Phalænopsis-house was crowded with plants, mostly healthy, vigorous little things; but the flowering season had come to an end, and only a few of P. Stuarti, some of which had abnormally fine markings; P. Sanderiana, quite white, but not the true P. alba; P. amabilis, P. Schilleriana, and others, remained in bloom.

Of that specialty of the nursery, Dendrobiums, D. Wardianum was in thousands, many of the established and semi-established plants throwing up flower; some of these flowers were of a larger size than is usually seen after they have made growth in this country. A dark variety of D. Findlayanum was in bloom, and some few D. Pierardi; D. transparens and D. primulinum were about to open their blooms. The numerous plants of D. thyrsiflorum gave indications of abundant bloom later.

Of Angræcum sesquipedale there is now to be seen one of the finest importations that has ever arrived from its habitat, Madagascar. The rather shy and difficult A. citratum was observed in quantity, with one spike of unopened bloom on many of the quite small plants; A. Ellisii, a large flowered species, was producing flowers on equally diminutive examples. The true Lælia præstans, with the distinctive yellow stain in the throat, was going out of flower (a considerable number of this pretty Orchid exists here); L. Dayana was showing flower.

Of Cattleyas, a few of C. Eldorado cut of a very

large importation, not yet generally in flower, were exhibiting flowers darker than the type: an immense mass of plants of C. Mendelli showed a great array of sheaths coming up, and some of C. Mossiæ were carrying twenty and more sheaths each; C. Gaskelliana filled a large space, C. speciosissima, a reputed shy flowerer, was in good form.

A few Odontoglossums were showing blooms, but nothing calling for special mention, although an endless array of spikes point eloquently to the later harvest of bloom. Of pretty white flowers we must not omit to mention Odontoglossum pulchellum majus and Masdevallia tovarensis, numbers of which were showing flowers in abundance.

DIPLADENIAS.

There can be no question about the great beauty of these brilliant flowering stove twiners, which, for the decoration of our hothouses, are worthy of as much favour as is now given, in the outdoor garden and conservatory, to the Clematis family. There are at least a score of kinds, all of them more or less meritorious, which in time will be found in most gardens. Brearleyana, splendens, crassinoda, amœna hybrida, amabilis, and boliviensis are those that rank among the choicest varieties. The funnel-shaped flowers come in clusters, the predominating colours being rosy-pink and crimson of much brilliancy. Boliviensis, however, is very distinct, having white flowers with golden throats, and this species will thrive in a lower temperature than the others; but in spite of this it is well to remember that Dipladenias are essentially stove plants, and that they revel in a high temperature. Like the Stephanotis and Allamandas, these plants require a season of rest in winter, at which time they are very impatient of moisture, therefore they must then be kept warm and comparatively dry. During early spring moisture should be given by degrees when active growth will result, and with the returning summer copious waterings, syringings and spongings are necessary, which with smart heat will produce a humid atmosphere. Under such conditions they make most luxuriant shoots, which, if allowed to climb singly on strings fixed near the glass, will produce flowers in great profusion, and will continue to bloom for several months. A mixture of fibrous peat, rather lumpy, with plenty of silver-sand, suits them best, but some growers use charcoal and leaf-mould as well, and sometimes loam. With whatever mixture selected the great *desideratum* is efficient drainage, without which success is not attainable.

The illustration (fig. 71), from a photograph, represents a very finely grown specimen, grown by Mr. George Cole, once the leading plant grower at Messrs. Lucombe, Pince & Co.'s nursery at Exeter, where great attention is still devoted to the culture of these beautiful plants. We are indebted to Mr. W. Napper, of Alphington, for the illustration, and for the cultural details.

Fig. 71.—DIPLADENIA.

ROSES.

FORCING THE ROSE.

None of the flowers of spring are more beautiful than the Rose, and it is easy to have a succession of blooms in any gardens where Vines are forced early. The main details of the work are to prune the Rose trees in good time, and to do this when they are dry at the roots; when they are in a dry state the cut portions dry up and do not bleed. The roots of Rose trees are never inactive when the temperature ranges above the freezing point, and in consequence of this the buds are swelling even at mid-winter; but if the Roses are not pruned the buds at the extremities of the young wood swell, and those near the base remain dormant. Now for Roses that have to be forced into flower early this is a serious waste of vital force, for if they had been pruned only those buds at the base of the shoots would have remained, and the entire forces of the plants would have been concentrated in the production of growing flower-shoots. Next in importance is the manner in which they are forced. Place them as near as possible to the glass roof, where they may obtain all available light and air; give a fair supply of water to the roots, enough to saturate the entire mass of soil, but do not give any more until they really need it. It is also desirable not to push them on too rapidly at first. We have grown them remarkably well by placing a row of them on a stage over the front pipes in an early vinery, the pots raised a few inches above the pipes to prevent any injury to the rootlets by overheating. They will do even better if plunged over a bed of leaves and manure, which causes a more rapid and healthy development of the roots.

When the conditions are as described above the plants keep in good health, and produce leaves and flowers of good texture. They are liable, especially in close dull weather, to mildew, which must be destroyed at once by dusting with flowers of sulphur, or, what answers as well, the pipes when heated may be painted with it. This destroys every particle of mildew that may be in the house. Greenfly is destroyed by fumigating, and this pest is easily kept from them if it is attended to on its first appearance. The Tea and hybrid perpetual Roses are the best sections to grow for forcing, and some varieties are much better adapted to it than others. As a rule, the free-growing varieties with dwarf branching habit make the best pot Roses. It is better not to grow too many varieties. Of hybrid perpetuals the following are the best:—Abel Carrière, Alfred Colomb, Annie Laxton, Captain Christy, Dr. Andry, Duke of Edinburgh, John Hopper, Jules Margottin, La France, La Rosière, Marquis de Castellane, Queen of Queens, Prince Camille de Rohan, Senateur Vaisse, Victor Verdier, and White Baroness. Tea-scented:—Alba rosea, Belle Lyonaise, Catherine Mermet, Devoniensis, Duchess of Edinburgh, Hon. Edith Gifford, Jean Ducher, Madame Falcot, Madame Lambard, Niphetos, President, Rubens, Safrano, Souvenir d'Elise Vardon, Sunset, The Bride, and Perle des Jardins. *J. Douglas.*

ENGLISH FRUIT, AND THE AUXILIARY USES OF SUGAR.

In considering the outlets for the use of sugar afforded by the jam-making, confectionery, chocolate, biscuit-making, aërated water, and other trades, it appears probable that these openings for its use are even yet imperfectly developed. In treating fruits in various ways there is plenty of scope for invention, and the use of sugar. No doubt for such purposes the exact description of fruit must be grown, and to secure this result the farmers require either to own the land they till, or to have the law so changed that they may get full security for their improvements, and compensation on the expiry of their lease; otherwise they are not likely to plant improved varieties of fruit trees for their landlords. To properly develope fruit-preserving in our country a change in our land laws is thus necessary, the more so as such pursuits, when coupled, as they may well be, with market gardening, and flower, poultry, and bee-raising, are more of the nature of family or home industries, and require a considerable population in the immediate neighbourhood. The tendency of our present land system is to increase population in towns, and to decrease its density in the country.

One recent development is worth notice, and that is the erection of jam factories among the fruit fields. Several have been set up in Kent, and more are reported to be in course of erection, while Lord Sudeley, who has put a large quantity of his land in another county under fruit, has also a factory on the estate, where fine jam is made. It is perhaps possible to have comparatively rough works on large farms, or between several of them, where fruit could be boiled in times of glut, and turned into jam, either at the time or afterwards. The preparation of bottled fruits without sugar is also not by any means a difficult operation. The Flemish peasants boil down fruit in bulk without sugar, and

it keeps well, and the wholesale manufacturers of this country in many cases do not complete their jam, for months after it is first boiled. However, preserved fruit not eaten fresh ultimately requires sugar, and is thus connected with our subject.

Our jam, though now chiefly made, not at home, as was formerly the case, but by wholesale makers, is still boiled, more or less, in the old domestic or housewife's way, and is at the best a cloying condiment. Sweetness, and the preservation of the whole fruit as furnished by Nature, appears to be what is sought. Yet in commodities, such as Dundee marmalade, which appeal to the widest circle, it is piquancy of flavour that is most prominent, and it is not considered necessary to put in the pips and pith of the Orange. Similarly the skin and stones of such fruits as Plums, Damsons, and the like, do not add to the attractions of the jams made from them. There are possibly many ways to be found by which variations can be made on the old traditional system of boiling fruit, so that the taste of grown-up people may be more appealed to than is now the case. Jam, which has been sold by retail this year for as little as 3½*d.* for the 2 lb. jar, may appear cheap, but it is a question whether the trade is not susceptible of great alteration and growth at home, and it is certainly so abroad, for, with duty-free sugar, we should be in a position to supply the world, especially with preparations from Gooseberries and Currants, fruits which chiefly come to perfection only in Great Britain, and possibly in a few of the northern parts of the Continent of Europe. Currants and Gooseberries could no doubt, be canned for export, like American fruit, as well as preserved in the more costly bottles. Currant liquor, shrub, syrup, and wine, are all named in the cookery books, as well as Currant jam, jelly, and paste, and black Currant lozenges are of course, common. Gooseberries can be dried for dessert, they can be candied green, made into paste and cheese for dry sweets, into wine—and especially into the Gooseberry champagne so often jocularly alluded to—they can be turned into vinegar, and into Gooseberry-water, as well as to the familiar jams and jellies.

Within a few miles of London, in one of the best fruit soils, tons of Plums were allowed last autumn to rot upon the ground, or given to the pigs, at a moment, too, when labourers in the adjacent Kentish villages, who might have been employed in preserving the fruit, had the appliances been at hand, were in some cases almost starving. Some of the farmers are actually said to be grubbing up their Plum trees because of the unsatisfactory result of last season. Yet we import, preserved in sugar, no better Plums than can be grown in Kent, from Portugal (Elvas), and from Carlsbad, in Bohemia. Plums can be preserved dry in various ways with sugar for dessert, they can be made into paste for sweetmeats or lozenges, or into the so-called fruit cheese, or they can be pickled like Olives, or in vinegar. Our native Damson makes an excellent "cheese," which would command an export trade, and this fruit can also be preserved in a number of ways. The French farmer, not having cheap sugar, converts his Plums, if they are superabundant, into Prunes by baking, and this can be done, it is said, in the South of England by a slight modification of the oast-houses, or kilns, in which Hops and malt are treated. At any rate, some experiments in making Prunes appear to have been fairly successful in Kent last year. When afterwards boiled, Prunes are sweetened with a syrup that requires a good deal of sugar.

Within 20 miles of London the country-side may be seen covered with Cherries, that yield some of the best fruit that can be grown. Yet in a good season there is a positive glut of them, while we are importing crystallised and *glacé* Cherries from the South of France, which could be better preserved here, as our sugar costs half what it does in France. Cherries can also be turned into paste or cheese for sweets, &c. They can be frosted, candied, bottled, pickled, or made into the excellent Cherry brandy so often prepared in English households. The German or Swiss liqueur, Kirschwasser, could, no doubt, be easily made here.

Apart from use with sugar an extensive fruit industry is quite possible in this country in slicing and drying Apples, as is done in America; and if "Biffins" can be produced in Norfolk, Pippins like those baked in Normandy can be prepared in other parts of England. Apples and Pears are, of course, largely used for cider and perry in this country, but the methods of manufacture are rough and unscientific. The use of sugar with the must of Apples or Pears, as in France, would undoubtedly be advantageous. Though Apples are not generally used for jam, the jelly made from them is excellent, and the cookery books discourse of Apple butter, ginger, marmalade, sugar-water, and frosted Apples. The preservation of Apples in any shape ultimately leads to the use of sugar, however they may be dried; and our native sorts, such as the Blenheim Orange, are undoubtedly far superior to the American varieties so largely imported. Pears can also be frosted, iced, and otherwise preserved in sugar in a variety of ways. Both with Apples and winter Pears the farmers require security of tenure to enable them to put up houses where the slow ripening can be seen to, and accelerated or retarded by heat or cold, according to the market and the demand. In a private garden, with proper fruit-houses, Apples and Pears are to be had from July in one year to April, May, and even June in the next, and there is no reason, except want of security of tenure, why our own farmers should not supply fruit, like the foreign Apples and Pears sold by the greengrocers in the winter at 3*d.*, 4*d.*, and 6*d.* a-piece. Returning more directly to the possible extension in the uses of sugar in fruit preservation, there is a great want of variety in the way in which our standard preserving fruits—Raspberries and Strawberries—are dealt with. We are even too familiar with them in the shape of jam, but there are endless forms in which these fruits can be preserved, which are rarely heard of out of the pages of the cookery books. *The Produce Markets' Review.*

Fig. 72.—Lælia anceps var. williamsi: flowers white.

LÆLIA ANCEPS WILLIAMSI.

Through the courtesy of Baron Schroder we are enabled to present our readers with an illustration of one of the beautiful varieties of Lælia anceps which his gardener, Mr. Ballantine, exhibited, together with several other varieties, at the meeting of the Royal Horticultural Society, on January 11 last (fig. 72). The sepals and petals are pure white, of good form, but narrower than those of L. a. Stella, figured in our last number; and the lip is also white, having a yellow disc and throat, the latter marked with crimson-purple.

DATURAS.

Dwarf Free-Flowering Varieties.—At this date, and when subtropical foliage plants are so popular, it is difficult to understand why the dwarfer forms of the large trumpet-flowered Daturas are not more employed. Even the tree-like Datura arborea (sanguinea), which attains to such noble proportions in greenhouses when room is given it to grow freely, is so readily propagated and easily wintered, it is a pity it is not more commonly employed out-of-doors in the summer months. I wish to direct attention at this time, however, to half-hardy annual species and varieties which are capable of being grown to

afford a display of flower during the summer and early autumn months, the large showy single and double flowers of which show off so well in company with Wigandias, Solanums, Cannas, Ricinus, and other fine-leaved plants. Cultivators of the latter know well that no little difficulty is found in obtaining fine specimens annually from seeds, and I do not hesitate to say that annual Daturas can be grown into effective plants with no more attention, the treatment required being the same in the matter of sowing seeds, potting, growing, hardening off, and finally transplanting into rich soil in sheltered warm situations.

Apart from their blooms, Daturas, robustly grown, have a special freshness of appearance as regards their foliage. The annual species generally average about 3 feet in height, but if permitted to become somewhat drawn in the early stages will readily attain a foot more in height. The following are all well adapted for planting out, and the double-flowered forms make handsome plants for conservatory decoration at a season when flowering plants are not too abundant:—Datura atroviolacea plenissima: flowers dark violet coloured, moderate sized and free, with foliage. D. chlorantha flore-pleno: flowers double, yellow coloured. D. fastuosa, both single and double varieties: colour shaded white and lilac. D. Wrightii: white, large flowered, dwarf-habited, and a popular variety. *William Earley.*

PLANT IMPROVEMENT.

Among the plant-improvers whose doings and whose establishments we have alluded to from time to time Messrs. Harrison & Sons, of Leicester, hold a high place.

Messrs. Harrison & Sons are the representatives of a very old firm, dating back to the great-great-grandfather of the two brothers who own and direct the present business.

The population of the town has increased in the last thirty years from 60,000 to 120,000, and the gardens have increased. Eighty acres of ground belonging to the Corporation are let to the "freemen" of the town as their right and privilege; and as the rents of these small plots are at the rate of £14 per acre, they must obviously be sown with vegetables, salads, and flowers for sale. And besides these numerous customers of the big shop in the square a large additional number hold other allotments on land belonging to private owners, which is in great demand, even at a considerable distance from the town. It is said that the number of village carriers who come into Leicester daily is greater than in any other town in the country. They bring passengers and produce from a distance of twenty miles, and loading back with all kinds of necessaries. Besides the market gardeners who swell the large business of this firm, they supply market farmers—that is, farmers who do a little market gardening—and speak of them as a class which has increased in number.

The extent of land held in hand in connection with the business consists of a farm of 60 acres, used mainly as a trial-ground, and for the raising of "stock" seeds, and a nursery of 30 acres close to the town for fruit trees and nursery stock of all kinds grown in the open or under glass. The soil is light and good, and well suited for its purpose, and the management is as good as the land. The approved sorts of every kind of fruit tree, large or dwarf, the most popular Roses, a good stock of ornamental trees, and a capital assortment of varied shrubs, affording proof of a well organised nursery business under energetic management.

In connection with the seed business several vegetables deserve to be named, and we ought, perhaps, to head the list with the Leicestershire Red Celery, which Messrs. Harrison introduced — an achievement which alone would have placed them among plant improvers. In the case of important vegetables the names of varieties possess a special interest, and therefore we may state that of Potato sets sold by this house the favourites are:—Imperator, a large and productive variety; Osborn's Pride, Vicar of Laleham, and White Beauty of Hebron. A number of women were busy picking Peas on the day of our visit, and forty pickers were doing the work which occupied sixty last year. The earliest known Pea here is Early Eclipse, 4000 bushels of which had been already hand-picked in readiness for market. This is an introduction by Messrs. Harrison, having been selected by them from Mr. Laxton's Harbinger. Its haulm is light in colour, and 2 feet high, and the pods are of a lively green, well filled with seeds similar to those of the Kentish Invicta; but it is hardier than that excellent variety, and earlier. Defiance is recommended as the earliest green Marrow Pea, and this is another sort improved at home. It is hardy, may be sown in autumn, and the pod being of firm texture it "carried well" to market—that is, does not easily get crushed and bruised; and that is a point of great consequence to those who grow Peas for picking green for market. The Peas are all grown under the personal supervision of the firm by careful persons, who receive stock seed from the stores here.

Ten tons of Onion seed are sold yearly, one half of which is the White Lisbon, for pulling green as salad. Among all the sorts in the catalogue the Bedfordshire Champion may be named as the most useful variety for market growers and general use. Of Radish seed Messrs. Harrison have 30 acres in stock, all grown in suitable districts from stock seed, which has, like all the specialties of seedsmen, a history attached to it, which, if we had space, would reveal the pains and patience which have been expended in improvements. We must still give a few more quantities. "If it be love, indeed," said Cleopatra to the most besotted of her Roman lovers, "tell me how much." It is always satisfactory to be able to state quantities. Antony replied, "There's beggary in the love that can be measured," but in regard to kidney Beans the yearly sales here may be stated pretty accurately as 500 bushels, ditto Brassicas, including Savoys, Cabbages, and Brussels Sprouts, several tons; Champion Cattle Cabbage, 1½ ton; other Cattle Cabbage, half a ton; Veitch's Autumn Giant Cauliflower, 11 cwt.; and one customer has taken enough to plant 150 acres of this Cauliflower for pickling. Having gradually improved during many years it now ranks among the four or five first-class stands at the Smithfield Club.

FRUITS UNDER GLASS.

VINES: EARLY HOUSES.

Where the early supply of Grapes is obtained from pot Vines that were started in November and properly attended to since, the berries will be in their second swelling by this time; therefore, a higher temperature, with abundant supplies of tepid liquid manure should be given at the roots, and the atmospheric moisture maintained in the house until the berries begin to colour. This high-pressure system of forcing would not be prudent to apply to permanent Vines, and is given to these because they are of no further use after having fruited. Keep a night temperature of 70°; day, with fire-heat, 75°; and 10° higher by sun-heat, running the heat up to 90° or 95° at closing time on bright sunny days, with the house well charged with moisture at the time. Permanent Vines in a similar stage of growth, if suspected of being not sufficiently moist at the roots, should have a thorough soaking of warm liquid manure. Give them a night temperature of from 60° to 65°, 70° to 75° by day with fire-heat, running it up to 85° or 90° with sun-heat at closing time, when the surface of the border, paths, and walls should be damped over with tepid water to promote a genial atmosphere in the house. Keep the evaporating troughs of the hot-water pipes filled with liquid manure to ward off attacks of red-spider and to afford ammonia to the inspiring organs of the leaves, and create humidity. Air should be admitted when the temperature inside reaches 75° on bright sunshiny mornings, afterwards increasing the amount given until the temperature reaches 85°, at which point it should be maintained with sunshine until closing time—about half-past 2 o'clock in the afternoon.

Succession-houses.

Attend to the disbudding (see p. 212 current volume), stopping, and tying down of the shoots to the trellis, and the removal of all the bunches as soon as they appear, leaving only one on each shoot, and, after those that are left have set their berries, the number should be reduced to eight or nine of the best formed bunches on each rod, more or less, according to the strength of the Vine. The tying of the laterals in a horizontal position must be brought about by degrees, great care being required until the shoots acquire firmness, when they will be less liable to snap. Stop the shoots at two joints beyond the bunches, and remove all minor lateral shoots at the first joint. Those which may afterwards be produced should be pinched hard back; the shoots showing on the main stem between the ground and the trellis should be reduced to five or six, and be stopped at the second joint, as should also any others that may spring from these. These directions hold good for all Vines, and should be observed from the time the canes are planted, so as to insure that part of the stem below the trellis being as thick as that furnished with shoots above, which, when otherwise treated, would not be the case. The temperatures at this stage, and until the bunches come into flower, should be kept at 60° at night, 65°—70° by day with fire-heat, and 10° higher with sun-heat, giving a little air when the thermometer indicated a temperature of 75°. The same rules as regards damping paths, walls, &c., must be observed as in the early houses. When the bunches are in flower the temperatures should be raised 5° all round, and a drier, airier atmosphere be maintained in the house until the berries are set, when a return to the former conditions may be indulged in; and in order to secure a good set the rods should be tapped a few times a day when the bunches are in flower, to distribute the pollen, or else have some light, soft substance passed over them about mid-day with that object in view.

Grape-room.

Look over the bunches of Grapes daily, and remove forthwith any bad berries that may be on them, otherwise the number of decayed berries will in a very short time outnumber the sound ones. *H. W. Ward, Longford Castle.*

PLANTS AND THEIR CULTURE.

DECORATIVE STOVE PLANTS.

Plants of Euphorbia jacquiniæflora that were shortened back after flowering should now be well furnished with cuttings, and there should be no delay in taking them off with a heel when they are about 4 inches in length. The pots for their reception should be well drained and filled with light fine sandy soil, in which the cuttings should be firmly inserted, and be placed in a propagating frame or under a bell-glass, in a brisk stove temperature. Young growths of the following flowering plants should likewise be propagated as they can be obtained:—Pentas carnea, Scutellaria Mocciniana, Justicia carnea, Sericographis Ghiesbreghtiana, Eranthemum Andersoni, Plumbago coccinea superba, and P. rosea. The above species should be grown in numbers where decorative plants are much in request; they are fast growers, and must not be allowed to become pot-bound when in a young state, as they then never afterwards make up for the check inflicted. Rich loam, lightened with leaf-soil and sand, suits them to grow in, but to which, for their final shift, some decomposed manure may be added.

Tuberoses and Gladiolus.

Tuberoses for summer flowering may be potted now, single bulbs in 5-inch or 6-inch pots, or three in 7-inch or 8-inch pots; a good portion of each bulb should be left out of the compost (similar to the way

in which Hyacinths are potted), which should be firmly pressed together, and should consist of fibry loam mixed with a fair quantity of leaf-soil and sand. A warm pit, where the pots can be plunged in a bed of warm leaves, is a good place in which to start the bulbs, and the soil must be unwatered until free root-action takes place. Gladiolus The Bride and Rose Gem deserve to be extensively grown for cutting purposes; we find them very serviceable for sending to London during the season. To keep up a succession of their flower-spikes, they should be brought on in quantities according to demand in a moderately warm structure; a high temperature causes the spikes to become weak, and bear short-lived flimsy blossoms.

Temperatures and Shading.

With an increase in the length of days, the temperatures of stoves should be gradually raised to promote active growth, that for the night may now range from 65° to 68°, or a little less in cold weather, and during sunny days 15° or 20° higher, and must be cautiously admitted, so that as little atmospheric moisture as possible escapes, and the ventilators closed early to entrap the sun's warmth, when the necessary damping must be attended to, and the plants that need it be gently syringed over with tepid rain-water. If not already done, the shading blinds should be fixed to be used with discretion on bright days. Rather than have to ventilate freely when cold winds prevail, it is advisable to prevent its necessity by running down the blinds. *Thomas Coomber, Hendre Gardens, Monmouth.*

NEW EXHIBITS IN THE KEW MUSEUMS.

We learn from Mr. Jackson, Curator of the Museums, Kew, that the timber museum at Kew, or Museum No. 3 as it is perhaps more generally known, has just been re-opened after a short but necessary period of closing to allow of the introduction and arrangement of the new specimens of Colonial and Indian timbers obtained from the late Exhibition at South Kensington. A very large number of new specimens has been added to the important collection previously arranged in the Museum, and many of the fresh samples are of especial interest either for their beauty or remarkable size. Amongst the countries from which new specimens have been obtained may be mentioned India, Burma, British North Borneo, Cape of Good Hope, British Guiana, British Honduras, Trinidad, Dominica, Fiji Islands, and Western Australia.

The most striking specimens from India are a fine slab of Padouk or Andaman Red-wood (Pterocarpus indicus), and one of Andaman Marble-wood (Diospyros Kurzii). The wood of the first is close-grained and hard, and of a beautiful dark red colour; when polished it has a very fine effect, and is very suitable for furniture and carriage building. It grows to a very large size, and is considered one of the most useful woods in the Andamans. The Marble-wood is the produce of an evergreen tree of the Andaman Islands, as its common name indicates, where it is said to be used for cabinet work, walking-sticks, the handles and sheaths of knives, &c. The handsome wood, with its greyish ground and bold black streaks, though coming near the Calamander in general appearance, is nevertheless unique, and deserves to be known amongst cabinet woods in this country.

From Burma is shown a fine trunk of Catechu or Cutch (Acacia catechu), a tree common in India and Burma, the wood of which is of a yellowish-brown colour, extremely hard, and very close grained. The tree is valued more perhaps for the extract it yields, known as cutch or catechu, than for the timber as such. To obtain the extract the wood is cut up into chips and boiled, and the fluid evaporated to dryness. This substance is sent into this country and to America in very large quantities, chiefly for dyeing and tanning, but sometimes as an astringent in medicine. It is stated in the Indian Catalogue of the late Colonial Exhibition that the value of the catechu exported from India during 1884-85 amounted to 28,20,785 rupees. The bulk of these exports consisted in Burma or Pegu cutch, but Bombay and the North-West Provinces also export a considerable amount, the cutch or káth of the latter being more particularly interesting, since it is of a different nature. It is paler coloured than Burma Cutch, and is baked into large cubes somewhat resembling gambier. Instead of being boiled down to a thick extract and then cast into large masses, twigs are placed in the concentrated decoction and the káth allowed to crystallise. The substance thus obtained is afterwards thrown into cubes about 1½ inch in size. The result of this treatment is the production of a much finer article, and this or gambier is the form of catechuic acid eaten in páu by the natives of India.

From British North Borneo an interesting collection of timbers have been received, the most interesting of which is perhaps the Borneo or Sumatra Camphor (Dryobalanops aromatica, Gaert.), the slab measuring some 12 feet high by 2 feet wide; it is sound throughout, and shows a close-grained and apparently hard wood, of a reddish-brown colour. The camphor is found in cracks and fissures in the trunks, occurring sometimes in lumps several pounds in weight. This camphor is known in Europe only as a curiority, not being an article of commerce with us; quantities, however, are sent to China, as the Chinese prefer it to the ordinary camphor of commerce, which is a product of their own country.

Another interesting Bornean wood is known as Mirabon; it is a strong and durable wood, of a lightish brown colour, well adapted for cabinet-work. Of this wood Mr. Ransome, who recently read a paper at the Society of Arts on the colonial woods, says;—"In grain it somewhat resembles Teak, and as it is easily worked, and can be sold in this country with a good profit for 2*s.* 9*d.* per cubic foot, it is likely to become largely used as a substitute for that highly prized wood for railway-carriage work, while it could be advantageously employed instead of Mahogany for superior descriptions of joiners' work." During the process of morticing this wood by Messrs. Ransome's machinery a quantity of a blood-red fluid flowed through the pores from the pressure of the chisel. Upon tasting this I found it to be astringent, and it soon hardened in kino-like masses on the surface; this indicated that the wood might possibly belong to a leguminous tree allied to Pterocarpus, from which true kino is obtained, and upon looking further into this matter I found that Mirabon had been described as Afzelia palembanica, which was reported upon by Griffith as "the best Malacca timber tree." Other interesting and valuable timbers are shown, which it is expected will ere long become of commercial value in this country.

From British Honduras a fine buttressed trunk of a Mahogany tree is shown, while from British Guiana the two large squared trunks of Mora (Dimorphandra Mora [Mora excelsa]) and Greenheart (Nectandra Rodiæi), which flanked the entrance to the British Guiana Court of the Colonial Exhibition, are exhibited. Both of these are durable and well-known woods, and the specimens, though not remarkable for girth, are good sound pieces of timber.

A fine set of valuable, well-selected, and well-seasoned woods has been obtained from the Cape Commission. These comprise many interesting woods, such as the fine plank of the Outenique Yellow-wood (Podocarpus elongatus), a tree averaging 75 feet high, plentiful in the forests of George, Krupna, and Amatola. The wood is of a very close even grain, and works well. This plank has been referred to before in the *Gardeners' Chronicle* for December 4 and 11, 1886, pp. 716 and 756 respectively. Amongst other useful woods shown are Black Iron-wood (Olea laurifolia), Assegai-wood (Curtisia faginea), Kamassi (Gonioma Kamassi), Cape Ash (Ekebergia capensis), Saffron-wood (Elæodendron croceum), &c. From Fiji an entirely new and interesting collection of woods is shown.

Of all the individual specimens, however, the fine Jarrah log, which attracted so much attention in the Western Australian Court during the Exhibition, is certainly the most striking, on account of its large size, measuring 10 feet long and 4 feet 6 inches in diameter, containing 116 cubic feet, and weighing nearly 5 tons; and important on account of the beauty of the wood when polished, its great strength and durability, being proof against teredo and white ant. In some notes on the "Timber Resources of Western Australia" it is stated that although this timber is scarcely known in the English and European markets it has been in use for upwards of fifty years in the colonies for a variety of purposes. Vessels which have been constructed solely of Jarrah have, after twenty-five years' constant service, remained perfectly sound, although not coppered. It has been tried at three places in the Suez Canal—viz., at Suez, Port Said, and Ismailia, and after having been down seven years the trial samples were taken up, in order that a report on their condition might be forwarded to Paris, and the certificate of the resident engineer pronounces the timber to be practically indestructible.

Besides the interesting additions to the wood collection here enumerated may be mentioned the very instructive model of an Indian indigo factory, which shows the manufacture of indigo through all its details, from the bringing in of the plants to the final packing of the dried indigo cakes. This model formed one of the centres of attraction in the Indian Economic Court of the late Exhibition.

A group of plants from Beaufort West in the Karroo region, South Africa, is another interesting addition. The plants here grouped together are stunted and bushy, and their general appearance would seem to indicate a close botanical relationship between them, the fact being that several widely distinct natural orders are represented, such, for instance, as Hermannia desertorum, Eckl. and Zey. (Sterculiaceæ); Mesembryanthemum spinosum, L. (Ficoideæ); a species of Selago (Umbelliferæ), Eriocephalus spinescens, Helichrysum Zeyheri, a species of Nestlera, and Pentzia virgata, all belonging to Compositæ; Hæmax Massoni, E. M. (Asclepiadeæ); Lyperia crocea, Eckl. (Scrophularineæ), Salsola tuberculata, Fenzl; and other species (Polygoneæ). Many of these are described in Mr. Harry Bohn's excellent *Sketch of the Flora of South Africa*, published in the official handbook of the Cape, and before referred to in the *Gardeners' Chronicle* for July 17, 1886, p. 73.

THE HARDY FRUIT GARDEN.

FRUIT TREE BORDERS.

The mulching of these should be taken in hand as soon as the training of the trees is completed, the soil under the wall having become hard from constant treading, while the work was being carried out. If left undisturbed the hard soil would allow the rains to run off instead of benefiting the roots and lead to cracking of the soil during the heats of summer. No fruit tree borders should be cropped with vegetables, they should not be cropped anything nearer than 3 feet from the wall; this space will form the alley, which should now be turned over in a very shallow manner with a digging fork, at the same time carefully eradicating the suckers that spring from the roots of the wildling that forms the stock. This is best done with a knife. Afterwards give a heavy mulching of well rotted manure; but if this cannot be spared, long stable litter will answer the purpose.

Fruit tree borders round the vegetable quarters have generally to carry light crops at the margins, which ought therefore to be dug a little deeper for this purpose than the rest of the soil of the border. The border should also receive a similar mulch. Trees that were root-pruned during the early winter should be liberally mulched, to prevent the soil over the roots from becoming dry, and by so doing needless watering of the trees at a later period may be avoided on all but light soils. *Edward Ward, Hewell Gardens, Bromsgrove.*

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No. 42, DRURY LANE.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

THURSDAY, Mar. 17—Linnean Society, at 8 P.M.

FRIDAY, Mar. 18 { North of Scotland Horticultural Association

SHOWS.

TUESDAY, Mar. 15 { Royal Botanic and Horticultural Society of Manchester (two days).

WEDNESDAY, Mar. 16—Liverpool Horticultural Association.

THURSDAY, Mar. 17—Preston and Fullwood (two days).

SALES.

MONDAY, Mar. 14 { Freehold Nursery, Plants, &c., at Woodford, by Protheroe & Morris.

TUESDAY, Mar. 15 { Carnations, Roses, &c., at the City Auction Rooms, by Protheroe & Morris.

WEDNESDAY, Mar. 16 { Collection of Orchids in Flower, and 7500 Lilium auratum from Japan, Stove and Greenhouse Plants, Roses, Fruit Trees, Border Plants, &c., at Stevens' Rooms. Lilies, Roses, &c., at Protheroe & Morris' Rooms.

THURSDAY, Mar. 17 { Importations of Orchids from Mr. F. Sander, 7500 Lilium auratum from Japan, at Stevens' Rooms. Clearance of Nursery Stock, &c., at the Bell Lane Nursery, Hendon, by Protheroe & Morris (two days).

FRIDAY, Mar. 18 { Imported Orchids, at Protheroe & Morris' Rooms.

SATURDAY, Mar. 19 { Stove and Greenhouse Plants, Roses, Shrubs, Fruit Trees, Border Plants, &c., at Stevens' Rooms. Roses and other Plants, at Protheroe & Morris' Rooms.

The Royal Horticultural Society. In the midst of confusion comparable only to the effects of a Riviera earthquake on a large scale, the conservatory of the Royal Horticultural Society formed a delightful oasis on Tuesday last. The weather was dull, the surroundings depressing, but in spite of all that a pretty little show was got together, and it was attended by a larger number of Fellows and outsiders than could have been anticipated, and, better still, several new Fellows were elected. As the details of the show are reported in another column, here we need only indicate a few of the leading features, such as the excellent group of Camellias shown by Messrs. William Paul & Son the fine collection of Lycastes sent by Mr. Little, Twickenham, the interesting assortment shown by Messrs. Paul & Son, of Cheshunt, comprising the comparatively new Prunus Pissardi, generally grown for its brilliantly coloured purple foliage, but which, as was evident, may rank as a plant suitable for forcing, so pretty are its Cherry-like blossoms. As the fruits of this plant are not despicable this Plum deserves the encomium expressed in the Latin adage, "*Omne tulit punctum qui miscuit utile dulci.*"

Another interesting exhibit of Messrs. Paul was a specimen of the parent of existing Tea Roses, recognised as such by such veterans as Col. Clarke. From Sir George Macleay's garden came cut flowers of the rarely seen Thunbergia Harrisi, and some very elegant drooping sprays of Acacia verticillata.

Glasnevin furnished a small but interesting exhibit in the shape of six or seven different kinds of Lachenalia, and a spike of Catasetum discolor. It is very satisfactory to find the botanic gardens contributing of their stores to these exhibitions, as they have the opportunity of showing to gardeners some of the wealth of subjects at their disposal, but which otherwise would be seen only by those who have the opportunity of visiting these establishments Daffodils and spring flowers generally were shown by Messrs. Ware and Barr, and Messrs. Collins Brothers & Gabriel deserve a special commendation for the elegance with which their collection was arranged.

Little progress appears to have been made as yet towards the solution of the Society's difficulties. The committee appointed to consult with the Council have met and consulted, but without much practical result so far as we can learn. In the meantime, carrying out the Queen's wishes expressed many years ago, the Council have addressed to Her Majesty, as Patron, a letter detailing the circumstances of the Society and the causes which have led up to them, and praying Her Majesty's influence and aid.

What result this application may have it is impossible to say, but certain it is that, independently of a moral claim upon the Commissioners of 1851, as an institution of public utility, the Society has a decided claim to a site and appropriate buildings like any other scientific society. People are apt to consider the Horticultural Society as a mere place of amusement for pleasure-seekers, and to overlook the fact, that throughout the most depressed stages of its career it has accomplished and is accomplishing great public benefits in the promotion of horticultural science and industry. Indeed, in spite of shortcomings it has been far more successful in this direction than it has ever been when catering to the temporary caprices of fashionable pleasure-seekers.

The Royal Gardens, Kew. Go when one may one is sure to find much of interest in this noble establishment. The Orchid collection has greatly improved of late, and there is now a larger and more varied amount of blooms than we ever remember to have seen at the like season before. In the Victoria tank an attempt is being made to grow some of the tropical Utricularias in the little pools of water which accumulate at the base of the great leaves of the Vriesias, and thus to reproduce the state of affairs which occurs in Guiana. In the Palm stove some noble Browneas are flowering, as also Jonesia asoca; while the foliage of the gigantic Palms, Dracænas, Musas, Cycads, &c., is so magnificent as to stir the interest of the most apathetic. In the Temperate-house much necessary thinning has been accomplished, the benefit of which will be apparent later on, the object now sought being to grow well cultivated specimens of characteristic plants rather than a crowd of ill-developed plants of relatively minor interest. The Acacias, Camellias, and Sikkim Rhododendrons are coming into full bloom, and the Tree Ferns rear their sumptuous fronds as grandly as ever. In one of the octagons is a collection of Proteads and New Holland plants, sufficient to show that, in one establishment at least, these grand plants are not neglected. The show-house is, as it would naturally be at this season, very gay. The Camellias are in excellent order, and on the side stages are massed groups of various plants carefully assorted with regard to contrast and harmony of colour, and thus furnishing valuable lessons to gardeners who have to occupy themselves with the decoration of apartments or conservatories. This grouping in rectangular masses, if somewhat formal, presents a great improvement on the higgledy-piggledy arrangement sometimes seen, and it affords a better opportunity for judging of the capabilities of individual plants for decorative purposes than the mixed system. With such copious material Kew can furnish illustrations and combinations such as are beyond the reach of ordinary gardeners, and may effect much good by demonstrating to the gardener the variety of materials which would be available if grown in sufficient quantities. Now-a-days, owing to the enormous development of "market-plant culture," the decoration of our greenhouses and apartments has become a monotonous repetition of a florist's shop in a fashionable thoroughfare. The same plants are seen everywhere. Of course, for purely market purposes this state of things is inevitable, and it presents the advantage of showing the perfection of cultivation so far as those particular plants are concerned, but in private establishments, and especially where there is any real love for plants, it is not necessary to be so restricted in our choice, and we look to our botanic gardens to accentuate this fact by presenting for inspection well grown specimens of plants suitable for decoration. It is hardly the province of a botanic garden to test the value of plants in this way any further—that may be left to the horticultural societies, to trade and private enterprise; enough for the botanic gardens to bring the plants under notice, and leave their development to gardens of the ordinary kind.

Bed of Cannas (see Supplementary Sheet).—The fine bed of Cannas figured in the supplementary sheet was an attractive part of the gardens at Euston Hall, Thetford, last season. Mr. W. Low, the gardener at that place, and to whom we are indebted for the photograph, says the Cannas helped by their masses of cheerful green to tone down the gaudiness of the surrounding beds full of glowing colours. The bed was 14 feet in diameter, the Cannas occupying a space 12 feet wide in the middle of it; a row of Perilla nankinensis, then a row of silver variegated Pelargoniums, and an edging of pink Lobelia forming the border to the bed. Cannas are of easy culture, and, unlike many tender plants, can be stored away in a frost-proof dry place during winter, like Potatos. In March the roots are pulled to pieces and placed on the border of a vinery just started, and lightly covered with leaf-soil. After making a little growth they are placed in pots just large enough to hold the roots, and grown on in heat until they are about 18 inches high, then transferred to a cool house or pit, and gradually hardened off, prior to planting out during the first week in June. A rich light soil, to which a liberal dressing of old hotbed manure has been added, and plenty of water at planting time, and afterwards if the weather be hot and dry, are the conditions of success in growing them in the open.

"The Orchid Album."—The plants illustrated in this useful periodical are:—

Masdevallia ignea var. Massangeana, t. 273.—In this variety the flowers are "bright orange-vermilion flushed with rosy-purple. It flowers in March—April."

Odontoglossum pardinum, t. 204.—The narrow yellow perianth segments of this species have numerous irregular brownish spots on a yellow ground. The flowers are deliciously fragrant.

GROUP OF CANNAS, AT EUSTON HALL, THETFORD.

Saccolabium Hendersonianum, Rchb. f., t. 275, is a very curious species from Borneo, of relatively dwarf habit, and with erect cylindrical racemes about 5 inches long, densely covered with small rose-pink flowers. It requires to be grown on a block with little material about the roots beyond a little sphagnum and a few small lumps of charcoal, near the glass in the East India-house, and kept moist, but not wetted. Insects should be carefully looked after.

Oncidium superbiens, Lindl., t. 276.—A handsome species, with long loose racemes of flowers, each about 3 inches long by 2¼ in width. The sepals are cordate roundish, wavy at the margins, and with a distinct stalk. In colour they are chocolate-brown with a narrow edging of yellow. Petals stalked, cordate, ovate-acute, yellow, with transverse chocolate bars; lid shorter than the segments, hastate, acuminate, chocolate-brown.

The "Botanical Magazine."—The March number of this periodical contains coloured figures of:—

Xanthoceras sorbifolia, t. 6923.—Already figured in the *Gardeners' Chronicle*, and of the merits of which as a hardy shrub it would be hard to speak too highly.

Lapeyrousia grandiflora, t. 6924.—A near ally of Anomatheca cruenta, Natal, the present plant, according to Mr. Baker, being a native of the Zambesi country, and offering another illustration of the analogy between the Cape flora and that of the mountains of Eastern Tropical Africa. The leaves are in two rows, narrow, and grass-like, the flowers in stalked cymes, each flower about 2 inches across, slightly irregularly six-parted, the segments oblong-lanceolate, reddish-pink, the three lower ones with a yellow blotch at the base, above which is a deltoid spot of rich crimson. The plant flowered at Kew in October last.

Corydalis Kolpakowskiana, t. 6924.—One of the introductions of Dr. Albert de Regel, from Western Turkestan. The figure was taken from a plant grown by Mr. Elwes.

Begonia cyclophylla, Hook. f., t. 6926.—This is a new species, from Southern China, and flowered at Kew in April, 1886. It is a tuberous species, producing only a single leaf about 6 inches across; orbicular, cordate, palmately 7—9 nerved, covered with hairs. The flowers are borne on cymes supported on a leafless scape uprising direct from the tuber. The flowers are rather over an inch across, rose-pink. In the male flowers the anthers are in globose heads; the female flowers have the usual 3-winged ovary, surmounted by a style and three twisted stigmas. The bracts and stipules are oblong, lanceolate, and fringed at the edges with long hairs.

Ceropegia Monteiroæ, Hook. f., t. 6927.—A new species sent to Kew from Delagoa Bay, by Mr. Monteiro. It is a glabrous climber with opposite shortly-stalked lanceolate succulent leaves, and cymes of greenish flowers, each about 2½ inches long; the corolla tube balloon-shaped beneath, suddenly constricting into a slender cylinder which gradually expands upwards into a broad funnel-like throat, the mouth of which is over-arched by the five segments of the limbs which are spotted with purple spots. It is a plant to be recommended to the *cognoscenti* for the elegance of its form and the singularity of its structure.

Chiswick Mutual Improvement Association.—On Friday evening, the 4th inst., Mr. Richard Dean delivered an interesting address before a good gathering of the members of this Institution, his subject being the "Florists' Tulip and its Characteristics," which he illustrated by diagrams of the Breeder Tulip in its seedling form of byblœmen, bizarre, and rose, and as it afterwards appeared breaking into feather or flame.

AUGUSTE VAN GEERT.

Professor Eichler.—We hear with deep regret of the death of Dr. Eichler, one of the Professors of Botany in the University of Berlin, and Director of the Royal Botanic Garden of that city. Dr. Eichler was, we believe, born in Cassell in 1839. For the moment we are not able to furnish any details as to his early career, as our acquaintance with him began only when he was assisting the late Dr. Von Martius, at Munich in 1869. Afterwards he became Professor of Botany at Graz in Styria, and became Editor of the monumental *Flora Brasiliensis* on the death of Von Martius. From Graz he removed to Kiel, the botanic garden of which city he found in a

deplorable condition. After the death of Alexander Braun, Eichler was made head of the Berlin Garden. His researches into the structure of Coniferæ, Balanophoreæ, and other orders, gave him a high rank among systematic botanists; while his *Blüthen Diagramme* remains a unique compendium of information on the morphology of flowering plants, and is a work of such great utility that it is much to be deplored that the Clarendon Press or some other body have not long ago issued a translation of it, as being by far the best book of its class.

Royal Botanical and Horticultural Society of Manchester.—At the monthly meeting of the Council of this Society, held on Monday, the 7th inst., Mr. Joseph Broome was unanimously elected Chairman of the Council, in the place of the late Dr. John Watts. A plan submitted by Mr. Samuel Deard, of Harlow, Essex, was adopted for the erection of glass structures on the plot of land near the Old Trafford railway station, upon which will be held the annual Whitsuntide Horticultural Exhibition of 1887. These erections will be 300 feet long, and connected and heated, so that tender plants will be quite safe.

Vine Pruning.—The sweetness of the Grape depends on the amount of sugar it contains; that sugar is derived from the starch that is formed in the leaves under the influence of light. No light, no starch, no sugar. These are incontrovertible facts. What, then, can be said as to the propriety of pruning and stopping? Obviously, as a matter of theory, the removal of so much leaf-surface means so much less starch and so much less sugar. But in the case of the old rods of a Vine there is a store of starch still available, and one object of the cultivator should be to secure the maintenance of a sufficient reserve of this nature; hence he should not prune too early, but allow time for the starch to accumulate. As to stopping, that looks barbarous, but it is really not so when it is remembered that the young shoots partially live on the old ones, and divert from the bunches the food that they would otherwise receive.

Orchids in Season.—We have received some blossoms of Cattleya Trianæ of splendid proportions and beautiful colouring, especially the Popayan varieties, introduced by Messrs. H. Low & Co. a few years since. Lælia harpophylla and Odontoglossum Rossi were very choice strains. Next week we hope to publish Mr. Swan's note concerning these Orchids.

Daffodils.—As samples of Irish home industry Mr. Hartland sends us a bunch of Rip van Winkle Daffodils, a very showy double form, figured by us last year; the very early form so often spoken of lately as Ard-Righ; Hartland's Golden Princeps, with narrow oblong canary-yellow segments, as long as the deeper yellow corona; Hartland's Improved Princeps, with pale sulphur-coloured segments slightly longer than the deeply lobed golden-yellow cup; and a large form of N. pallidus præcox.

Burridge Relief Fund.—Mr. R. Dean writes: "I have to acknowledge the receipt of 10*s.* 6*d.* from Messrs. J. Wrench & Sons, London Bridge, towards this fund. Mr. C. Burgess, Cherry Hinton, Cambridge, and Mr. W. Thompson, Tavern Street, Ipswich, have sent direct to Mr. Burridge."

National Chrysanthemum Society.—A meeting of the General Committee of this Society took place at the "Old Four Swans," Bishopsgate Street, E.C., on the 7th inst., E. Sanderson, Esq., President, in the chair. Applications for affiliation from the Wokingham and Leicester and Midland Chrysanthemum Societies were received; making in all twenty-seven societies admitted to this relationship. Mr. Owen, nurseryman, Maidenhead, announced his intention to offer prizes at the January mid-winter exhibition, in 1888, for the best twelve blooms of his new late-flowering Chrysanthemum, Golden Gem; and M. Simon Delaux has considerably modified the conditions upon which he offers his special prizes, Mr. B. Field, Old Kent Road, also offers special prizes for twelve blooms of incurved Chrysanthemums, and also for twelve Japanese, at the November exhibition. It was resolved that at each meeting of the Floral Committee of the Society a Silver Medal should be offered as a 1st prize, and a Bronze Medal as the 2d prize for twelve blooms of new Chrysanthemums. All varieties that have appeared in the catalogues of English nurserymen previous to November, 1886, will be disqualified. This action on the part of the Society is all the more necessary, because the class for new varieties that has hitherto appeared in the schedule for the November show has been struck out; and some 450 or so of new varieties are announced since last autumn. It is also believed that the offering of these prizes will be the means of bringing a larger number of the members to attend the meetings of the Floral Committee. At the request of the Committee of this Society, M. Simon Delaux has, as before stated, consented to modify the conditions upon which he last year offered some special prizes, and they will now read as follows:—At the November exhibition, at the Royal Aquarium: Collection of plants of Japanese Chrysanthemums, and a collection of cut blooms of ditto; and at the earlier September show, a collection of cut flowers of Chrysanthemums. The only varieties admissible in these classes are those sent out by M. S. Delaux in February, 1887.

"Die Naturlichen Pflanzen-familien."—Drs. Engler and Prantl have commenced the publication of a work which cannot fail to be of great service to all who have to do with plants. The only defect we see in it so far is that it is written in German, but doubtless that objection will not have much force with the publisher (Wilhelm Engelmann, of Leipzig). It is intended to comprise an account of the natural orders of plants, together with their genera, and with reference especially to the most important species. From this it will be seen that a work is proposed in some respects like Baillon's *Histoire des Plantes*. The programme is an ambitious one, but as the principle of subdivision of labour is to be acted on, and each natural order to be entrusted to a special monographer, there is hope, not only that the work will be well done, but also that it will be brought to a conclusion within a reasonable period. The first part—now before us—contains a part of the history of Palms, by Professor Drude. The first paragraph is devoted to a register of the leading scientific and popular treatises on Palms. We miss in this section any mention of the writings of Traill on the Palms of the Amazon. Incidentally, we may note that the articles on "Garden Palms," quoted from the *Gardeners' Chronicle*, are from the pen of Mr. W. Watson, of Kew, and not, as here erroneously stated, from that of Dr. Masters. Then comes a section comprising the characteristics of the order as a whole, and a detailed sketch of the organs of vegetation and fructification, including their anatomical construction. The several genera are treated of in order, or with reference to their present geographical distribution, and in past epochs of the world. The uses of the plants are detailed, and the text illustrated by a large number of useful illustrations, which happily appeal to men of all nationalities, whatever their mother-tongue may be. We look forward to the progress of this work with great interest.

Reading Horticultural Society.—The early summer show of this Society will take place on June 2, and not on June 22 as already announced.

Baboo Hari Mohan Mookerjee.—We regret to announce the death of this gentleman, who was for many years lecturer on botany at the Normal School of Seebpore, and the pioneer of scientific agriculture among the natives. By his death, says the *Indian Agriculturist*, the country has lost a character of rare simplicity and loyalty to truth. The deceased was an enthusiast in the cause of science. Originally a student of the Calcutta Medical College during the days of the Board of Education, he left college after four years without taking his diploma. It was about this time that Hari Mohan devoted himself to the study of Indian natural history. As a student of the Medical College he had for some seasons attended at the Company's Botanical Gardens on Dr. J. M. M'Clelland and Mr. W. Griffith. These gentlemen were then prosecuting their researches in Indian geology and Indian natural history, and were enriching with the results of their enquiries the pages of the *Calcutta Journal of Natural History*, which the two edited. They invited and received him with open arms, and he contributed not a little to build up their fame. He went to most of the wild parts of India in search of specimens. On one occasion he penetrated with a couple of snake-men to the heart of the Sunderbuns to procure a Sankhochoor snake, and after capturing one and bagging it, quietly took shelter with a *modee* at night. The *modee*, however, came to suspect the contents of the bag, and drove the Brahmin out in the middle of the night into the wilderness as a dangerous customer. The Baboo went the length of tasting the deadly serpent poison. It was in this devoted workmanlike manner he became a practical botanist and zoologist. Utterly destitute of ambition, and without a grain of obtrusiveness in him, he was content to pass the best part of his life in a subordinate position as lecturer of practical botany in the Calcutta Normal School. Many useful and interesting experiments were successfully made by Baboo Hari Mohan in the acclimatisation of various kinds of foreign paddy and plants.

North Lonsdale Rose Society.—This Society, which is affiliated to the National Rose Society, will hold its next annual exhibition at Ulverstone on July 22.

"Album of Indian Ferns."—This is a series of illustrations in colour of various Ferns found on the Shevaroy Hills by the artist, Mrs. (?) C. E. Baynes. The drawings are faithful so far as they go, but for the most part they represent mere scraps, or, at best, single fronds. The drawings are of no botanical value, but they may be useful as reminders, and they form an elegant volume for the drawing-room table. They are published by W. Day, 21a, Berners Street.

Stephanotis Lily.—The register of popular names is becoming as cumbrous as that of the more technical epithets. Our colleague, *Amateur Gardening*, endeavours to float Stephanotis Lily instead of Freesia. In this case, the botanical name is surely the shorter and easier. Names are but symbols and means to an end, hence it is not essential that they should be descriptive, though it is convenient when they can be made so, but what shall we say of the convenience in this case when the epithet is so thoroughly inappropriate? It is saved by the wit of the Editor, who asks, appropriately, "What is a Bachelor's Button?" It has nothing to do with a bachelor, and it is not a button.

Tobacco Culture.—Mr. E. J. Beale lectured before the Society of Arts, on the 2d inst., on this subject, and gave an account of the experiments made by Messrs. James Carter & Co. during the last summer. The cost of cultivating an acre of ground is given at £25 7*s.* 8*d.*, the land being rented at £3 an acre. At 4*d.* a pound this admits of a profit of from £10 to £24 per acre, according to the variety grown. Mr. Beale was rightly cautious not to recommend the British farmer to enter into the cultivation of Tobacco under present circumstances, except in small quantities. We shall revert to this matter.

"Le Jardin."—Under this name M. Godefroy-Lebeuf has issued the first number of a quarto, three-column journal devoted to horticulture in general. The Editor wishes his readers to consider themselves in the light of a vast horticultural society, of which the *Jardin* is to be the organ. It is to be published fortnightly, and judging from its contents it is to consist of practical information relieved by lighter matter and illustrated by woodcuts. The

new journal is to appear fortnightly, and is published by M. Amédée Picard, Argenteuil, near Paris.

Roots from the Perisperm of Cycas.—M. Duchartre has lately described, before the National Horticultural Society of France, the production of roots from the albumen of the seeds of a species of Cycas—a most unusual circumstance.

New York Agricultural Experimental Station.—The report for the year 1886 has reached us, containing the summary of the year's proceedings, articles on meteorology, the relation between temperature and crops, the narrative of the experiments to determine the synonymy and ascertain the characteristics of the numerous varieties of Cabbages, Indian Corn, Wheat, Potatos, Tomatos, and divers other vegetables. Professor Arthur reports on Pear blight (Micrococcus amylovorus), Strawberry blight, &c. We shall have occasion to allude at greater length to this interesting record later on; meanwhile we may congratulate the officers on their happy blending of practice with science.

Dumfries Horticultural Improvement Association.—The usual monthly meeting of this Association was held in Greyfriars' Hall on the evening of the 3d inst., Mr. McCreath, President, in the chair. A paper on "The Cultivation of Orchids," by Mr. George Cole, Woodbank Gardens, was read, and listened to with great attention.

"Lindenia."—The plants figured in the last number of this publication are:—

Cypripedium callosum, Rchb. f., t. 73.—The very beautiful Siamese species, figured in a recent issue of the *Gardeners' Chronicle*. The petals are represented as deflexed, but this character is not constant.

Dendrobium bracteosum, Rchb. f., t. 74.—A very remarkable species, from New Guinea, described in our columns by Professor Reichenbach. It is a Dendrobe with slender pendulous stems giving off at the nodes tufts of roots, shoots, and here and there oblong tufts of rosy-pink flowers, each subtended by a lanceolate bract of the same colour as the flowers, so that the whole inflorescence has something of the appearance of a large head of Clover.

Odontoglossum grande, Lindl., t. 75.

Brassia caudata, Lindl., *var. hieroglyphica*, Rchb. f., t. 76.—This variety, as the name denotes, is remarkable for the numerous irregular brown markings on the yellow ground of the perianth-segments.

Exhibition of Hardy Fruit at Chester.—We regret to be obliged to defer our notice of this interesting show and conference till our next issue.

Chiswick Horticultural Society.—In the schedule of this Society, just to hand, we notice the two following special prize cups offered by Mrs. S. A. Lee, and which should ensure a very good competition and make the Chiswick show even better than it has been in former years. For a group of plants arranged for effect, and occupying a space not exceeding 100 square feet (open), the chief prize is the Jubilee Challenge Cup, value 26 guineas, offered by the lady just named, and to which the Society adds £4. The cup is to become the property of any exhibitor who gains it three times, not necessarily in succession. A smaller silver cup (value 7 guineas) is offered for a group of twenty-five plants in flower, in pots not exceeding 8 inches, arranged with Palms and Ferns (open to subscribers only). The second prize in this class is offered by the Royal Horticultural Society, and is a silver medal.

Narcissus Committee, Royal Horticultural Society.—Mr. Scrase-Dickins, Hon. Sec. Narcissus Committee, writes:—"Will you allow me to inform your readers, in case they may not have seen the notice, that the meetings of the Narcissus Committee for this spring are fixed for March 22, April 12, and April 26, when we hope to carry on our work of former seasons. Any objects of interest that may be sent addressed to me at South Kensington, in time for one of these days, will be cared for and brought before the committee. What we endeavour to do is, (1) to acquire information as to wild and typical species from their habitats; (2) to identify the names of specimens unknown to the sender, and to correct any errors in nomenclature which may occur among those exhibited at the shows of the Royal Horticultural Society; and (3) to pass an opinion as to the distinctiveness and value of hybrid or seedling forms, and, if considered worthy, to register them under distinctive names.

Linnean Society of London.—On Thursday, March 17, at 8 p.m., papers to be read:—1. "On Crustacea from Singapore," by Alfred O. Walker. 2. "The genus Ficus, with special reference to Indo-Malayan and Chinese species," by Dr. George King.

The Gardeners' Orphanage.—It is evident from the letters we receive that this project, which does so much credit to Mr. Penny and Mr. Clayton, finds favour with the craft. Our space is so limited that we are obliged to omit many letters that have been received on the subject. Some correspondents doubt whether sufficient money will be forthcoming, and most wisely deprecate the idea of expending money on bricks and mortar, at any rate at first; still, the higher and larger our aim the more good we are likely to effect. The matter must and will grow—evolve is the fashionable term—if it be prudently started and carefully watched from the beginning. Various suggestions have reached us on points of detail, which it is not necessary for us to print, but which shall be at the service of that consultative committee which we hope will shortly be empowered to collect opinions and initiate a scheme. Our correspondents must not feel aggrieved if, in the crowded state of our columns, we do not insert their letters. Our sympathies are in full accord with the main principle of the undertaking, and we shall do all we can to promote the scheme if it be once fairly started, and trust that our readers will continue to favour us with suggestions, which shall in due course be submitted to Mr. Penny or to any committee that may be formed. With reference to this matter, Mr. Heale, of King's Acre, Hereford, desires us to say that he was not the writer of the article in our issue of February 19, p. 257, signed with the same initials, "W. H.," as those of Mr. Heale himself. Mr. Heale desires us to say that he is quite in favour of Mr. Penny's proposition.

AUGUSTE VAN GEERT.

We are glad to be able to lay before our readers a portrait of this gentleman (see p. 353), whose decease was announced in an earlier issue. For what follows we are indebted to the Count de Kerchove:—

Van Geert, the father of Auguste, who was born in 1790 and died in 1871, was one of the founders of Belgian horticulture. He was one of the first in Europe to call public attention to the plants of New Holland, and it may be said, without fear of being contradicted, that he popularised in Continental Europe the cultivation of those plants with fine and small roots which are still known as New Holland plants. It is to him that we owe the first catalogue made by a Belgian horticulturist, which forms an era in Belgian horticulture.

Auguste van Geert inherited from his father the spirit of progress and perseverance which enabled this veteran horticulturist to found in a few years an establishment which strangers as well as Belgians liked to visit. In his earliest youth Auguste van Geert left home to study practical horticulture in England. In 1838 he was received as an apprentice by Messrs, Knight & Perry, in their celebrated establishment, and it was there that he attained his knowledge of commercial horticulture and the cultivation of rare plants. He remained there for some years, during which he formed the acquaintance of Low, Henderson, Rollisson, and other English nurserymen. Van Geert learnt in England, at the same time that he learnt the art of horticulture, the perhaps more difficult subject of horticultural sympathy. Returning to Belgium he believed that he had a debt to pay. Having founded an important horticultural establishment he thought it his duty to help younger men in the acquisition of what he himself had learnt from his English friends by receiving into his establishment youths who wished to be initiated into the practical workings of horticulture. As he had received advice and instructions, it seemed to him to be a duty to charge himself with the instruction in his turn of generations yet younger. Thus did his establishment become a regular school of practical horticulture.

Nominated in 1841 a member of the Société Royale d'Agriculture et de Botanique de Gand, Auguste van Geert took a considerable part in all the exhibitions so celebrated in the horticultural world of the old Society of Ghent. Amid the congratulations of all his compatriots, it was in 1873 that the King, Leopold II., who is himself one of the most eminent patrons of horticulture, gave him the Cross of Chevalier de l'Ordre National.

Auguste van Geert was essentially a Flamand; he was as severe with others as with himself when at work, while he was gay and cheerful in times of relaxation. While acting thus he adopted the ancient Flemish device of his father—"Work and perseverance bring prosperity." Fortune reserved for him her richest favours, and even better than fortune—respect and public attention—honoured his old age. This was proved at the time of his death. This public honour was well deserved. The name of Van Geert has survived for many years; it is still borne to-day, and worthily, by his son and by his son-in-law, Ed. Pynaert. The name will be venerated in Belgium, and especially in Ghent, as that of one of the most popular in Belgian horticulture, as it calls to mind one of the three founders of horticultural enterprise in Ghent—Van Houtte, Verschaffelt, and Van Geert. Of this celebrated trio one member has gone, but the others have, by one of those phenomena which hardly surprise horticulturists, acquired new strength by new growths from the old stock.

FORESTRY.

NOTES FOR PLANTERS.

Thick and Thin Planting.—To specify any limit for the distance apart at which standards should be planted, and which will be applicable to all trees, is an utter impossibility; as it depends upon soil, climate, and altitude. Where the production of timber is the main consideration, but which rarely happens in this country, then by all means, but particularly so in Pine plantations, preserve an unbroken leaf canopy, for by so doing the tallest and cleanest timber will be produced. Where the question of game covert comes in then thin out well, by not allowing the standard trees to occupy more than one-half of the entire wooded area, for be it remembered that light and air are the two great necessaries in the successful cultivation of underwood.

Planting near Houses.

Mistakes are often made, not only in the selection but in the planting of trees, whether for ornament or shelter, in the vicinity of mansions and other buildings. Too often, unfortunately, in our line of life, are we called upon to remedy, if remedy we can, the gross errors that have been committed in this way, and too often, even at the present day, do we see trees that will ultimately attain large dimensions planted within a few feet of the side of a building, or the margin of a walk, or road, or, as is far too frequently the case, planted in a position where they will soon shut out he finest views. When a new house is built, it is no uncommon thing to see a line of Sycamores and Ashes planted within a yard of its sides, the majority of persons seeming never to take into consideration the size to which any tree will ultimately attain. If this were done we would hear far less grumbling

amongst farmers and others about smoky chimneys, damp yards and paddocks, &c.

Value of English-grown Timber.

The influx of foreign timber from Canadian and Norwegian ports has of late years considerably altered the prices and demand for home-grown woods. Most foresters are now thankful to have the chance of disposing of their Oak at little over 1*s*. per foot, whereas half a century ago it was the most valuable timber grown, there being but little difficulty in selling it for nearly three times that price—this no doubt accounting in a very satisfactory manner for the vast tracts of ground either planted or sown with this tree, and which are now at full maturity, but with no market. Times will alter, however, for the unlimited import of foreign timber must, in countries where but little planting is at present engaged in, lessen the supply. This, indeed, has been already proved in the case of some Canadian wood—notably Pinus.

Ivy on Trees.

Although Ivy is not so hurtful and injurious to trees as is generally supposed, still I do not say that it does not injure some trees. Young plantations of Larch, and the generality of hardwoods, frequently suffer almost irreparable damage from the quantity of Ivy that is allowed to twine around them, and carpet the greater portion of the woodland; whereas in old plantations where little light is admitted the Ivy is kept in bounds, and seldom makes sufficient progress to do any great harm. To keep the Ivy under, more particularly in woods along the west coast of Britain, is no easy task, and it can only be well done by constant perseverance and considerable expense. Perhaps the best method of destroying Ivy, where it abounds in quantity, is to sever it from the tree's trunk for 3 feet up the stem, and at the same time grub up the roots around the stem for a diameter of, say, 6 feet. By removing the flowers from the plants at present will likewise be productive of good in preventing the dissemination of seed.

Willow Hedges

A good deal might be said in favour of Willow hedges, but particularly they are valuable in maritime situations for forming garden screens, or shelters. I have seen the Willow battling successfully with the fierce, hard-blowing winds of the Lancashire coast, and there forming barriers of a score or more feet in height, or when cut annually as hedges for the cottage-garden and fields. The Willow is peculiarly useful, inasmuch as it thrives perfectly well either on the upraised mounds of drifted sand, or in the more hollow ground. *A. D. Webster.*

BEYAZ DAGH AND CASTLE OF ANASCHA.

The Home of Crocus parviflorus.

By the courtesy of Mr. Maw, we are enabled to give another illustration (fig. 75) from his great work on the genus Crocus, noticed at length in an earlier number.

Mrs. Danford discovered Crocus parviflorus (not of Rchb.), in the spring of 1876 in Fir woods, at an altitude of about 4000 feet, near the village of Anascha, in the Cilician Taurus, latitude 37° 20′ N., longitude 34° 40′ E. The plants were growing on an earthy slope about one mile from the village.

AN OBLIQUE ESPALIER.

Professor Griffon, of the Arboricultural School of Tournai, has been experimenting on the results obtained from Pear trees under various modes of training, and has published accounts of his researches in a book entitled *Cours d'Arboriculture*, of which a notice appeared in the *Illustration Horticole* for December 25 last. An illustration extracted from the work was also given, and of which we now give a copy at fig. 74. The cut shows a system of double oblique training, to which the name "Contre espalier forme Griffon" has been given. The following are the directions given:—To secure this form trees must be planted at 1 m. 30 (=4¼ feet) apart, and left unpruned the first year, but pruned the second year at about 0 m. 25 (=9 inches) from the ground, and where there are two eyes. Two stakes are then placed at 0 m, 35 (a little over 1 foot) to the right and left of the tree. During growth the two shoots are trained on a rod placed on the interior at the base of the tree, and which runs to the two stakes. The shoots are inclined almost horizontally, then run out obliquely on the two conducting rods placed as before, at an angle of 45°, so as to form an oblique U, 0 m. 70 (=2 feet 3 inches) wide. When the first branches from the base have attained a length of 1 m. 50 to 2 m. (=4½ to 6 feet), take at the elbow A of these two last two buds, which are trained vertically; when they are 0 m. 60 (=1 foot 9 inches) long from the first branches bend them at a height of 0 m. 40 (=1 foot 2 inches), and at an angle of 45°.

The leading branches are cut back at first about 0 m. 60 to 0 m. 70 (=1 foot 9 inches to 2 feet 3 inches) each year, and as to the pruning of the fruiting parts, it is just as in fan-training. The distance of the obliquely-trained branches from each other is 0 m. 30 (= 1 foot), and 0 m. 70 (=1 foot 3 inches) internal space. This gives free access of light and air, and therefore good crops.

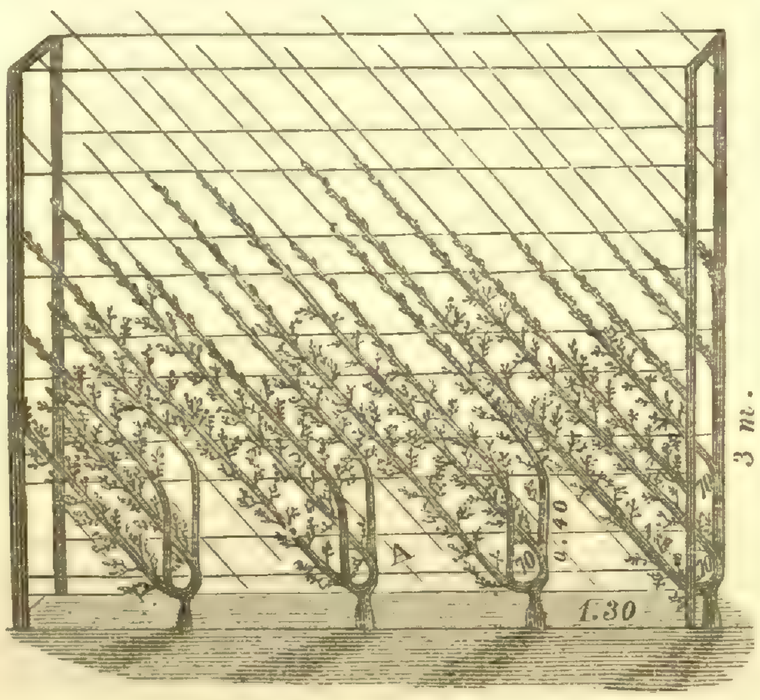

Fig. 74.—Griffon's espalier.

HOME CORRESPONDENCE.

A NEW BENEFIT SCHEME FOR GARDENERS.—I quite agree with "W. H." (p. 257) in his opinion that gardeners would refuse to pay anything towards the scheme of establishing an orphanage, but not because they cannot afford it, as I believe they are as capable of paying towards any scheme that would be to their benefit as any other class of workmen. The average wage for a head gardener may be safely put at 22*s*. per week, with house, coal, vegetables, &c., bringing his wage equal to the best paid of town tradesmen; and the journeyman's wage seldom comes lower than 15*s*. per week with bothy, vegetables, and sometimes milk: bringing his wage equal to 20*s*. per week at the very least. But the question that gardeners have been puzzling themselves over for years, is how they can help themselves and keep the wolf from the door when they happen to be out of a situation. Every other class of skilled workmen has its society, from which, by the payment of a small weekly sum they can draw from 10*s*. to 15*s*. weekly when out of employment, but when the gardener is out he must either starve or go into a nursery, which is very little better than starvation. And the latter course, when adopted by the gardener puts him to a great disadvantage, as the gardeners' employer of the present day is quite alive to the evil that may exist through his gardeners being under an obligation to a nurseryman. The fact is, in many cases at the present time the nurseryman not only sells his seeds, &c., but also provides the buyers. Now, any movement that gardeners may have in view to celebrate the jubilee year of Her Majesty's reign ought to have a tendency to foster among the class, habits of self reliance on their own industry, forethought, and independence; and then it will deserve the hearty approval and support of not only their employers but also of all thoughtful men, whether they employ a gardener or not. And it is with great pleasure that I hear of a society being formed to be called the Gardeners' and Foresters' Self Help and Registration Society, having for its objects—1. The establishment of a benefit fund for members out of employment, this fund to be raised by weekly subscriptions 2. To place gardeners and foresters upon a sound and independent footing, in relation to nurserymen, leaving it of course optional whether they enter a nursery or not when out of employment. 3. To provide a superannuation fund for members in their old age. 4. The Society's secretary to keep a register specially for gardeners and foresters, and to issue lists of members requiring new situations, advertising them and using every means to secure them such. It is proposed to confine the membership to *bonâ fide* gentlemen's gardeners and foresters who have been at the very least four years under professional tutorship, and only to those of good character, and any member losing his character will not be put forward by the secretary for any situation. The affairs of the Society are to be under the control of a committee of professional men, whose business it will be to keep the affair pure in its integrity; consequently it will be sure to commend itself to the employers of gardeners, as they will have every confidence when applying for a gardener that none but professional men of good character will have their names upon the printed list that will be sent for his inspection. I wish it every success, and I am sure all gardeners must wish it the same; and I am confident that it will commend itself to gardeners and their employers beyond anything that I have seen suggested in your columns as a means of celebrating the jubilee year, as it will not only be honouring our gracious Queen, but will prove a perpetual boon to the celebrators. I hear that the society's rules and scale of subscriptions will be published in a week or so, and when we see the whole scheme in print we will be better able to judge as to its merits. *Forester.*

CROSS-BRED ROSES.—My attention has been called to an article signed "Wild Rose," in the *Gardeners' Chronicle* of February 19, on "The Classification of Exhibition Roses" and on "Raising New Roses," As I consider his observations likely to lead to misapprehension, and as "Wild Rose" scarcely touches on any Roses except those of my raising, I think I ought to be allowed to say a few words on the subject. He says:—"I do not think we are to take the *ipse dixit* of any raiser that the parentage of a Rose is what he, honestly it may be, thinks it to be." Why not? I consider that we are bound to take the word of the raiser of a Rose just as we take the word of the raiser of anything else—an animal, a bird, &c.; it is not more difficult to keep a Rose plant secluded than it is a bird or an animal. Then he goes on to say, "We have had in your columns recently an instance of this 'delightful confusion;'" to whom is the confusion due, if there is any? It cannot be laid at my door; I think some must be laid to the charge of "Wild Rose" himself. For some time there has been in the *Gardeners' Chronicle* a controversy between "D. T. F." and "Wild Rose" as to whether the Rose Lady Mary Fitzwilliam is a Tea or a hybrid perpetual, and it appeared as if the latter was endeavouring to convey the impression that this Rose is a hybrid perpetual, at least it appeared so to my mind, and also to the minds of many others, because in a previous statement he says:—"In some catalogues it is classed as a hybrid perpetual. . . . It has the same style of growth as Baroness Rothschild." It was these observations that compelled me again to publish the fact that it was a seedling from Tea Devoniensis, my sole object being to show that it is not a hybrid perpetual. "Wild Rose," in his latest article, p. 247, says:—"According to Mr. Bennett's latest views it ought to be in the first (Tea class)." This is hardly fair, as that is not my view at all. I have not the slightest wish that it should be classed as a pure Tea. Is it at all likely that I should stultify myself by so doing after for four years showing it, advertising it, and always placing it on my Rose list even down to last autumn as a hybrid Tea? In another statement he says:—"I rely on the catalogues" (he evidently does not rely on mine, sent herewith, and which I trust the

Editor will forward to him). Now as to the catalogues that have placed the Rose under the class of H.P. I will ask "Wild Rose" to point to more than one firm which has catalogued Lady Mary Fitzwilliam as a hybrid perpetual. It is with the utmost reluctance that I feel compelled to allude to it, but I think it only right that I should endeavour to clear up this "delightful confusion" as "Wild Rose" terms it. In 1882 I placed in commerce six seedling Roses, three hybrid Teas, two hybrid perpetuals, and one Tea; they were advertised in all the leading English, Continental, and United States horticultural papers, and catalogued thus:—

Tea.—Princess of Wales, seedling from Adam × Elise Sauvage.

Hybrid Teas.—Countess of Pembroke, seeded from President × Charles Lefebvre; Distinction, seeded from Madame de St. Joseph × Mdlle. Eugénie Verdier; Lady Mary Fitzwilliam, seeded from Devoniensis × Victor Verdier.

Hybrid Perpetuals.—Earl of Pembroke, seeded from Marquise de Castellane × Ferdinand de Lesseps; Heinrich Schultheis, seeded from Mabel Morrison × Mons. E. Y. Teas.

Messrs. Paul & Son, of Cheshunt, class them in this way, *vide* Paul & Son's *Rose Catalogue*, The Old Nurseries, Cheshunt, for 1883-84:—Princess of Wales as a Tea; Countess of Pembroke, hybrid perpetual; Distinction, Tea; Lady Mary Fitzwilliam, hybrid perpetual; Heinrich Schultheis, hybrid perpetual; Earl of Pembroke, hybrid perpetual. Why these gentlemen should have departed from their usual mode of cataloguing I do not know, but I think it hardly right to do so without giving some explanation. There is this curious coincidence, I have positive proof that Countess of Pembroke was seeded from a plant of Tea President absolutely purchased from their Cheshunt establishment, and I have the plant still. It is somewhat disappointing to me that "Wild Rose" will not accept my contradiction as to "Her Majesty," and I am sorry that he should apply to me the Latin adage, "*Quod facit per alium facit per se.*" I cannot but consider this as unfair to me, as I am not responsible for any advertisement, announcement, description, or anything which has appeared in the press respecting this Rose, except the article in the *Florist and Pomologist* of June, 1880, signed W. Moore, which was written under my dictation, and to which I beg to refer "Wild Rose." "Wild Rose" states "Her Majesty was enveloped in mystery: she 'came (was seen), and conquered,' gained the National Rose Society's Medal, and was considered a grand Rose. . . . She then disappeared. Her whereabouts was a mystery." I now ask "Wild Rose" where is the mystery, and for how long was the disappearance? After "Her Majesty" gained the medal of the National Rose Society, and the 1st prize for the twelve best blooms of any Rose in 1883 at South Kensington, she was exhibited at the National Rose Society's Show at Sheffield, and was again awarded the last-named honour. In 1884 she was exhibited, though not at the National Rose Society's show, for this reason—that exhibits were confined to members of the Society only, so that I was shut out; but in 1885 the Society relaxed their rules, and "Her Majesty" was awarded the same honours she had won on two previous occasions. In November, 1885, the stock was sent to the purchaser in the United States, and on arrival there some of the plants were immediately reshipped to England, and by the first week in January were in the possession of several nurserymen here. I ask again, Where is the mystery, and for how long the disappearance? Then "Wild Rose" wishes to make it appear that these two now notable Roses named were not produced by artificial means, and states that something must (must is an exceedingly strong term, and certainly should not have been used here) have been beforehand with me in the shape of insect or self-fertilisation. Here, I think, he has gone beyond "the last," and although I have not the pen of a ready writer I believe I can easily upset such a flimsy argument. I have stated that Lady Mary Fitzwilliam was a seedling from Devoniensis × Victor Verdier, and Her Majesty seeded from Mabel Morrison (this Rose, of course, is the same as Baroness Rothschild except in colour of petal) × Canary. Now is it likely that the insect kingdom, which I have tried to keep by all possible means at a distance, should have been so much more munificent to me than to any other raiser in producing two such Roses as those named? Then as to self-fertilisation, I ask "Wild Rose" if he has ever seen in England any seed naturally produced from Devoniensis, Mabel Morrison, or Baroness Rothschild? I do not recollect when I first became possessed of Devoniensis, but of one thing I am quite certain, that I first propagated it just forty years ago this spring, and last year from this propagation I saw a plant of it beautifully in bloom and in perfect health and vigour. I only name this to show the longevity of the Rose. I came into possession of Baroness Rothschild in 1869, and Mabel Morrison in 1875; during these long years, speaking well within bounds, I have grown over 50,000, and kept a very careful eye on them, but not one single fertile seed have I been able to obtain where Nature has not been interfered with. Then does not it seem ridiculous to assume that, just as I was endeavouring to do what Nature has refused to do for so many years, she should have stepped in and interfered with my work? I am just as sure of the parentage of these two Roses as the Duke of Westminster is of the parentage of his noted horse "Ormonde." No doubt they have defects—his Grace acknowledges to one in his horse—but in spite of these defects, neither the horse nor the Roses have ever been beaten. There are many other points in the article which I could demonstrate to be wrong, but I think your readers must be already tired of this argument; and as I have neither time nor inclination to pursue the matter further, I shall decline any further correspondence on this subject. *H. Bennett, Shepperton, March* 3. [This correspondence must now be closed. Ed.].

Fig. 75.—Beyaz Dagh, and Castle of Anascha: the home of Crocus parviflorus. (see p. 356.)

Deterioration of Potatos.—Your correspondent "An Old hand," on p. 326, complains of his Early Rose and Magnums having watery ends and hard lumps. So far as my experience goes this is often the case with both these kinds, especially when grown in stiff soils or shady places, or if taken up before they are fully ripe: the dressing—viz., brewer's grains and Hops—may have augmented it; better for quality's sake to use half-rotten tree leaves, cocoa-nut fibre refuse, or a moderate dressing of half-rotten stable manure—the drier the quality of the manure the better, if good healthy well ripened

tubers be desired. But why grow these two old kinds when there are so many newer and better ones? There is no question but that these kinds are two of the most wonderfully productive we have, and served us well in the past—the Early Rose for its immense productiveness, and if grown on dry sunny land for moderately good quality; the Magnum Bonum the same, and in addition the latter is still one of most disease-proof ones we have—but neither of them is equal in quality to the fine kinds of the present day. We are growing Ashleaf Kidney for first, Beauty of Hebron for August, September, and October; White Elephant to use from October till May, and just a few later ones till the new ones are fit—Reading Hero or International, or a few Magnum Bonums, as it is a good keeper. If variety is needed, I have found the following half-dozen sorts to be of excellent quality, viz., Extra Early Vermont, Snowdrop, Snowflake, Schoolmaster, Vicar of Laleham, and Queen of the Valley. *C. Dimmick.*

ECONOMIC BOTANY.—In connection with economic botany (see p. 284) from a visit I paid to Ceylon, and from a long residence in India, I have found that intending planters go to India and the colonies without any training whatever regarding the nature of the business they go out to manage and direct. They have no knowledge of the nature of the plants they will have to deal with; they know nothing about their physiology or mode of training them with a particular object, or of the probable result of denuding miles of country of their indigenous forest, the action of manures, the value of wind and storm screens, and a dozen other topics which would be of everyday advantage to the planter. If a training college for planters is not already a national institution, it is high time that one were set up in connection with agricultural colleges or schools of forestry. The planter's learning should be a combination of science and art, with the object of getting the best value out of his plants, with the least disadvantage to them, and of utilising all his surroundings to the best advantage for the same purpose. It is not impossible that the ruin of the Ceylon Coffee industry may have been hastened, not only by the planter's hurry to make a fortune, but also by ignorant mistakes, which by a sufficient training might have been avoided. In India it is thought a sufficient equipment for a planter's career for him to take out a battery of guns for sport. The result is disappointment, *ennui*, loss of money, debt, &c., and finally loafing about in search of some small Government appointment for one's bread and butter. *E. B., M.D.*

BUTTER FROM BASSIA LONGIFOLIA.—This substance was quoted by a writer lately in your paper at £35 per ton. I had hoped some one would have corrected it last week, as it is now impossible to obtain £25 per ton for it, owing to the low price of fats and grease. *Thos. Christy.*

WATKIN'S PATENT GIRTHING TAPE.—Good for the seller, but bad for the buyer, will be the results of measurements taken with this handy, well got-up, and valuable tape line. We say bad for the buyer, for not one timber merchant in a score will allow of its use when purchasing round timber, the old-fashioned piece of thin whip-cord for girthing purposes being more reliable, for, pull as you will, it stands to good sense that the full half-inch-wide tape cannot give so true a girth as the piece of strong string that is now universally in use. This tape is, however, a most useful and valuable adjunct to the forester's equipment when measuring timber, as he is at once enabled to ascertain the cubical contents of any piece of round wood by multiplying the length by the figures shown on the back of the tape opposite the quarter-girth. *Forester.* [This note is in reply to one that we addressed to a practical forester requesting him to give us his opinion of the merits of Mr. Watkin's tape. Ed.]

AERIDES VANDARUM.—A plant of this rare and curious as well as handsome Orchid is now in flower in the Kew collection. In habit it much resembles Vanda teres, and the large white flowers are produced in pairs on the stem opposite the leaves. The species was introduced from India many years ago, and was figured in the *Botanical Magazine*, t. 4982.

SOCIETIES.

ROYAL HORTICULTURAL.

March 8.—This was a small but interesting meeting, fairly well attended by the general public.

Scientific Committee.

Present: Dr. M. T. Masters, F.R.S., in the chair; Messrs. W. G. Smith, J. O'Brien, F. Pascoe, G. S. Boulger, A. W. Bennett, A. Michael, H. N. Ridley, G. Murray, G. F. Wilson, A. H. Smee, Dr. Low, Professor A. H. Church, and Rev. G. Henslow.

Spathoglottis Kimballiana Diseased.

Mr. O'Brien exhibited a leaf of this plant, apparently attacked by some fungus. It was referred to Mr. W. G. Smith for examination and report.

Pollen, Chemical Analysis of.

Professor Church gave some account of his researches in the composition of pollen-grains, *à propos* of some analyses of the pollen of Conifers lately published. He also drew attention to his analyses of Elm flowers (*Journal of Botany*, 1876, p. 73), and of the Ash (*Journal of Botany*, 1877, p. 364), showing a correspondingly large percentage of nitrogen, potash, and phosphorus pentoxide, the latter containing 7·4 times of the first element, as much as Beech scales, 7·7 times of potash, and 10·5 times as much of the last. The proportions corresponding with the more important functions of the sexual organs to that of the merely temporarily protective purpose of the scales. With regard to pollen, Professor Church mentioned that, so long ago as 1875, he began an examination of the very abundant pollen of Cupressus fragrans. On April 15 in that year he collected, with ease from a single tree, several ounces. On analysis it yielded 40·5 per cent. of moisture only—a very low proportion for a newly-formed fresh vegetable product. When dried at 212° Fahr., it contained 1·37 per cent of nitrogen (corresponding to 8·7 per cent. albuminoids), and 1·87 per cent. of oil and other matters soluble in ether. The amount of ash in the dry pollen was 3·7 per cent. One hundred parts of this ash contained no less than 20·14 of phosphoric acid and 35·34 of potash.

A vote of thanks was unanimously offered to Professor Church for his interesting communication.

The following communications were received from Mr. C. B. Plowright:—

Ustilago on Dates.

The three Dates sent herewith are affected with one of the black smuts described by Corda as Ustilago phœnicis. The spore development commences in the interior of the fruit, and in such specimens as are found in commerce the parasitic fungus is usually confined to the interior. Such specimens are not rarely to be met with amongst Dates of an inferior quality; the better samples, which of course command a higher price in the market, may be searched in vain for the fungus. The spores are globose and smooth, of a dark violet colour when seen by transmitted light. In masses they are dusky black. They measure about 4 or 5 mk. across.

Ustilago on Figs.

Some further specimens of Ustilago Ficuum, Rchdt., are also sent. It will be seen that in this species also the spore development commences in the interior of the Fig. One very rarely meets with it in those better qualities of Figs which are sold in boxes, but in what are known in the trade as "natural Figs," which are cheap Figs sent over to this country packed in matting, affected specimens are by no means uncommon. When the spores are placed in water I found no signs of germination were evinced at the ordinary temperature in winter; but when the temperature was raised to 50°—55° F. and over, they germinated in the same manner as the majority of Ustilago spores do, namely, by emitting a germ-tube into which the contents of the spore freely passed. These germ-tubes varied in length to from 20 to 160 mk, with a diameter of from 4 to 5 mk. I was unable to observe the development of secondary spores, for being unable to attend to my cultures for forty-eight hours they became dried up and spoiled. *Charles B. Plowright.*

The following descriptions with specimens were received from Mr. Wolley Dod:—

Hybrd between Narcissus Bulbocodium var. nivalis and N. triandrus.

In August, 1886, Mr. Tait, of Oporto, sent me three bulbs marked N. nivalis triandrus ×, which are now in my greenhouse, all bearing similar flowers to the one I enclose. I send with it specimens of its supposed parents, and a typical flower of N. bulbocodium for comparison. Mr. Tait, in his *Notes on the Narcissi of Portugal*, tells us that he found these supposed hybrids on the Gerez Mountains, in the north of Portugal, at an altitude of 3500 feet in flower, between April 24 and May 17. In 1885 he found three specimens, and in 1886 four. In every case they were growing where N. nivalis and N. triandrus grow together, and as far as he knows no other variety of Narcissus grows within several miles. The characters of the flowers seem nearer to N. Bulbocodium than to N. triandrus, but are intermediate between the two, and so is the colour. The flower differs from N. Bulbocodium chiefly in the following particulars:—In N. Bulbocodium—1. The conical outline of the tube is continued in the same divergent straight lines along the outline of the corona, past the point of juncture with it. 2. The divisions of the perianth are never twisted, and their inclination or angle with the corona is always less than a right angle. 3. The style, exclusive of the part within the tube, is always at least as long as the corona, sometimes twice as long, and is not (never) included within it. 4. The filaments and the style are bent visibly upwards near the end. It will be seen how the enclosed specimen of hybrid departs from the above characters, which are taken from comparison of more than fifty flowers, including six different varieties of N. Bulbocodium now flowering here.

Narcissi from Portugal.

In a reply from Mr. A. W. Tait, acknowledging the Botanical Certificate awarded to him at the last meeting, he remarked upon the hardiness of N. cyclamineus, in that it flowered in the beginning of February, although the temperature fell to 25° F.; this being the severest winter he had experienced at Oporto. He further remarks that he has recognised several of Parkinson's species among the native ones of Portugal, *e.g.*, N. Johnstoni (exhibited at the last meeting), corresponding exactly with Parkinson's N. juncifolius flore luteo reflexus (*Paradisus*, p. 92). It is rare and local.

Juniperus malformed by Gymnosporangium.

A large specimen was received from Dr. W. S. Church, which was accepted for the Natural History Museum. The Hawthorn trees in the same garden where it grew have been always badly attacked by Rœstelia.

Plants Exhibited.

Catasetum discolor, an old and often-figured species, but rarely seen, was sent by Mr. F. W. Moore, of Glasnevin.

Orchids, Malformed.

Mr. Smee brought specimens. Referred to Mr. Ridley for examination and report.

Floral Committee.

Present: G. F. Wilson, Esq., F.R.S., in the chair; and Messrs. W. Wilks, J. Douglas, J. Walker, H. Bennett, H. Herbst, G. Duffield, W. H. Lowe, J. Hudson, W. Holmes, B. Wynne, R. Dean, C. Noble, T. Baines, C. Pilcher, J. Dominy, H. Ballantine, H. M. Pollett, Major A. F. Lendy, J. O'Brien, C. H. Hill, H. Turner, W. Goldring, S. Hibberd, George Paul, and Dr. M. T. Masters.

Contrary to expectation there was an extensive show in the conservatory on Tuesday last, Camellias, Orchids, and groups of Daffodils and other hardy plants constituting the leading features.

Messrs. Wm. Paul & Son, Paul's Nurseries, Waltham Cross, staged a large and representative collection of Camellias; there were trees in pots, and twelve boxes of cut blooms. Of the red-coloured varieties C. M. Hovey was the most striking, with its large blooms of a rich crimson-red. Il Commendatore Betti was also noteworthy, the plant being a mass of flower; in colour it is lighter than C. M. Hovey. The best white, of which a tree was shown, was Montironi vera. Other varieties were Marchioness of Exeter, Candidissima, Bealii, Princess Charlotte, Cup of Beauty, Mathiotiana, alba plena, &c. (Silver-gilt Medal). Messrs. Paul & Son, Cheshunt, exhibited plants of Prunus Pissardi (certificated a short time

ago), in bloom, to show its value for forcing. The plants were literally covered with blossoms, which were white very slightly suffused with rose, and which were well shown off by the brown colour of the few leaves; a very decorative plant. Also a plant of Ilex scurtica picta, a pretty variegated spineless form.

Herbaceous plants were also shown by Messrs. Paul & Son, Cheshunt. The collection contained various varieties of Cyclamen Atkinsii and of C. coum album, besides Iris reticulata, Krelagei, Bulbocodium vernum, Crocus Imperati purpurea, Saxifraga Burseriana, and S. Frederici Augusti from the open, &c. They also showed Rosa indica, stated to be the true species and the type of the Tea Roses.

From Mr. F. Ross, gardener to Sir George Macleay, Pendell Court, Bletchingley, came cut flowers of Thunbergia Harrisi and Acacia verticillata.

A large group of varieties of Lycaste Skinneri and a few other Orchids was staged by H. Little, Esq., The Barons, Twickenham. There were about fifty pots of Lycastes, and the flowers ranged from an almost white colour to deep red. Cattleya Trianæ was well shown, and also Odontoglossum Littleanum (Silver Banksian Medal).

A new Tea Rose, The Bride, was sent by Mr. Duncan Gilmour, Sheffield. It is pale cream in colour, good in form, and certainly deserved the recognition of the First-class Certificate awarded to it

Sir Trevor Lawrence, Burford Lodge, Dorking, contributed a choice Orchid, Phaius tuberculosus var. superbiens, the rich colouring of the lip standing out well against the white of the other parts of the flower. A large plant of Anthurium carneum bearing three flowers was also shown by Sir Trevor.

De B. Crawshay, Esq., Rosefield, Sevenoaks, showed an interesting group of Orchids, which contained some fine specimens of Odontoglossum crispum, also O. Rossi majus var. rubescens, richly coloured; and Masdevallia Shuttleworthii var. xanthocorys, a remarkable looking form; Cattleya Vanneriana was represented by a fine plant well covered with large blooms, sent by W. Vanner, Esq., Camden Wood, Chislehurst.

Mr. F. Moore, Botanic Gardens, Glasnevin, exhibited an interesting collection of Lachenalias, and also a flowering spike of Catasetum discolor.

S. Courthauld, Esq., Bocking Place, Braintree, contributed a very fine plant of Cattleya Trianæ var. Courthauldi, which attracted much attention; he also sent a large cut spike of a good form of Phalænopsis Schilleriana.

Messrs. J. Veitch & Sons, Chelsea, exhibited a plant of Rhododendron La Belle, a hybrid between R. ciliatum and R. Forsterianum, for which a First class Certificate was granted; it was a plant about one foot in height, bearing white flowers with a greenish throat spotted with a darker green; Amaryllis Nestor, a large flowered form, segments rich deep crimson with triangular green tips and bases; a First-class Certificate was awarded. Amaryllis Iona, with a pale-coloured flower, and Lomaria gibba platyptera were also shown.

A collection of Chinese Primulas came from Messrs. Pope & Son, Birmingham. The plants were healthy looking, with large leaves, and well flowered.

Messrs. Collins Brothers & Gabriel, 39, Waterloo Road, London, S.E., Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, and Messrs. Barr & Son, King Street, Covent Garden, each contributed an extensive collection of Daffodils, Narcissi, Anemones, &c., for which they are famed. A Silver Banksian Medal was awarded to Messrs. Collins Brothers & Gabriel, and also to Mr. Ware; while Messrs. Barr & Son received the recognition of a Bronze Medal.

Messrs. H. Page & Sons, Teddington, staged a collection of varieties of Cyclamen persicum, comprising plants of great range in colour, well flowered, and making a brilliant show. (Bronze Medal.)

A lot of very good, large, and finely coloured blooms of Cineraria was shown by Mr. J. James, Woodside, Farnham Royal, Slough; and two small Camellias were sent by Mr. W. Gordon, Twickenham. Good specimens of Saxifraga Burseriana were sent from the Society's Gardens at Chiswick. Dendrobium nobile, a fine well bloomed plant, was exhibited by Hon. and Rev. J. T. Boscawen, Lamorran, Probus, Cornwall; and a similar plant, together with Amaryllis, came from Mr. Fitt, Cassiobury Gardens, Watford; and a few Orchids were also shown by D. Knot, Esq., Reading.

Fruit Committee.

Present: F. T. Rivers, Esq., in the chair; and Messrs. Wm. Paul, W. Warren, T. J. Saltmarsh, J. Woodbridge, G. T. Miles, S. Ford, J. Roberts, A. H. Pearson, W. Denning, T. B. Haywood, J. Fitt, J. Smith, R. D. Blackmore, P. Crawley,

The exhibits submitted to the inspection of the Fruit Committee were, unlike those for the Floral Committee, very few, the two collections of Apples being the chief items. Mr. S. Ford, Leonardslee, Horsham, Sussex, showed a collection of these fruits, his Flower of Kent, Hoary Morning, and Blenheim Orange being very fine samples, well kept, and rich in colour; Barcelona Pearmain, Adams' Pearmain, and Cockle Pippins were also very fine. A Bronze Medal was awarded here.

Messrs. Rivers & Sons, Sawbridgeworth, also showed a collection of Apples, which contained good specimens of Mannington Pearmain, Baxter's Pearmain, Boston Russet, Buckingham, and Archiduc Antoine, &c., all clean and solid.

Clean, large fruits of the Melon Apple from the open were shown by Mr. Roupell, Roupell Park, S.W., and Apple Lord of the Manor was shown by Messrs. Saltmarsh & Sons, Chelmsford.

From Mr. J. Roberts, Charleville Gardens, Tullamore, Ireland, came specimens of his white Gros Colmar Grape, but they were too much damaged for any opinion to be expressed on them.

Miscellaneous.

A new Orchid pot, "The Simplex," was exhibited by Mr. B. Looker, Kingston-on-Thames. The feature of this pot is, that a portion of the base is cut off and inserted into the remaining part, making a false bottom, and allowing a free drainage round the side as well as the centre. Various garden implements were shown by Messrs. Spear & Jackson, 22, Queen Street, E.C., and from Messrs. J. Green & Nephew, 107, Queen Victoria Street, E.C., came glass ornaments and vases for flowers, Ferns, &c. Under the title of "Burmese ware" some glass vases were shown of a remarkable shade of pale terra-cotta running into yellow, which were particularly striking and effective, and which would probably be even more so by candle-light.

The Weather.

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING MARCH 19. (AVERAGE OF THIRTY-THREE YEARS.)

March 13	42°.2	March 17	42°.7
„ 14	42°.3	„ 18	42°.8
„ 15	42°.4	„ 19	43°.0
„ 16	42°.6	Mean for the week	42°.6

THE PAST WEEK.

The following summary record of the weather for the week ending March 7, is furnished from the Meteorological Office:—

"The *weather* has been very dry in all parts of the United Kingdom; over the greater part of England cloudy or overcast skies and low temperatures have generally prevailed, with much fog or mist, while in the north and east of Scotland the weather has been fair and warm.

"The *temperature* has been below the mean in nearly all the English districts, the deficit ranging from 2° in 'England, N.W.,' to 5° over eastern, central, and southern England. In 'Ireland, N.,' and over Scotland, however, the readings have been in excess of the mean value—in 'Scotland, E.,' 4°, and in 'Scotland, N.,' 5°. The highest of the maxima, which were recorded on irregular dates, varied from 52° in 'England, S.,' to 59° in 'England, S.W.,' and to 61° in 'Scotland, E.' (at Aberdeen). The lowest of the minima, which were also registered at varying times, ranged from 21° in 'Scotland, E.,' and the 'Midland Counties,' and 22° in 'England, S.,' to 26° in 'England, N.W.,' and 'England, N.E., and to 34° in the 'Channel Islands.'

"The *rainfall* has been less than the mean in all districts; over the greater part of the kingdom the weather has been altogether rainless. At several of the English stations, however, the fogs yielded a measurable quantity of water in the guage.

"*Bright sunshine* shows a decrease in nearly all places. The percentages of the possible amount of duration ranged from 14 in 'Scotland, W.,' and 16 in the 'Midland Counties,' to 43 in 'England, S.W.,' 45 in 'Scotland, E.,' and 53 in the 'Channel Islands.' In London only 5 of the possible number of hours was recorded."

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 42° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature.		Accumulated.			
	Above or below the Mean for the week ending March 7.	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 4, 1887.	Below 42° difference from Mean since Jan. 4, 1887.
Principal Wheat-producing Districts.		Day-deg.	Day-deg.	Day-deg.	Day-deg.
0. Scotland, N. ...	5 above	25	10	+ 45	— 50
1. Scotland, E. ...	4 above	35	22	+ 58	— 31
2. England, N.E. ...	0 (aver).	14	35	+ 25	+ 31
3. England, E. ...	5 below	6	46	— 31	+ 106
4. Midland Cos. ...	5 below	6	47	— 10	+ 93
5. England, S. ...	5 below	8	43	— 23	+ 83
Principal Grazing, &c., Districts.					
6. Scotland, W. ...	2 above	24	15	+ 21	— 22
7. England, N.W. ...	2 below	10	31	+ 1	+ 52
8. England, S.W. ...	3 below	17	33	— 41	+ 80
9. Ireland, N. ...	3 above	27	9	+ 36	— 18
10. Ireland, S. ...	0 (aver.)	30	12	+ 18	+ 14
— Channel Islands	1 below	23	10	— 53	+ 40

Districts.	Rainfall.			Bright Sunshine.	
	More or less than the Mean for the Week.	No. of Rainy Days since Jan. 4, 1887.	Total Fall since Jan. 4, 1887.	Percentage of possible duration for the Week.	Percentage of possible Duration since Jan. 4, 1887.
Principal Wheat-producing Districts.	Tenths of Inch.		Ins.		
0. Scotland, N. ...	7 less	41	9.7	24	18
1. Scotland, E. ...	6 less	27	3.6	45	28
2. England, N.E. ...	4 less	22	2.0	30	27
3. England, E. ...	4 less	20	2.0	26	31
4. Midland Cos. ...	4 less	21	2.5	16	27
5. England, S. ...	4 less	21	2.5	29	25
Principal Grazing, &c., Districts.					
6. Scotland, W. ...	7 less	32	7.8	14	21
7. England, N.W. ...	6 less	25	3.8	23	25
8. England, S.W. ...	7 less	26	3.6	43	31
9. Ireland, N. ...	6 less	30	5.4	20	25
10. Ireland, S. ...	7 less	28	5.8	22	29
— Channel Islands	6 less	27	3.3	53	40

Obituary.

WILLIAM BIRCH.—At the good old age of seventy-nine, after a brief illness, has passed away to his long home William Birch, for nearly fifty years kitchen garden-foreman at Drayton Manor. A better kitchen gardener or a finer sample of a British workman it has never been my fortune to meet. Hale, hearty, earnest, and strong, with his heart in his work, methodical in all his ways, and punctual to a fault, and withal cheerful and as fond of a joke as any one—a type of man, I am afraid, that is now swiftly passing away. I owe this slight tribute to his memory for the faithful assistance he rendered me during the time I was gardener at Drayton. *O. Thomas, Chatsworth Garden, March* 12.

Notices to Correspondents.

Intelligent Readers, do please Note.—*Letters relating to* Advertisements, *or to the supply of the Paper, should be addressed to the* Publisher, *and not to the Editor.*

*** All communications intended for publication should be addressed to the "*Editor.*" Such communications should be *written on one side only of the paper*, and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Bedle's Intermediate Carrot: *W. R.* We know of no variety of this name, and are unable to find it mentioned in any gardening work or list of seeds.

Book: *E. O. G. Epitome of Gardening*, published by Messrs. Black, Edinburgh.

Drainage: *Young Beginner.* The reason that drainage is insisted on is because water, air, and sufficient heat are the first requisites for the root; therefore if the condition of the soil is such that these requisites are not fulfilled cultivation becomes impossible, even if the soil contains a sufficiency of the phosphates, potass, and nitrates. Drainage, then, puts the soil into the best state for nourishing the plant.

Grant Allan: *A. D. W.* Apply to Messrs. Macmillan, Bedford Street, Covent Garden.

Hay: *Beginner.* When to cut hay depends on circumstances, but if you do so before the seeds begin to form, you will do well, because the plant is richest in nutritive matter just before or at the flowering season, after which period the food goes to the seeds, which may readily be shed, while the Grass becomes little better than fibre. The same applies to Clover and all forage crops.

Names of Plants: *C. H. P.* 1, Pittosporum undulatum; 2, Xylophylla latifolia; 3, Reineckia carnea; 4, Rogiera amœna.—*G.* 1, Glechoma hederacea, Ground Ivy. We never before heard it called "Gill run on the ground." 2, Nicotiana affinis; 3, Pteris cretica var.; 4, Tradescantia discolor; 5, Pteris serrulata; 10, Polypodium vulgare. The others are such wretchedly shrivelled scraps that we cannot undertake to try to name them.—*Amateur.* 1 and 2, absent; 3, Cephalotaxus drupacea; 4, Mahonia repens; 5, Ruscus aculeatus, Butcher's Broom; 6, Juniperus virginiana, Red Cedar.—*Young Journeyman.* Eupatorium Weinmannianum, not "a weed," but a desirable greenhouse plant for supplying cut flowers.—*G. W. W.* 1, Dendrobium superbum var. gigantea (macrophyllum giganteum of some gardens); 2, Odontoglossum grande.—*Westfield.* A very fine Dendrobium Wardianum belonging to Low's type.—*G. H.* Oncidium Cavendishianum.—*Cape.* 1, Ixia speciosa; 2, Lapeyrousia corymbosa; 3, Babiana plicata; 4, Watsonia punctata; 5, Ixia maculata; 6, Gladiolus (Schweiggera) arenarius; 7, Ixia scariosa; 8, Micranthus plantagineus; 9, Gladiolus sp.; 10, Sparaxis sp.

Nepenthes: *Westfield.* You would have a better chance if you only included one Nepenthes.

Phylloxera: *X.* This was first noticed in Europe in the Department of Gard, Southern France, in 1805.

Plants for an Unheated Greenhouse: *J. G. J.* For flowering plants you could have Camellias of any varieties, hardy species of Rhododendron, as ciliatum, hirsutum, alta-clarense, Nobleanum, and varieties of R. hybridum; Azalea amœna; Pittosporum Tobira, P. undulatum; Hydrangea hortensis, winter flowering Carnations, early mule Pinks, Chrysanthemums, Violets, Polyanthuses, alpine and show Auriculas hardy Primulas in pots; bulbs, such as Hoop-petticoat Narcissus; any species and varieties of the Narcissus family; Freesia refracta alba, Tulips, Hyacinths, &c. These would make the house gay in winter and spring, and in summer and autumn there are innumerable species of half-hardy annuals and perennials cheap and easily obtained. Hardy Ferns planted under the stage, as well as grown in pots, would add a feature of interest to the house. The creepers might consist of Lapageria rosea and L. alba; Roses Catherine Mermet, Cloth of Gold, Gloire de Dijon, and Maréchal Niel; Passiflora cœrulea, Mandevilla suaveolens, and Myrtles.

Pomeloe, or Shaddock: *Cape.* A species of Citrus.

Potatos: Nine Kinds for Rotation: *Reader.* We can give you a selection, but cannot tell if they will suit your climate and soil. We do not think you can do without the Early Ashleaf—the true smooth tuber, not the Egyptian Ashleaf, which is as good and as early, but which has a warty tuber; Beauty of Hebron might be chosen to succeed that sort; then Extra Early Vermont, Seedling Woodstock Kidney, Schoolmaster, Vicar of Laleham, Reading Hero, Magnum Bonum, and The Dean. In this list quality for the table stands before mere size.

Ruscus hypoglossum: *A. H. S.* This is not native to New Zealand, but must have been introduced there.

Transplanting Old Vines: *H. B.* If the roots are in good condition the experiment will repay you for the trouble of digging out the majority of them; but this is not the time of year, such work being best performed just before the fall of their foliage.

Vine: *G.* Without knowing the local conditions we cannot answer your question. Perhaps the wood was not well ripened last year.

Vines Bleeding: *A. B.* No injury is likely to accrue, the sap exuded being merely the water drawn from the roots by capillary attraction—probably; as soon as leaf growth commences the "bleeding" ceases, or, as in your case, by applying styptic.

CATALOGUES RECEIVED.

James Dickson & Sons, 108, Eastgate Street, Chester—Farm Seeds.

E. P. Dixon, 57, Queen Street, and High Street, Hull—Farm Seeds.

Kent & Brydon, Darlington—Farm Seeds.

Waite, Nash & Co., 79, Southwark Street, London, S.E.—Wholesale List of Agricultural Seeds.

James Carter & Co., 237 and 238, High Holborn, London, W.C.—Farmers' Handbook.

William Paul & Son, Crossflat Nursery, Paisley—Herbaceous and Florists' Flowers.

Communications Received.—R. McL.—G. A. M.—L. Kienast, Zölly (many thanks; next week if possible).—J. van V., Brussels.—Professor Oudemanns, Amsterdam (many thanks).—J. E. (next week).—J. T. B.—H. G. S.—G. D.—J. R. J. (next week, if possible).—K. Adlam, Natal (many thanks).—G. B. A.—C. P.—F. G. T.—L. P. C. B.—A. T.—K. L. D.—Professor Henriques.—C. J.—W. S.—Professor Oliver.—W. H.—A. H. S.—A. D. W.—J. Guadia.—W. H. H.—B. D. J.—Jas. Carter & Co.—G. A. M.—W. S.—D. C., Orleans (with thanks).—E. S. Goff.—H. E.—J. H. P.—W. N.—J. O'B.—J. B.—W. S.—G. W. R.—J. R. J.—W. W.—W. M. B.—H. G. R.—F. S.—A. H. S.—J. Blackburne.—J. H. H.—T. F. Rudolf Seidel.—W. C.—H. J. C.—W. J. M.—C. W. D.—R. W. A.—J. Watson.—Casimir de Candolle.—T. Smith, Timaru, N.Z.—R. B.—A. B.—H. H. D'O. (next week).

Markets.

COVENT GARDEN, March 10.

Business still very quiet, with no alteration in prices. Large supplies of Cucumbers reaching us, and only cleared at very low prices. *James Webber, Wholesale Apple Market.*

Fruit.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Apple, ½-sieve	1 6– 5 0	Pears, per dozen	2 0– 4 0
— Nova Scotia, brl.	8 0–12 0	Pine-apples, Eng., lb.	1 0– 1 6
Grapes, per lb.	2 0– 6 0	— St. Michael. each	1 6– 6 0
Kent Cobs, 100 lb.	65 0 70 0	Strawberries, per oz.	1 0– ...
Lemons, per case	12 0–21 0		

Vegetables—Average Retail Prices.

	s. d. s. d.		s. d. s. d.
Artichokes, per doz.	6 0– ...	Mushrooms, punnet	1 6– 2 6
Asparagus, French, per bundle	18 0– ...	Mustard and Cress, punnet	0 4– ...
— English, per 100	10 0– ...	Onions, per bushel	4 0– ...
Beans, Kidney, lb.	4 0– ...	Parsley, dozen bunch	8 0– ...
Beet, red, per dozen	1 0– 2 0	Peas, per quart	6 0– ...
Brussels Sprouts, lb.	0 4– ...	Potatos, per cwt.	4 0– 5 0
Carrots, per bunch	0 6– ...	,, kidney, per cwt.	4 0– 5 0
Cauliflowers, per doz.	3 0– ...	Rhubarb, per bundle	0 6– ...
Celery, per bundle	1 6– 2 0	Seakale, per punnet	2 6– ...
Cucumbers, each	0 9– 1 6	Shallots, per lb.	0 3– ...
Endive, per dozen	1 0– 2 0	Spinach, per bushel	5 0– ...
Green Mint, bunch	1 0– ...	Sprue, bundle	1 0– ...
Herbs, per bunch	0 4– ...	Tomatos, per lb.	2 6– ...
Leeks, per bunch	0 3– ...	Turnips, bunch	0 4– ...
Lettuce, per dozen	1 0– 1 6		

Potatos.—Markets very heavy, at the following prices:—Regents, 80s. to 100s.; Magnums, 70s. to 110s. per ton.

Plants in Pots.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz.	6 0–18 0	Ferns, in variety, per dozen	4 0–18 0
Arum Lilies, dozen	18 0–24 0	Foliage plants, various, each	2 0–10 0
Azaleas, per dozen	24 0–42 0	Genistas, per doz.	10 0–12 0
Cinerarias, per doz.	9 0–12 0	Hyacinths, 12 pots	6 0– 9 0
Cyclamens, dozen	12 0–24 0	Lily-of-Val., 12 pots	12 0–24 0
Cyperus, per dozen	4 0–12 0	Marguerite Daisy, per dozen	6 0–12 0
Daffodils, 12 pots	9 0–10 0	Myrtles, per dozen	6 0–12 0
Dracæna terminalis, per dozen	30 0–60 0	Palms, in var., each	2 6–21 0
— viridis, per doz.	12 0–24 0	Pelargoniums, scarlet, per doz.	6 0– 9 0
Epiphyllum, dozen	18 0–30 0	Primula sinensis, per dozen	4 0– 6 0
Erica hyemalis, per dozen	12 0–24 0	Solanums, per dozen	9 0–12 0
— various, dozen	9 0–24 0	Spiræa, per dozen	12 0–24 0
Euonymus, in var., per dozen	6 0–18 0	Tulips, 12 pots	6 0– 8 0
Evergreens, in var., per dozen	6 0–24 0		
Ficus elastica, each	1 6– 7 0		

Cut Flowers.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Arum Lilies, 12 blms.	3 0– 5 0	Mignonette, 12 bun.	3 0– 6 0
Azaleas, 12 sprays	0 6– 1 0	Pelargoniums, scarlet, 12 sprays	0 9– 1 0
Bouvardias, per bun.	0 6– 1 0	Primulas, single, 12 bunches	4 0– 6 0
Camellias, 12 blooms	2 0– 4 0	— double, 12 sprays	1 0– 1 6
Carnations, 12 blms.	1 0– 3 0	Roses, Tea, per doz.	2 0– 4 0
Cyclamen, 12 blooms	0 4– 0 9	— coloured, dozen.	3 0– 6 0
Daffodils, 12 blooms	0 6– 1 6	— red, French, doz.	1 6– 2 0
Eucharis, per dozen	3 0– 6 0	— Saffrano, Fr. doz.	1 0– 1 6
Gardenias. 12 blooms	12 0–30 0	Tropæolums, 12 bun.	1 0– 2 0
Hellebores, or Christmas Roses, 12 bls.	0 4– 1 0	Tuberoses, 12 blms.	2 6– 4 0
Heliotropes, 12 spr.	0 6– 1 0	Violets, 12 bunches	1 6– 2 0
Jasmine, white, bun.	0 6– 0 9	— Parme, French, per bunch	3 0– 4 6
Lilies of the Valley, 12 sprays	0 9– 1 6	— Czar, Fr., bunch	1 6– 2 0
Marguerites, per 12 bunches	3 0– 6 0		

SEEDS.

London: *March* 9.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., report a good seasonable all-round sowing demand. There is no material alteration in the values of Clovers and other seeds, which still stand at a remarkably low level. Firm rates prevail on the Continent, whilst the arrivals from America are insignificant. For spring Tares there is an improved demand, but quotations continue exceedingly moderate. There is but little doing in Mustard; Hemp and Canary are also dull and neglected. Blue Peas and Haricot Beans remain inanimate.

FRUIT AND VEGETABLES.

Columbia (East London): *March* 8.—Average supplies of all kinds of vegetables. Trade moderate at undermentioned rates:—Brussels Sprouts, 1*s.* 6*d.* to 2*s.* 6*d.* per sieve; Turnip-tops, 2*s.* to 2*s.* 6*d.* do.; Curly Kale, 1*s.* 6*d.* to 2*s.* do.; Sprouting Broccoli, 2*s.* to 2*s.* 6*d.* do.; Savoys, 1*s.* 6*d.* to 3*s.* 6*d.* per tally; Greens, 2*s.* to 3*s.* 6*d.* per dozen bunches; Turnips, 1*s.* 6*d.* to 2*s.* do.; Carrots, 1*s.* 6*d.* to 2*s.* 6*d.* do.; Celery, 9*d.* to 1*s.* 3*d.* per bundle; Beetroots, 4*d.* to 6*d.* per dozen; English Onions, 5*s.* to 5*s.* 6*d.* per cwt.; foreign do., 3*s.* 6*d.* to 4*s.* 3*d.* per bag of 110 lb.; Carrots, 14*s.* to 24*s.* per ton; Mangels, 11*s.* to 13*s.* do.; Apples, American, 13*s.* to 18*s.* per barrel.

POTATOS.

King's Cross: *March* 7.—The ruling prices in the station yard for the week ending March 5 were as follows:—Magnum Bonums, good samples, Bedford, 65*s.* to 70*s.*; do. Blackland, 57*s.* 6*d.* to 62*s.* 6*d.*; do. Lincolns, 60*s.* to 67*s.* 6*d.*; do. Kents, 75*s.* to 80*s.*; do. Yorks, 82*s.* 6*d.* to 90*s.*; do. Scotch, 100*s.* to 110*s.* per ton. Regents, Lincolns, 60*s.*; do. Kents, 80*s.* to 90*s.*; do. Yorks, 80*s.* to 85*s.*; do. Scotch, 90*s.* to 95*s.* per ton. Beauty of Hebron, Kents, 100*s.* to 110 per ton. Reading Heroes, Lincolns, 60*s.* to 65*s.* per ton. Champions, Lincolns, 62*s.* 6*d.*; do. Kents, 65*s.*; do. Scotch, 65*s.* to 70*s.* per ton.

During last week 489 trucks arrived at King's Cross, and 527 were emptied; 101 arrived to-day, and 637 trucks are reported in stock. These figures show that the demand is in excess of the supply. A very steady trade and prices firm. Choice samples scarce and quickly bought up. A good inquiry for Hebron seed. The general opinion is, that we shall have an improvement in prices as compared with last month—as best samples are becoming so rare, and are being every day sought after. *F. W. Foord.*

Imports.—The imports into London last week consisted of 845 bags from Hamburgh, 1017 Ghent, 22 Ostend, 90 Boulogne, 8 sacks Rotterdam, and 28 cases 56 boxes Malta.

COWAN'S SPECIALTIES.

CHOICE FLOWER SEEDS.

CINERARIA hybrida grandiflora (Garston variety), unsurpassed for size and form of flowers, and dwarf habit of plants, 1*s.* 6*d.* and 2*s.* 6*d.* per packet.

PRIMULA Sinensis Fimbriata alba, unsurpassed for size and substance of flower, 2*s.* 6*d.* per packet.

PRIMULA sinensis Fimbriata rubra, unsurpassed for size, colour, and substance of flower, 2*s.* 6*d.* per packet.

PRIMULA sinensis Fimbriata, extra fine mixed, 1*s.* 6*d.* and 2*s.* 6*d.* per packet.

CYCLAMEN persicum giganteum sanguineum, new, the most brilliant coloured Cyclamen yet introduced. Per packet, 2*s.* 6*d.*

CYCLAMEN persicum grandiflora, flowers of great size and substance, 2*s.* 6*d.* per packet.

CYCLAMEN persicum, saved from the best prize strain, 1*s.* 6*d.* and 2*s.* 6*d.* per packet.

BEGONIA, tuberous rooted, from the very best strains only, 2*s.* 6*d.* per packet.

CALCEOLARIA, extra choice strain embracing every shade of colour, 1*s.*, 1*s.* 6*d.*, and 2*s.* 6*d.* pkt.

CARNATION and Picotee from the very finest prize varieties, 1*s.*, 1*s.* 6*d.*, and 2*s.* 6*d.* per packet.

Collections of Choice Flower Seeds for Small Gardens, 5*s.*, 10*s.* 6*d.*, 15*s.*, and 21*s.*

FLOWER SEEDS of all kinds, of the best quality and at the cheapest rates. See illustrated and descriptive CATALOGUE, which will be sent post-free on application.

VEGETABLE SEEDS of the very best quality, and at the cheapest rates. See illustrated and descriptive CATALOGUE.
Complete collections for small Gardens, 10*s.* 6*d.*, 21*s.*, 31*s.* 6*d.*, 42*s.*, and upwards. All seeds carriage free.

ORCHIDS, an immense stock, suitable for cool, intermediate, and hot houses, and fresh importations are constantly being received.
12 best varieties for cool house, 24*s.*, 30*s.*, 42*s.*, and 60*s.*
12 ,, ,, intermediate house, 24*s.*, 30*s.*, 42*s.*, and 60*s.*
12 ,, ,, hot-house, 24*s.*, 30*s.*, 42*s.*, and 60*s.*
CATALOGUES with full particulars on application.

ROSES.—Splendid climbing Roses in 7-in. pots, with two or three shoots, 8 feet to 10 feet long, 3*s.* 6*d.* each: Gloire de Dijon, Reine Marie Henriette, Celine Forestier, Cheshunt Hybrid and Belle Lyonaise.

Splendid climbing Roses in 7-in. pots with one and two shoots, 6 to 8 feet long, 2*s.* 6*d.* each: Gloire de Dijon, Reine Marie Henriette, Cheshunt Hybrid, Celine Forestier, Belle Lyonaise, and Waltham Climber, No. 2.

Splendid Dwarf Tea Roses, in 7-in. pots specially prepared for winter flowering in about 100 varieties, including Isabella Sprunt, Homer, Perle de Lyon, and Mrs. Bosanquet, 2*s.* 6*d.* and 3*s.* each, according to size. List on application.

VINES.—In the following and other varieties, unsurpassed by any in the country:—

Black Alicante, Black Hamburgh, Barbarossa, Buckland-Sweetwater, Foster's Seedling, Golden Queen, Gros Coleman, Gros Guillaume, Mill Hill, Hamburgh, Lady Downe's Seedling, Madresfield Court, Muscat of Alexandria. Strong planting Canes, 5*s.* each; strong fruiting Canes, 7*s.* 6*d.* and 10*s.* 6*d.* each.

The Company have an immense stock of all the above, and only really good plants will be sent to any who may favour the Company with their orders; and, should the plants sent not be satisfactory, they may at once be returned. Descriptive lists on application.

COWAN'S VINE AND PLANT MANURE.

—The Best Manure for Vines and Fruit Trees of all kinds and also for Pot Plants. Prices as follows:—

Bags containing:—	1 cwt.	½ cwt.	¼ cwt.
	18*s.*	9*s.* 6*d.*	3*s.*

Tins containing:—	7 lb.	2½ lb.
	2*s.* 6*d.*	1*s.*

Quantities of ½ ton and upwards sent carriage free. Cash or reference from unknown Correspondents.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,
THE VINEYARD and NURSERIES
GARSTON, LIVERPOOL.

S. SHEPPERSON,

FLORIST and SEEDSMAN,

PROSPECT HOUSE, BELPER, DERBYSHIRE,

Begs to inform the readers of this Paper that he is prepared to execute orders for the following Plants, all of which are of the very finest possible strains that money can buy. They have all been grown on the Derbyshire Hills, and are therefore very hardy, strong, and warranted to succeed and bloom well. All carriage free for cash with order.

DESCRIPTIVE LIST of Florist Flowers 4d. stamps, or free to customers.

PANSIES.—A specialty, probably the best collection in England; the cream only of the most noted raisers, the latest new sorts, and the winners at all the great shows. Good plants, correctly named, show or fancy. Twelve for 3*s.*, twenty-five for 5*s.* 6*d.*, 100 varieties for 20*s.* Postal order free.

HOLLYHOCKS.—Chater's very finest and most select strains. Twelve varieties for 2*s.* 6*d.*, six for 1*s.* 6*d.*; six extra strong for 2*s.* Postal order free.

CANTERBURY BELLS.—Unrivalled collection, grand new colours; double and single telescopes, candelabrum, and other new forms. Twelve good plants, to bloom well, for 1*s.* Postal order free.

CHRYSANTHEMUMS.—A specialty. The best and most distinct varieties, large-flowered, incurved, reflexed, Japanese, early and late bloomers, pompons, &c., including the grand new and distinct forms by Lemoine and other raisers. Twelve distinct varieties, named, well rooted plants, 2*s.*; twenty-six for 4*s.*, free.

CARNATIONS.—Grenadin, the new German scarlet; a fine decorative and distinct variety. Early and free bloomer. Twelve for 1*s.* 6*d.*, six for 1*s.*, free.

PHLOXES.—Unrivalled collection, early and late varieties, including the latest new Continental and Scotch named varieties. Twelve distinct sorts, 3*s.*, six for 1*s.* 8*d.*, free.

CARNATIONS, PICOTEES, and CLOVES.—Strong 2-yr. old plants, from finest Show flowers only; will give a mass of bloom. Twelve beautiful varieties for 2*s.* 6*d.*, six for 1*s.* 6*d.*, free.

POLYANTHUS.—The finest strain grown; fine large trusses and blooms, and splendid colours. Twelve for 1*s.*, twenty-six for 2*s.*, free.

PINKS.—Beautiful pure white garden, deliciously scented. Good strong plants, to bloom well, six for 1*s.*, twelve for 1*s.* 6*d.*, free.

CARNATIONS, PICOTEES, and CLOVES.—Beautiful self, striped, and spotted varieties, sweetly scented, all strong well rooted layers. Twelve distinct sorts, named, 4*s.*, free.

GEUM.—The new double scarlet, equal to a double Geranium, quite hardy, free bloomer. Twelve for 1*s.*, twenty-five for 2*s.*, free.

AURICULA.—Pure snow-white, one of the most beautiful hardy spring flowering plants in cultivation. Two for 1*s.*, free.

SWEET WILLIAMS.—Auricula-eyed; Hunt's improved, Barlow's strain, double varieties, extra dark and other fine strains. Good blooming plants, 1*s.* per dozen, free.

FOXGLOVES.—Gloxinia-flowered; Dean's grand new large spotted varieties; very fine. Twelve for 1*s.* 6*d.*, six for 1*s.*, free.

DELPHINIUMS.—Distinct hardy border flowers. Six good blooming plants for 1*s.* 6*d.*, twelve for 2*s.* 6*d.*, free.

AURICULA.—The old-fashioned single yellow, most deliciously scented, soon bloom. Six for 2*s.*, two for 1*s.*, free.

POLYANTHUS, Novelty; beautiful new white. Strong plants, full of bloom-buds. Twelve for 1*s.* 6*d.*, six for 1*s.*, free.

COLLECTION of twelve HARDY BORDER PLANTS, distinct and very fine varieties, 2*s.*, free.

WALLFLOWERS.—Double German, Cannell's Bright Maroon, Ware's Brilliant Red, Crawford Beauty, Carter's Old Gold, Belvoir Castle, Harbinger, and Covent Garden Dark. 1*s.* per dozen, free.

STRAWBERRY PLANTS.—Selected crowns, transplanted, Black Prince, Improved Brown's Wonder, Alpha, Pauline, Sabreur, Vicomtesse H. de Thury, Duke of Edinburgh, and other extra sorts. 3*s.* per 100, free.

STRAWBERRY King of the Earlies, Mr. Laxton, grand new early variety, 5*s.* per 100, free. Also The Captain (Laxton), 1*s.* per dozen, free.

S. SHEPPERSON,

Florist and Seedsman,
PROSPECT HOUSE, BELPER,
DERBYSHIRE.

BEAUTIFUL LAWNS:

HOW TO MAKE AND KEEP THEM.

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New Pamphlet, Gratis and Post-free.

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BEST LAWN SEED

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Reading Evergreen Lawn Prescription,

Prepared on a Scientific Basis.

Price 1s. per lb.; 10 lb. carriage free.

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SHARPE'S ST. VINCENT MELON.

Finest Scarlet-flesh Melon grown.

1st Prizes at York, Nottingham, Hull, Leeds, Grantham.

Raised by Mr. Melville.

The fruit is beautifully netted, large roundish-oval, skin light-orange, flesh of great thickness, rich, melting, and of delicious flavour. It is early, a free setter, and a strong robust grower. 2*s.* 6*d.* per sealed packet.

TRADE PRICE ON APPLICATION.

CHARLES SHARPE & CO.,
SEED MERCHANTS, SLEAFORD.

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NEW CHRYSANTHEMUMS

Direct from Japan, and our own magnificent Seedlings.

Fourteen First-class Certificates awarded to us in 1886.

WE have much pleasure in announcing that we offer £20 for cut blooms to be competed for at the November Show, held at the Royal Aquarium, in the following manner:—

£10 for the 1st Best.	£3 for the 3d Best.
£5 for the 2d Best.	£2 for the 4th Best.

For the following varieties, plants ready early in April:—

Albert Wood	Lady Cave	Mr. Matthew
C. L. Teesdale	Mr. C. Orchard	Mrs. Castle
Edwin Molyneux	Mr. H. Cannell	Mrs. B. Wynne
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For full particulars see the National Chrysanthemum Society's Schedule and our CATALOGUE—the best, most complete, and correct on the whole family of Chrysanthemums. We have also the best kept collection, and send all over the world.

JUDGING BY BALLOT!

It is also with very great pleasure we announce that the above will be judged by our long-desired mode—that is to say, each stand is to bear a number only, and a small card will be sent to eighteen experts for them to record and affix their decision and signature; then slip the card into a box, and at 4 o'Clock P.M. the President and Officers count the votes and announce the awards. This system will unquestionably prove the greatest possible boon to exhibitors at all horticultural exhibitions.

H. CANNELL & SONS,

THE HOME OF FLOWERS,
SWANLEY, KENT.

CHEAP PICEA NORDMANNIANA, 1½ to 2 feet, 10s. per dozen; 2 to 2½ feet, 15s. per dozen; 2½ to 3 feet, 24s. per dozen; 3 to 3½ feet, 30s. per dozen. All EVERGREENS and FRUIT TREES cheap; CURRANTS and GOOSEBERRIES from 7s. 6d. per 100. 25 per cent. discount allowed for cash to clear. For LIST apply
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DWARF ROSES, on Seedling Brier. First-class Plants, best sorts, in Tea, Bourbon, and H.P., 20s. per 100, or 200s. per 1000; 2d class plants, 12s. per 100, or 120s. per 1000.
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80,000 EVENING PRIMROSES, 12s. 6d. per 100.
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15,000 TOMATOS, named, 1s. per dozen.
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Special offer of Light Brown ORCHID PEAT, full of Pure Bracken fibre; also a good GENERAL PEAT. Quotation with sample on application to
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Sole Agent for the Continent—E. J. Voûte, Zeist, Holland.

HORTICULTURAL SOILS, MANURES, SUNDRIES, and BERKSHIRE POTTERY. Catalogue free per post, of every Horticultural Requisite.
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TELEGRAMS—"FLORICULTURE, LONDON." Established 1854.

PEAT—LOAM—SAND.—50 Acres Light Brown PEAT, full of fibre, 9s. per yard, in truckloads. Yellow Fibrous LOAM, best in England), 10s. per ton, in truckloads. SILVER SAND, 10s. per ton, in truckloads.
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Packets, 1s. and 2s. 6d. each, post-free.

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PEAT and SAND.—Light Brown PEAT for Nursery and Greenhouse Work, in four-ton trucks of 10 yards each, at 10s. per yard. In bags at 2s. 6d. per bag. Rhododendron and American Plant Beds, at 15s. per ton. Orchid Peat, 5s. per bag. Fresh SPHAGNUM, 7s. 6d. per bag. SILVER SAND, coarse or fine, 13s. per ton.
WALKER AND CO., Farnboro' Station, Hants.

FERTILITY,
The Best Garden Manure.
In Tins, 2 lb., **1s.** *Larger quantities are charged less.*
MILLER & JOHNSON, 30, Mark Lane, E.C.
Ground BONES, FISH GUANO, POTASH, CRUSHED HOOFS and HORNS, and all other MANURES, at lowest prices.

JENSEN'S
NORWEGIAN
FISH-POTASH GUANO
has given splendid results with
VINES ROSES, CHRYSANTHEMUMS, AND TENNIS LAWNS.

The following Analysis is guaranteed:—

7 per cent. Ammonia.	20 per cent. Phosphates.
15 per cent. Potash.	10 per cent. Magnesia.

Only 5 per cent. Moisture.

RETAIL PRICES, CARRIAGE PAID.
2 lb. Tin, 1s.; Bags, 7 lb., 2s.; 14 lb., 4s.; 28 lb. 6s. 6d.; 56 lb., 10s. 6d.; 1 cwt., 16s.; 2 cwt., 30s. Bags free.

Write for Testimonials and Directions for Use.

J. JENSEN & CO., Ld.,
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GARDEN REQUISITES.
COCOA-NUT FIBRE REFUSE.
4d. per bushel; 100 for 25s.; truck (loose, about 2 tons), 40s.; 4-bushel bags, 4d. each.
LIGHT BROWN FIBROUS PEAT, 5s. 6d. per sack; 5 sacks, 25s.; sacks, 4d. each.
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COARSE SILVER SAND, 1s. 9d. per bushel; 15s. per half ton; 26s. per ton, in 2-bushel bags, 4d. each.
YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1s. per bushel
SPHAGNUM MOSS, 8s. 6d. per sack.
MANURES, GARDEN STICKS, VIRGIN CORK, TOBACCO CLOTH, RUSSIA MATS, &c. Write for Price LIST.—**H. G. SMYTH**, F.R.H.S., 21, Goldsmith's Street, Drury Lane (lately called 17A, Coal Yard), W.C.

GENUINE GARDEN REQUISITES
As supplied to the Royal Gardens.
BEST COCOA-NUT FIBRE REFUSE, 1s. 3d. per sack; 10 for 10s.; 20 for 18s.; 30 for 25s.; sacks included. Two ton trucks 25s., free on rail. Best brown fibrous Kent PEAT, 5s. per sack; 5 for 22s. 6d. Best black fibrous PEAT, 4s. 6d., per sack; 5 for 20s. Coarse Bedfords. SILVER SAND, 1s. 6d. per bushel; per ton, 25s. Pure LEAF MOULD, yellow fibrous LOAM, PEAT MOULD, 1s. per bushel. Potting composts, 5s. per sack. Fresh SPHAGNUM MOSS, 6s. per sack. Charcoal, Bones, Guano, &c. ARCHANGEL and PETERSBURG MATS from 12s. to 21s. per dozen. Raffia, Sticks, and Labels. SPECIALITE TOBACCO PAPER, 8d. per lb.; 28 lb. for 18s. Finest TOBACCO CLOTH, 8d. per lb.; 28 lb. for 18s. Price List sent free.—W. HERBERT AND CO., Hop Exchange Warehouses, Southwark Street, London, S.E.

MECHI'S SOOT AND SEWAGE MANURE.
A dry powder, carefully manufactured by Mechi's process,
WHICH IS DISTINCT FROM ALL OTHERS.
The very best Manure for Roots, Grass, Potatos, Wheat, Barley, Oats, Turnips, Mangels, Fruit, Vegetables, Hops, &c.
DESTROYS WIREWORMS, SLUGS, INSECTS, and GRUBS.
35s. per Ton loose; 40s. per Ton in bags; 4s. per Cwt. in bag.
Delivered Free on Rail or Boat.
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Post-office Orders payable at Mark Lane.
69 and 70, MARK LANE, LONDON, E.C.

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GATERELL & SON, RINGWOOD, HANTS,
Are now prepared to receive Orders for the above.
GOOD SOUND PEAT, very fibrous, for Orchids, in sacks only; do., for Stove, Greenhouse, Hardwooded Plants, and Rhododendrons, in any quantity.
GOOD YELLOW FIBROUS LOAM, Coarse and Fine SILVER SAND, SPHAGNUM, &c.
Special low terms to the Trade. Price List on application.

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TWO PRIZE MEDALS.
Quality, THE BEST in the Market. (All sacks included.)

PEAT, best brown fibrous ...	5s. per sack;	5 sacks for 22s. 6d.
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PEAT, extra selected Orchid	5s. 6d. ,,	5 sacks for 25s.
LOAM, best yellow fibrous ...	1s. per bush., 3s. per sack. (sacks included).	
PREPARED COMPOST, best		
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SILVER SAND, coarse, 1s. 6d. per bush., 14s. half ton, 24s. ton.		
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CHUBB'S "PERFECT" FERTILISER, the Best Food for all kinds of Plants, Flowers, Fruits, Vegetables, &c. ...	Tins. 1/6	7lb. 3/-	14lb. 5/-	28lb. 8/-	56lb. 14/-	1 cwt. 22/-
CRUSHED BONES, best quality		1/2	2/-	3/6	6/-	12/-
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In bags.

HORTICULTURAL CHARCOAL, ditto, 2s. 6d. per bushel.
COCOA-NUT FIBRE REFUSE (by Chubb's special process), sacks, 1s. each; 10 sacks, 9s.; 15 sacks, 13s.; 20 sacks, 17s.; 30 sacks, 25s.; 40 sacks, 30s. Truck-load, loose, free on rail, 25s. Limited quantities of G., special quality, granulated, in sacks only, 2s. each. Terms, strictly Cash with order.

CHUBB, ROUND & CO.,
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To Market Gardeners, &c.
To Grow fine Vegetables and Flowers, Gardeners should use
SULPHATE OF AMMONIA.
One trial will prove the great value of this Manure, and ensure its constant use hereafter. It can be applied either separately or mixed with ordinary stable or farmyard manure. Rose Trees and Garden Plants are much benefited by being watered with a weak solution once or twice a week. Instructions on application, post free. Price free on rail at Sheffield, 12s. 6d. per cwt., or 7s. per 56 lb. P. O. Orders payable to The MANAGER, Sheffield Gas Company, Sheffield.

NOTICE TO THE TRADE.—We shall be pleased to submit sample of our pure Blood, Phosphatic, and Alkaline GRASS MANURE for Parks and Cricket Grounds. Price on enquiry.
To intending Tobacco Growers.—Please send for sample of our POTASH MANURE for the Tobacco Plant, at £7 10s. per ton.
Our special Grass, Potato, Fruit, and Plant MANURES; PEATS, SOILS, &c., are offered in bulk at rates to suit all requirements.
W. WOOD AND SON, Manufacturers, Wood Green, London, N.

BEESON'S MANURE is the best for all Horticultural Purposes. Sold in tins, 1s., 2s. 6d., 5s. 6d., and 10s. 6d., or 1 cwt. bags, sealed, 13s. each. By all Nurserymen or Seedsmen, or direct from Carbrook Bone Mills, Sheffield. Also pure CRUSHED UNBOILED BONES, any size, and guaranteed of the best quality.

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W. WOOD AND SON are now cutting from THE NEW ESTATE (the only estate celebrated for its special quality of ORCHID PEAT).
Send for Sample. Special Quotations.
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ROTTED TURF.—Free on rail at Tunbridge Wells, 10s. per yard.
C. ADIE, Tunbridge Wells.

NATIVE GUANO.—Price £3 10s. per ton in bags; lots under 10 cwt., 4s. per cwt. Sample bag (1 cwt.) sent, carriage paid, to any station in England on receipt of P.O. for 5s.
Extracts from *Eleventh Annual Collection of Reports*: NATIVE GUANO for POTATOES, VEGETABLES, and FRUIT TREES.—J. SMITH, hd. gr. to Hon. Earl of Rosebery, Mentmore. Used for Potatoes, Peas, Lettuce, Onions, Turnips, Fruit Trees, &c. Results: Most satisfactory in every instance. C. J. WAITE, gr. to Col. Hon. W. P. Talbot, Glenhurst, Esher: Have a very high opinion of your Native Guano; it is safe, good, and cheap; used for all kitchen-garden crops with good results. (Gained 108 prizes in 1886 for Fruit, Vegetables, Flowers, &c., grown with it.) NATIVVE GUANO for VINES, ROSES, STRAWBERRIES,, &c. G. STONARD, Reigate: Used for Grapes, Peaches, Tomatos, Roses, Cucumbers, Violets, Peas, Celery, Chrysanthemums. Results: Well satisfied with it to everything I used it for. A. F. BARRON, Royal Horticultural Society, Chiswick: Without doubt a very valuable manure, and easy of application.
Orders to the NATIVE GUANO CO. (Limited), 29, New Bridge Street, Blackfriars, London, E.C., where Pamphlets of Testimonials may be obtained. Agents Wanted.

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The Best and Cheapest
HORTICULTURAL MANURES.

For Fruit, Vines, &c.	"LE FRUITIER."
For Pot Plants.	"UNIVERSAL PLANT FOOD."
For Potatos.	POTATO MANURE "SUCCESS."
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For Kitchen Garden.	"CONDENSED FARMYARD MANURE."
For Potting.	"THE SPECIAL COMPOSTS."
For Watering.	"LIQUID MANURE POWDER."

Sold in 1s. tins, and in 7 lb. bags, and upwards, by all Seedsmen, or direct from
W. WOOD & SON, F.R.H.S.,
Sole Manufacturers,
Wood Green, London, N.
WOOD & SON'S CATALOGUE and Price LIST, post-free, includes all the best qualities of ORCHID and other PEATS, LOAM, SAND, COCOA-FIBRE, MUSHROOM SPAWN, BONE MEAL, DRIED BLOOD, POTASH, AMMONIA, and all other HORTICULTURAL REQUISITES. Samples free.

EPPS'S SELECTED PEAT,
For CHOICE PLANTS, FERNS, HEATHS, &c.; also for RHODODENDRONS.
Specially Selected do. for Orchids.
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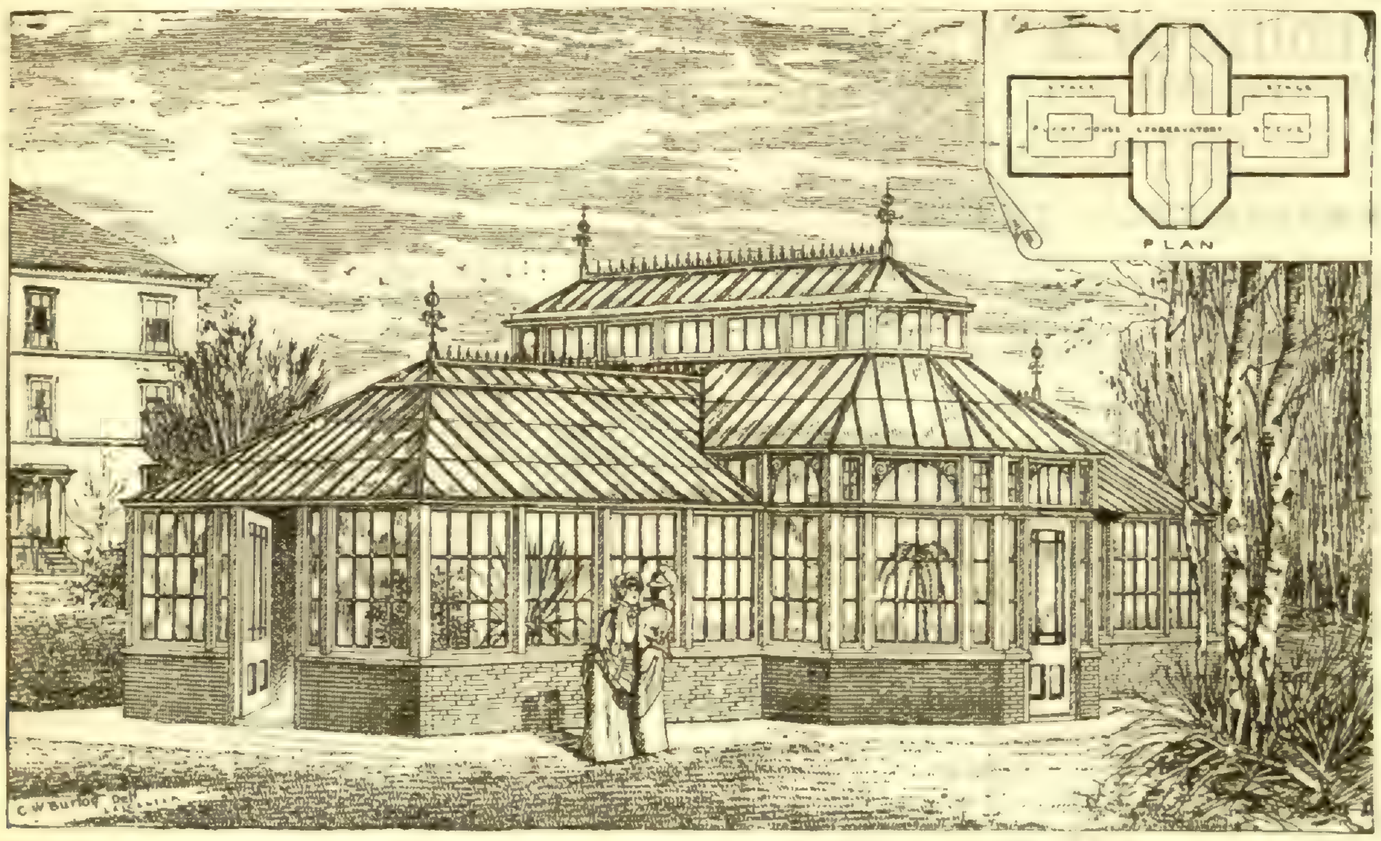

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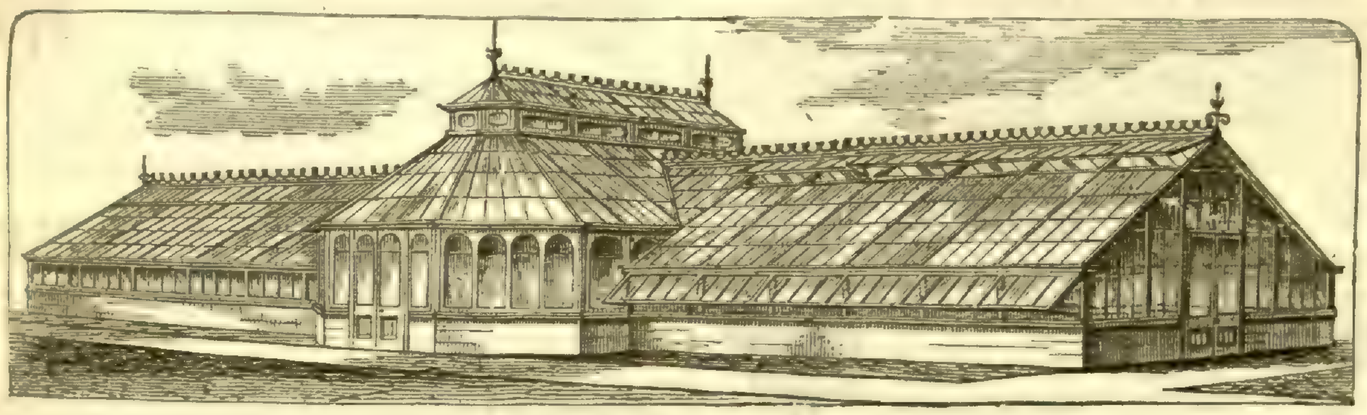

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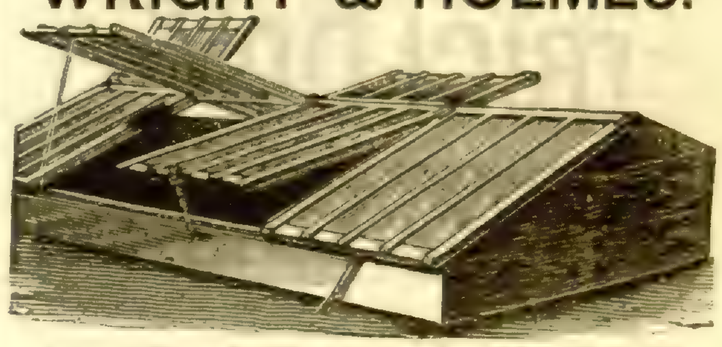

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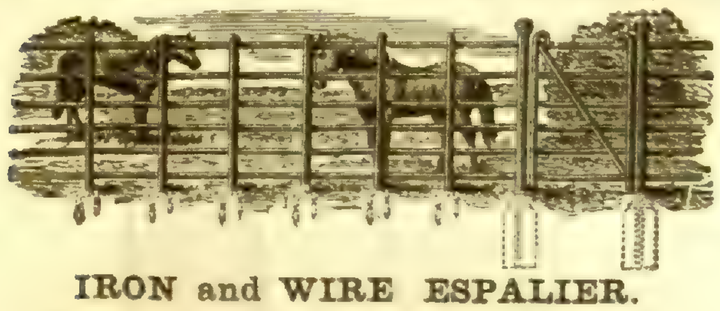

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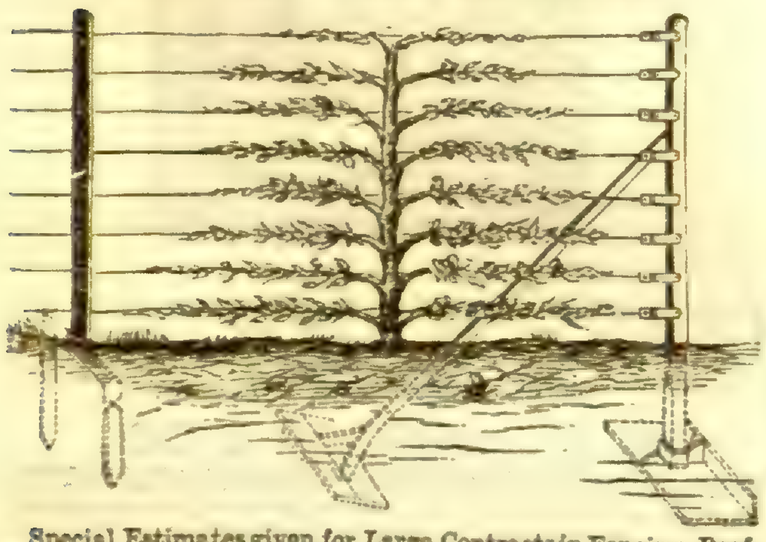

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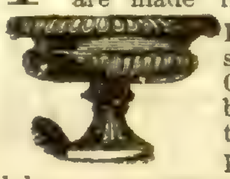

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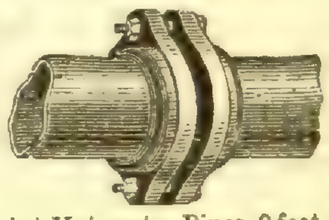

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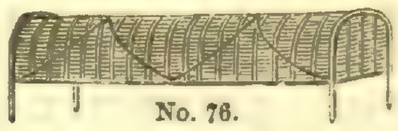

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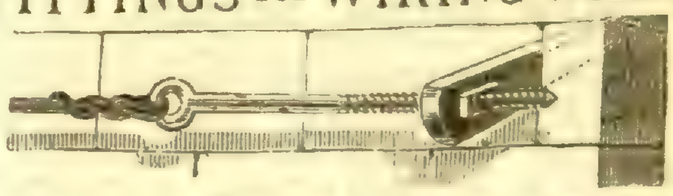

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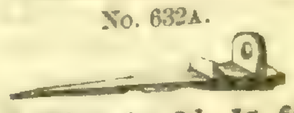

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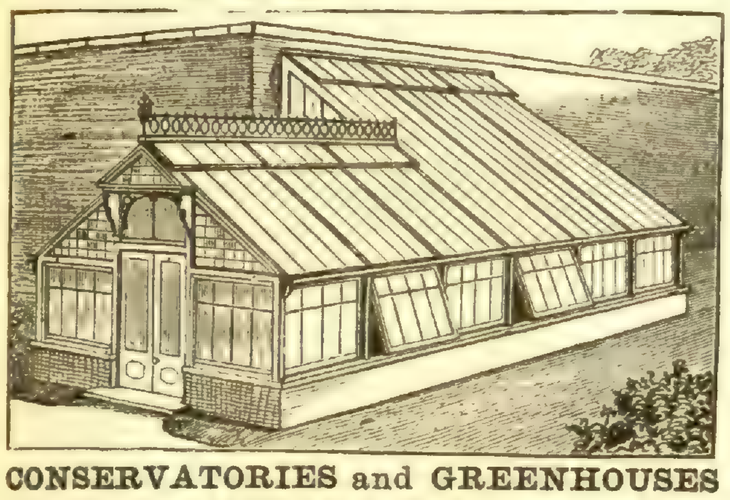

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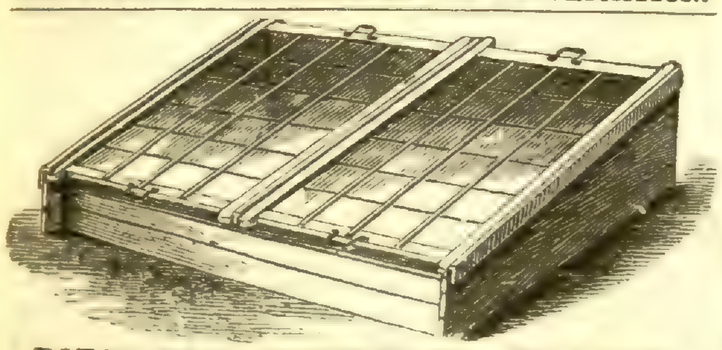

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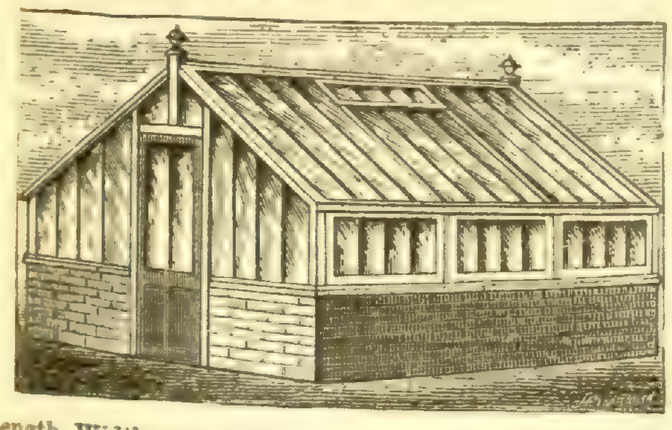

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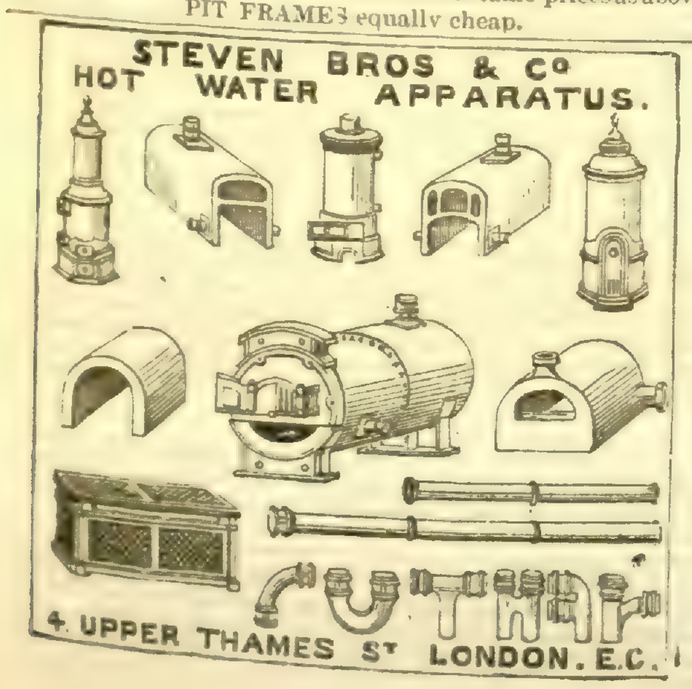

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NEW SOUTH WALES ADVERTISER.

CONTENTS:—

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RECORD of RACES, and NOTES on the TURF.
CRICKET and AQUATICS.
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TALES by POPULAR ENGLISH and AUSTRALIAN AUTHORS.
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JOURNEYMAN, in the Houses or Inside and Out.—Age 22; seven years' experience, two and a half years in Orchids, Stove and Greenhouse Plants, in last situation. Thorough good character. Bothy preferred.—W. TUCK, 58, Walpole Road, Bromley Common, Kent.

JOURNEYMAN, in the Houses; age 21.—G. LUCAS, Head Gardener to C. Liddell, Esq., Peasmarsh Place, Sussex, would be pleased to recommend James Pane, who has been with him three years, to any Gardener requiring a thorough energetic, hard-working, and trustworthy young man.—Address as above.

JOURNEYMAN (UNDER).—Three and a half years at Eastbury Manor, two years under glass. Good character. No objection to inside and out.—F. COBBETT, Compton, Guildford, Surrey.

IMPROVER, or UNDER GARDENER, in a Gentleman's Garden; age 18.—A GARDENER wishes to recommend his son. Five years' experience.—GEO. TOMLINSON, Walcot Gardens, Doncaster, Lincolnshire.

IMPROVER, in a Market Nursery.—Age 22; three years' experience Inside and Out. Good character.—H. BOTTING, Heene Road, West Worthing.

IMPROVER, in a Nobleman's or Gentleman's Garden.—Age 20; nighest references. Three and a half years in last place.—F. MILLS, The Plain, Whiteshill, Stroud.

IMPROVER, in a good Garden.—Age 17; no objection to pay a small Premium. Two years' experience in the Houses. Good character.—W. WORNE, Park Lodge, Orford, Suffolk.

IMPROVER; age 17.—A LADY wishes to recommend a respectable youth. Two years and three months good character.—C. P., Mr. Coxetor, Woolhampton, Reading.

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IMPROVER, in a good establishment.—Age 23; nearly five years' good experience. Has served good apprenticeship. Can be highly recommended.—Full particulars can be had by applying to Mr. E. BENNETT, Head Gardener, Cressingham Park, Reading.

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Seed Trade.

SHOPMAN—also used to Plant and Flower Trade.—Age 27; good Penman and Accountant. Good references.—W. HARRIS, Hammerwood, East Grinstead, Sussex.

Seed Trade.

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The Winners of every First and Highest Prize in all cases of competition, and they are the only Mowers in constant use at all the Royal Gardens and at the Royal Horticultural Society's Gardens, South Kensington.

Patronised by—
HER MOST GRACIOUS MAJESTY THE QUEEN on many occasions,
HIS ROYAL HIGHNESS THE PRINCE OF WALES,
THE KING OF THE BELGIANS,
The Late EMPEROR OF THE FRENCH. The EMPEROR OF RUSSIA,
And most of the Nobility, Clergy, and Gentry of the United Kingdom.

Royal Horticultural Society's Show, South Kensington, London, June 3 to 7. 1881. The "*Journal of Horticulture,*" *of June 9, says:*—"MOWING MACHINES.—After a critical examination the Silver Medal was granted to the old firm of world-wide fame, Messrs. T. Green & Son, of Leeds and London. As the Machines are known in all lands where good lawns are cherished, it is quite unnecessary to give any description of them."

Upwards of 135.000 of these Machines have been Sold since they were first introduced in the year 1856,
And thousands of unsolicited Testimonials have been received testifying to their superiority over all others.
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1st. Simplicity of Construction—every part being easily accessible. 2d. They are worked with much greater ease than any other. 3d. They are the least liable to get out of order. 4th. They make little or no noise in working. 5th. They will cut either short or long Grass, wet or dry.

SILENS MESSOR MOWER, with Improved Steel Chain and Handles.

SINGLE-HANDED LAWN MOWER.

To cut 6 inches,	can be worked by a Lady	... Price	£1 15 0
To cut 8 inches,	do.	do.	2 10 0
To cut 10 inches,	do.	by a strong youth...	3 10 0
To cut 12 inches,	do.	by a man	4 10 0
To cut 14 inches,	do.	do.	5 10 0

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To cut 16 inches,	do.	one man on even lawn	£6 10 0
To cut 18 inches,	do.	man and boy	7 10 0
To cut 20 inches,	do.	do.	8 0 0
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*To cut 24 inches,	do.	do.	9 0 0

* If made stronger, suitable for Donkey, 30s. extra.

Prices of Donkey, Pony, and Horse Machines, including Patent Self Delivery Box, or Side Delivery, with Cross-stay complete, suitable for attaching to Ordinary Chaise Traces or Gig Harness:—

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To cut 28 inches	16 0 0
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Leather Boots for Donkey	1 0 0
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Specially designed to meet a want that has long been felt in cutting the overhanging grass on the edges of walks, borders, flower-beds, &c., and do away with the tedious operation of cutting with shears.

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For Lawns, Drives, Bowling Greens, Cricket Fields, and Gravel Paths, &c.
Suitable for Hand or Horse Power.

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16 in. by 17 in.	2 15 0
20 in. by 22 in.	4 0 0
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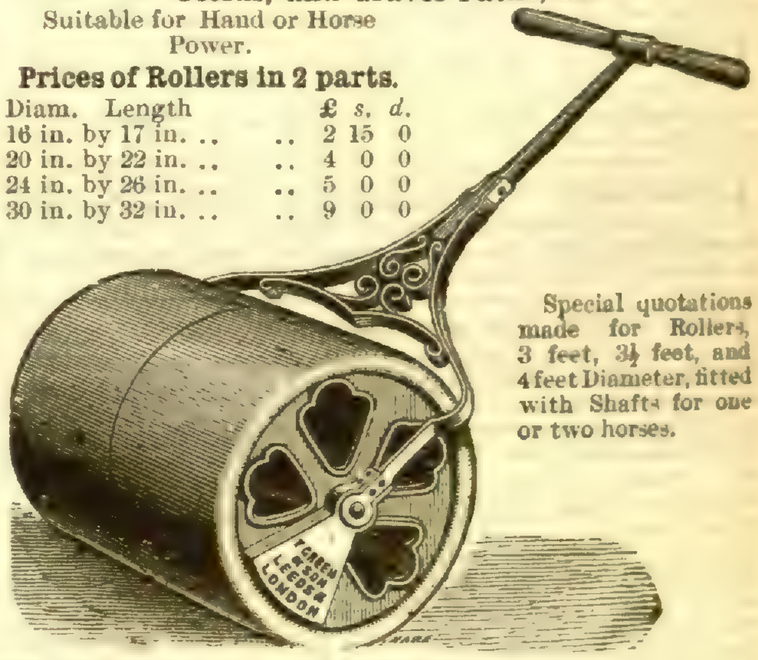

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HIGHLY RECOMMENDED FOR SMALL LAWNS.

PRICES,
With Grassbox.

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To cut 7 in.	1 13 0
To cut 8 in.	2 0 0
To cut 10 in.	3 0 0

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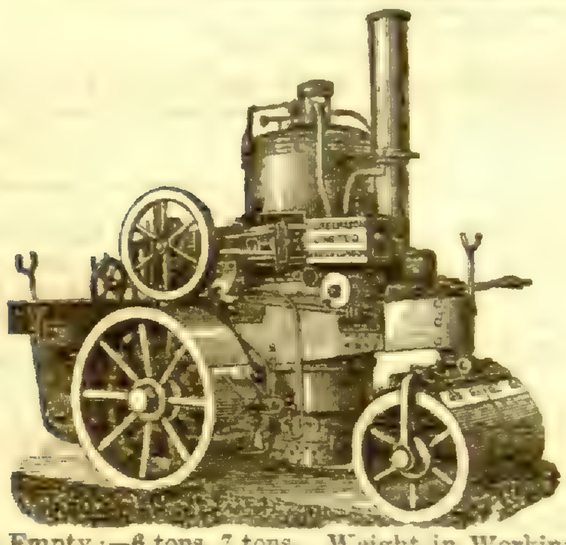
Small Bag of Marking Composition, 9*d*.



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Made specially for H.M. the Queen for the Royal Grounds, Windsor.

They are suitable for Rolling Carriage Drives, Park Roads, Walks, Streets, Highways, and for General Road Making; Rolling Lawns, Cricket Flats, Parks, &c. They can also be used as Stationary Engines for Stone Breaking, Wood Sawing, Pumping, Farm Purposes, and other various work.

They are specially recommended to Noblemen, Gentlemen, Borough and Road Surveyors, Corporations, Local Boards, Highway Trustees, Contractors, Road Makers, and others.

Specifications, with Prices and Testimonials, furnished on application.

Our Roller was selected as the best in a recent competition at Idle, near Bradford, and kept by the Board in preference to one of a noted maker which had to be returned.
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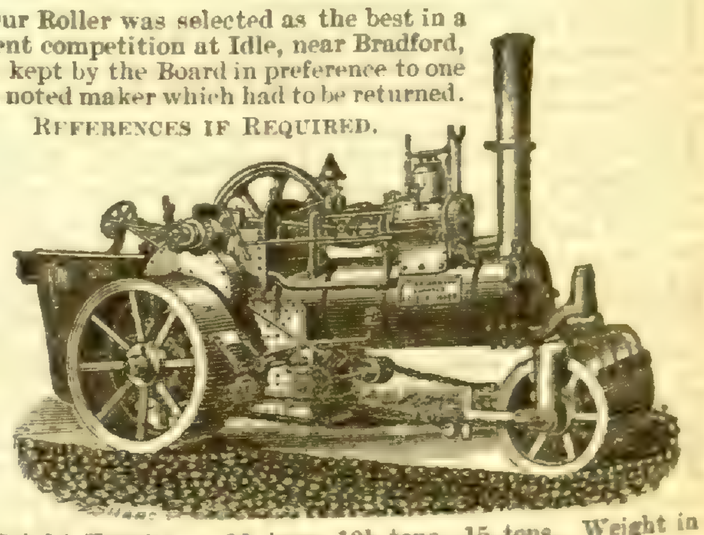

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The largest stock of Mowers kept by any manufacturer is to be found at our London Establishment, SURREY WORKS, BLACKFRIARS ROAD, where Purchasers can make selection out of several hundred Machines of Hand, Pony, and Horse Power, and have their Orders supplied the same day as they are received.

The above Machines are Warranted to give entire Satisfaction, otherwise they may be returned AT ONCE, Free of Cost to the Purchaser.

N.B.—Those who have Lawn Mowers which require repairing should send them to either our Leeds or London Establishment, where they will have prompt attention, as an Efficient Staff of Workmen is kept at both places.

GARDEN SEATS AND CHAIRS, AND HORTICULTURAL IMPLEMENTS OF EVERY DESCRIPTION, WIRE NETTING, &c., &c.

Descriptive Illustrated PRICE LISTS Free on application to

THOMAS GREEN & SON, LIMITED, SMITHFIELD IRONWORKS, LEEDS; AND SURREY WORKS, BLACKFRIARS ROAD, LONDON;

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CONTENTS.

Anthurium brevilobum... 380
Apiary 389
Book—
Garden Calendar ... 389
Botanical Magazine ... 381
Brugmansia suaveolens... 393
Bulb garden 390
,, mite, its cause and cure 392
Colocasia esculenta, a fungoid disease in ... 388
Colonial notes 383
Crystal Palace shows ... 388
Cultural Memoranda ... 383
Cypripedium venustum var. pardina 382
Florists' flowers 394
Flower garden, the ... 381
Fruit buds and birds ... 392
,, register 385
,, show at Chester ... 387
Fruits under glass ... 392
Gardeners, benefit scheme for 393
Gardeners' orphanage ... 386
Gardening appointments 402
,, for the little ones... 385
Grapes, outdoor 393
Grevillea robusta ... 393
Horticultural Club ... 386
Hyacinth show at Exeter 392
Insect powder 389
Jubilee proposals ... 386
Kelway's nursery ... 379
Kitchen garden 385
Law—
Rogers *v.* Coombs ... 394
Odontoglossum rhyncanthum 380
,, retusum 380
Orchid-houses, the ... 385
,, notes 382
Orchids at The Dell, Egham 382
Palms, avenue of ... 386
Phylloxera 388
,, a cure for 387
Plan for a villa garden ... 390
Plants and their culture. 391
Rhododendron Victorianum 387
Roses, cross-bred... ... 387
Royal Horticultural Society 387
Scotland 390
Trade notices 394
Tree Tomato, the ... 386
Tropæolum tuberosum as a food 393
Veronicas and the past winter 393
Weather, the 394
Wintering Carnations and Picotees 394

ILLUSTRATIONS.

Cyphomandra betacea, the Tree Tomato 381
Cypripedium venustum var. pardina... 380
Narcissus, a hybrid 390
Palms, avenue of. (See Supplement.)
Plan for a villa garden 391

ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W.
NOTICE!—COMMITTEE MEETINGS: Scientific, at 1 P.M., in the Lindley Library; Fruit and Floral, at 11 A.M., and Narcissus at 12 noon, in the Conservatory, on TUESDAY NEXT, March 22.
N.B.—Entrances, N.E. Orchard House, Exhibition Road; and Exhibitors' Entrance, east side of Royal Albert Hall.

ROYAL BOTANIC SOCIETY. Gardens, Regent's Park, N.W.
The following are the Arrangements for the Season:—
SPRING EXHIBITIONS, WEDNESDAYS, March 23 and April 20.
SUMMER EXHIBITIONS, WEDNESDAYS, May 18 and June 15.
EVENING FÊTE and SPECIAL EXHIBITION, WEDNESDAY, July 6.
Schedules of Prizes and Tickets now ready.

ROYAL BOTANIC SOCIETY. Gardens, Regent's Park, N.W.
FIRST EXHIBITION of SPRING FLOWERS, WEDNESDAY, March 23.
Gates open at 2 o'Clock. The Band will play from 2.30 to 5.30.
Tickets to be had at the Gardens only by vouchers from Fellows of the Society, price 2*s.* 6*d.* each.

CRYSTAL PALACE.—GREAT ANNUAL SHOW of SPRING FLOWERS, SATURDAY, March 26. Schedules on application to Mr. W. G. HEAD, Garden Superintendent. Crystal Palace, S.E.

SHEFFIELD and WEST RIDING CHRYSANTHEMUM SOCIETY.
The THIRD ANNUAL EXHIBITION will be held in the Sheffield Corn Exchange, on FRIDAY and SATURDAY, November 18 and 19, when a valuable SILVER CUP, and upwards of FORTY POUNDS in cash, will be given in the Open Classes. Schedules of Prizes will be ready shortly, and may be had of W. K. WOODCOCK, Hon. Sec.
The Gardens, Oaksbrook, Sheffield.

PONTEFRACT, KNOTTINGLEY, and ACKWORTH CHRYSANTHEMUM SOCIETY. The FIRST EXHIBITION will be held in the Town Hall, Pontefract, NOVEMBER 25 and 26. Over SIXTY POUNDS offered in Prizes. Schedules from Friar Wood, Pontefract. Mr. T. GLOVER, Sec.

ORCHIDS A SPECIALTY. Stock immense in extent, fine in quality, moderate in price. Inspection invited.
HUGH LOW AND CO., Clapton Nursery, London.

Rhododendrons.
JOHN WATERER AND SONS, Bagshot, Surrey, are the Great Exhibitors of Hardy Scarlet and White RHODODENDRONS.
Their CATALOGUE is ready, and may be had on application.

RHODODENDRONS.—Well budded, choice named kinds, 21*s.*, 24*s.*, and 30*s.* per dozen. Thousands to select from.
JOHN STANDISH AND CO., Royal Nurseries, Ascot.

PANSIES. — Scotch Prize Pansies, 50 best Exhibition varieties, 12*s.* 6*d.*, 26 for 6*s.* 6*d.*, 14 for 4*s.* 6*d.*, post-free, my selection of strong healthy plants.
Competitors please note—Cuthbertson's New CATALOGUE of Competition Flowers and Vegetables, with 30 Illustrations, free to all. Send for a copy.
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WANTED, large PALMS, TREE FERNS, and other large ORNAMENTAL FOLIAGED PLANTS, in EXCHANGE for ORCHIDS or other PLANTS. Send full particulars.
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WANTED, EUONYMUS, Green and Gold, 9 to 12 inches. Please state price per 1000, which must be very low, to J. W. CHAPMAN, Nurseryman, Ramsgate.

WANTED, Large Specimen Silver and Golden HOLLY. State size and price to E. COOLING, Derby.

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Hardy Herbaceous and Alpine Plants.
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Apply, JOHNSON, Barton Mills, Canterbury.

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Apply, GEORGE DEEKS, Kelvedon, Essex.

FINE PYRAMID VICTORIA PLUMS and DAMSONS, £2 per 100; Hybrid RHODODENDRONS, all colours, 1½ to 2 feet, 30*s.* per 100; London PLANE TREES, 8 to 12 feet, £3 per 100; HOLLY, bushy, 1 to 1½ foot, 20*s.* per 100; do., 1½ to 2 feet, 30*s.* per 100; many others cheap.
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Trade Price Current—Farm Seeds—1887.
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WILL TAYLER, Osborn Nursery, Hampton, Middlesex.

Notice to the Trade.
NUTTING AND SON'S Wholesale CATALOGUE of AGRICULTURAL SEEDS has now been posted to the Trade; please inform them if not duly received.
106, Southwark Street, London, S.E.
Telegraphic Address—"NUTTING, LONDON."

LARGE CAMELLIAS for disposal, for want of room. Will be offered very cheap:—
1 JUBILEE, 6 feet high, 5 feet through.
1 ARCHDUCHESS MARIE, 7 feet high, 5 feet through.
1 IMBRICATA, 7 feet high, 6 feet through.
1 ,, 7 feet high, 4 feet through.
1 MARCHIONESS OF EXETER, 7 feet high, 4 feet through.
1 CHANDLERII ELEGANS, 7 feet high, 4 feet through.
Prices on application.
E. P. DIXON, Nurseries, Hull.

HENRY ORMSON AND CO., HORTICULTURAL BUILDERS and HOT-WATER ENGINEERS, Stanley Bridge, King's Road, London, S.W. Designs for Conservatories, Greenhouses, and Heating by Hot-water free on application. See large advertisement, March 12, page 344.

SALES BY AUCTION.

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A fine lot of Standard and Dwarf ROSES, including most of the leading varieties; Ornamental SHRUBS and CONIFERS, FRUIT TREES; a fine lot of BORDER PLANTS, GLADIOLI, LILY OF THE VALLEY, SPIRÆAS, LILIUMS, and other BULBS and ROOTS.

MR. J. C. STEVENS will SELL the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY and SATURDAY NEXT, March 23 and 26, at half-past 12 o'Clock precisely each day.

On view mornings of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7382.)

IMPORTED and ESTABLISHED ORCHIDS. CATTLEYA MOSSIÆ in splendid condition, ODONTOGLOSSUM CRISPUM (Alexandræ), the best type; the rare and beautiful CATASETUM BUNGEROTHII, SACCOLABIUM CŒLESTE, the rare and beautiful blue Saccolabium; the rare AËRIDES MITRATUM, &c.

MR. J. C. STEVENS will SELL the above by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., by order of Messrs. Shuttleworth, Carder & Co., on THURSDAY NEXT, March 24, at half-past 12 o'Clock precisely.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7382.)

CHOICE ESTABLISHED ORCHIDS.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, March 24, about 150 lots of choice ESTABLISHED ORCHIDS, many in flower and bud, including fine plants of Cypripedium Dauthieri vera, Zygopetalum crinitum roseum, Cœlogyne cristata maxima, Odontoglossum hybrid (a fine spotted form), and many other rare species and varieties.

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15,000 Grand Bulbs of LILIUM AURATUM.
1,200 LILIUM SPECIOSUM ROSEUM, ALBUM, and RUBRUM.
7,000 PEARL TUBEROSES, just to hand in fine order, &c.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, March 24.

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Choice named CARNATIONS, PICOTEES, and PINKS, 400 Standard and Dwarf ROSES of the best varieties, selected FRUIT TREES, SHRUBS for pots and the garden, RHODODENDRONS, DAHLIAS, SEEDS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above at the City Auction Rooms, 38 and 39, Gracechurch Street, E.C., on TUESDAY NEXT, March 22, at 12 o'Clock precisely.

On view morning of Sale. Catalogues at the Rooms, and of the Auctioneers, 67 and 68, Cheapside, E.C.

Wednesday Next.

22,000 FINE BULBS of FREESIA REFRACTA ALBA, Just arrived, *ex* Mail Steamer *Athenian*, from Cape Town. ON SALE, WITHOUT RESERVE.

Important to the Trade.

MESSRS. PROTHEROE AND MORRIS will include the above in their SALE of WEDNESDAY NEXT, March 23.

On view morning of Sale, and Catalogues had.

Wednesday Next.

3000 Splendid Bulbs of LILIUM AURATUM.

MESSRS. PROTHEROE AND MORRIS will include the above in their SALE, on WEDNESDAY NEXT, March 23.

On view morning of Sale, and Catalogues had.

Every Wednesday and Saturday.

SALES of CAMELLIAS, AZALEAS, PALMS, and other PLANTS in variety, from Belgium, and elsewhere; LILIUM AURATUM and many rare LILIES, also a collection of beautiful IRIS from Japan (see native drawings), 500 choice named Dwarf ROSES, CARNATIONS, PICOTEES, English grown LILIES, and a great variety of hardy BULBS and PLANTS.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., every WEDNESDAY and SATURDAY, at half-past 12 o'Clock precisely each day.

On view mornings of Sale, and Catalogues had.

Friday Next.

Valuable Columbian ORCHIDS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, March 25, at half-past 12 o'Clock precisely, a grand importation of Cypripedium species, most likely a wonderful variety of C. Schleinii.

The plants are very large, the leaves broad, and altogether the plants look very distinct indeed. Also several other importations of case Orchids, consisting of grand masses of Odontoglossum Pescatorei, from the best locality, Oncidium cuncelatum, macrochilum, Odontoglossum triumphans, and blandum, Ada aurantiaca, Anguloa Clowesii, Odontoglossum Phalænopsis, and a quantity of Burmese Dendrobes, Cœlogynes in variety, &c.

On view morning of Sale, and Catalogues had.

Orchids in Flower.

SPECIAL SALE, MARCH 29.

MESSRS. PROTHEROE AND MORRIS beg to announce that their next SPECIAL SALE of ORCHIDS, in flower and bud, will take place as above, for which they will be glad to receive notice of entries as early as possible.

Central Auction Rooms, 67 and 68, Cheapside, London, E.C.

Teddington, S.W.

By order of the Executors of the late Mr. Robert Laing. Short Notice.—Clearance Sale, without reserve, the land being required to be cleared at once.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, the Nursery, Teddington, near Strawberry Hill Station, on THURSDAY, March 31, at 12 o'Clock precisely, the whole of the well-grown NURSERY STOCK, comprising large quantities of Coniferæ and Evergreens, including fine Cedrus Deodara, Green and Variegated Hollies, Yews, Picens, Cupressus, Thuias, Laurels, &c.; 1000 Limes, 3 to 10 feet; Deciduous Shrubs in variety, Ornamental Trees, 3000 Standard, Dwarf-trained, and Pyramid Fruit Trees; 5000 Currants and Gooseberries, thousands of Dwarf Roses, &c.

May now be viewed. Catalogues may be had on the Premises, or at the Twickenham Nursery, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

N.B.—The important FREEHOLD ESTATE, comprising about 3½ acres of valuable Building Land, will be SOLD by AUCTION, by Messrs. PROTHEROE AND MORRIS, at the Mart, London, E.C., towards the end of April next, by order of the Executors. Plans and particulars are in course of preparation, and will be issued in due course.

The Downside Collection of Orchids.

Highly IMPORTANT SALE of selected duplicate plants from this renowned Collection, consisting chiefly of plants matchless in point of rarity and culture.

By order of Wm. Lee, Esq., in consequence of the overcrowded state of the houses.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to SELL by AUCTION, on the Premises, Downside, Leatherhead, on TUESDAY and WEDNESDAY, May 3 and 4, at half-past 12 o'Clock precisely each day, selected duplicate and other ESTABLISHED ORCHIDS, amongst which the following choice kinds will be found:—

Cattleya Trianæ Leeana
,, ,, Dayana
,, ,, Emperor
,, ,, alba, true
,, ,, eboracensis
,, ,, Thompsonii
,, ,, Osmani
,, ,, Dodgsoni
,, ,, Emiliæ
,, ,, Backhouseana
,, ,, Colemani
,, fausta
,, labiata, autumn-flowering
,, calummata
,, Mardelli
,, Skinneri alba
,, Mendelii Selbornensis
,, ,, Morganiæ
,, exoniensis
,, Rothschildiana
Lælia elegans, special varieties
Lælia anceps Dawsoniæ
,, Wolstenholmeiana
,, bella
,, Veitchiana
,, flammea
,, grandis
Phaius tuberculosus
Cymbidium Parishii
Pachystema Thomsonii
Saccolabium Heathii
,, Harrisonianum
Dendrobium Phalænopsis
,, Harveyanum
,, nobile nobilius
,, Falconeri giganteum
Maxillaria Sanderiana
Masdevallia Harryana
Bull's Blood — true and many other splendid varieties
Cypripedium Stonei platytenium
,, grande
,, microchilum
,, selligerum majus
,, Arthurianum
,, Wallisi
,, Leeanum Superbum
,, euryandrum
,, vexillarium
,, Morganiæ
,, tesselatum porphyreum
Cœlogyne cristata alba
,, Lowi
Odontoglossum Hrubyanum
,, rigidum
Vanda tricolor planilabris
,, Pattersoni
,, Sanderiana

The plants may be viewed any day prior to the Sale on presentation of a Catalogue or card to view, to be obtained of Mr. WOOLFORD, the Head Gardener, on the Premises, and of the Auctioneers and Valuers, Central Auction Rooms, 67 and 68, Cheapside, London, E.C.

Hampton, Middlesex.

At very low Reserve.—To Nurserymen and Florists, &c.

MR. J. EMBLETON will SELL by AUCTION, at the "Red Lion" Hotel, Hampton, on THURSDAY, April 7, at 6 o'Clock in the evening, 7A. 2R. 21P. well adapted for the above purposes, and situated close to Hampton Station, South-Western Railway.

Particulars and conditions of Sale may be obtained of Messrs. SANKEYES AND FLINT, Solicitors, Canterbury; and the Auctioneer, Suffolk House, New Hampton.

WANTED, within easy distance of London, by a man well known in the Trade, and having an extensive connection, a SMALL NURSERY, near a Railway Station, to which there is a good train service; if possible, in a neighbourhood where additional Land can be procured, adapted for the extensive Cultivation of Hardy Bulbs.

Apply, in the first instance, giving Acreage, amount of Glass, &c.—D. L., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

TO BE SOLD, a newly built HOUSE and a GARDEN, with about 200 feet of Glass in a thriving town in Yorkshire. Capital opening for a man with about £500, remainder advanced by vendor. Excellent sale for Plants, Flowers, Fruit, &c., and good living easily made.

Apply to A. M. A., Hooper & Son, 69, Ludgate Hill, London, E.C.

To Gardeners, Florists, and Others.

FOR SALE, situate 3 miles from Cheltenham, six Glass-houses, with DWELLING-HOUSE, OUT-BUILDINGS, &c., and about 2 acres of Land.

Apply to T. TARLING, Field House, Bishop's Cleeve, near Cheltenham.

TO BE LET or SOLD, with possession, a compact NURSERY and FLORIST'S BUSINESS, with good Dwelling-house, Showhouse, and Shop, nine Greenhouses, well stocked; there is also a good opening for Jobbing to be done. Terms easy.

M. HADGRAFT, Mr. Squire, Post Office, Hanwell, Middlesex.

TO BE LET or SOLD, a compact little FLORIST'S NURSERY with four good Houses and several Pits. Has a flourishing trade, in a first-rate position close to the Town. Stock small.

Apply to HARRISON AND SONS, Seed Merchants, Leicester.

SALE OF THE "HARVEY" COLLECTION OF ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

wish to state that Purchasers who wish to secure the Choicest Specimens and Varieties from this fine Collection should send their Orders so as to reach the Company not later than

Tuesday Morning next, the 22d. inst.

See p. 371 for full particulars.

Inspection of this fine Collection is specially invited.

Fine Specimens are included of the most rare and choice kinds of CATTLEYAS, ODONTOGLOSSUMS, ONCIDIUMS, LÆLIAS, DENDROBIUMS, MASDEVALLIAS, PHALÆNOPSIS, VANDAS, AËRIDES, CŒLOGYNES, &c., Mr. HARVEY having devoted many years to collecting the very choicest varieties which he could obtain of these and the other species.

CATALOGUES Post-free, on application to THE COMPANY, The Vineyard and Nurseries, Garston, near Liverpool.

FOR DISPOSAL, through ill-health, in an important Market Town near London, an old-established NURSERY, FLORISTS' and JOBBING BUSINESS, large Dwelling-house, Shop attached, with good frontage to the Market Place, several Greenhouses and Frames, and 3 Acres of excellent Land, mostly stocked, and in working order. Seed Business can also be acquired if desired. An immediate purchaser will be very liberally dealt with, and any reasonable offer entertained.

For particulars, apply by letter to C. D., 17, Norton Folgate, London, E.

To Fruit and Flower Growers, Market GARDENERS and OTHERS.

Surrey, 18 miles from London midway betwixt two stations, and in the midst of a district where there is a local demand.

TO BE LET on LEASE or SOLD IMMEDIATELY, owing to owner's ill-health, an excellent FRUIT GARDEN, well stocked, about 12 acres in extent (more or less Land could be had as desired), with numerous Glass Erections, including Vinery, Strawberry, and Tomato Houses, and several Pits. All heated.

Substantial brick-built 7-roomed Cottage, also Stabling, Cart-shed, Cow-shed and other Buildings, Fruit, Seed Potting and Washing Sheds. Terms of

WATERER AND SONS, Land Agents, Chertsey.

To Amateur Fruit Growers.

TO LET, furnished, an old-fashioned comfortable HOUSE, with Stables and Coach-house; walled Garden, large Orchard-house, Small Hothouse, Conservatory and Rose House, in excellent order and full bearing.

Apply by letter only to H., care of W. H. Hastings, Esq., Solicitor, 110, Cannon Street, E.C.

Hampton, Middlesex.

TO BE LET, on LEASE, a very pleasant eight-roomed COTTAGE with Shop, Glass Erections, and nearly 2 Acres of NURSERY GROUND. Immediate possession.

Apply to Mr. J. EMBLETON, Auctioneer, Suffolk House, New Hampton.

PROTHEROE AND MORRIS, HORTICULTURAL MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

Important Notice.

To Florists, Seedsmen, Horticultural Builders, &c.

PLANTS, FLOWERS, FRUITS and VEGETABLES a Specialty.

WM. J. WELCH begs to call particular attention to his productions for ILLUSTRATING BOOKS, MAGAZINES, CATALOGUES, and for ADVERTISING PURPOSES.

For Specimens see *Gardeners' Chronicle*, 1883 to 1886.

ADDRESS:—25, Wellington Street, Strand, London, W.C.

Landscape Gardening.

H. F. MALLER (of the firm of B. Maller & Sons), late Pupil of the Crystal Palace School of Landscape Gardening, is prepared to FURNISH PLANS, or undertake any kind of the above work.—61, High Street, Lewisham.

CHRYSANTHEMUM CUTTINGS.—Finest-rooted:—Ethel, Princess of Teck, Fair Maid of Guernsey, and others, £3 per 1000. Special quotations for large quantities, or to EXCHANGE for Market GERANIUMS, PELARGONIUMS, CARNATIONS, and BOUVARDIAS.—Send for LIST and Sample to

MANAGER, St. Thomas's Nursery, Exeter.

S. SHEPPERSON,

FLORIST and SEEDSMAN,

PROSPECT HOUSE, BELPER, DERBYSHIRE,

Begs to inform the readers of this Paper that he is prepared to execute orders for the following Plants, all of which are of the very finest possible strains that money can buy. They have all been grown on the Derbyshire Hills, and are therefore very hardy, strong, and warranted to succeed and bloom well. All carriage free for cash with order.

DESCRIPTIVE LIST of Florist Flowers 4d. stamps, or free to customers.

PANSIES.—A specialty, probably the best collection in England; the cream only of the most noted raisers, the latest new sorts, and the winners at all the great shows. Good plants, correctly named, show or fancy. Twelve for 3*s*., twenty-five for 5*s*. 6*d*., 100 varieties for 20*s*. Postal order free.

HOLLYHOCKS.—Chater's very finest and most select strains. Twelve varieties for 2*s*. 6*d*., six for 1*s*. 6*d*.; six extra strong for 2*s*. Postal order free.

CANTERBURY BELLS.—Unrivalled collection, grand new colours; double and single telescopes, candelabrum, and other new forms. Twelve good plants, to bloom well, for 1*s*. Postal order free.

CHRYSANTHEMUMS.—A specialty. The best and most distinct varieties, large-flowered, incurved, reflexed, Japanese, early and late bloomers, pompons, &c., including the grand new and distinct forms by Lemoine and other raisers. Twelve distinct varieties, named, well rooted plants, 2*s*.; twenty-six for 4*s*., free.

CARNATIONS.—Grenadin, the new German scarlet; a fine decorative and distinct variety. Early and free bloomer. Twelve for 1*s*. 6*d*., six for 1*s*., free.

PHLOXES.—Unrivalled collection, early and late varieties, including the latest new Continental and Scotch named varieties. Twelve distinct sorts, 3*s*., six for 1*s*. 8*d*., free.

CARNATIONS, PICOTEES, and CLOVES.—Strong 2-yr. old plants, from finest Show flowers only; will give a mass of bloom. Twelve beautiful varieties for 2*s*. 6*d*., six for 1*s*. 6*d*., free.

POLYANTHUS.—The finest strain grown; fine large trusses and blooms, and splendid colours. Twelve for 1*s*., twenty-six for 2*s*., free.

PINKS.—Beautiful pure white garden, deliciously scented. Good strong plants, to bloom well, six for 1*s*., twelve for 1*s*. 6*d*., free.

CARNATIONS, PICOTEES, and CLOVES.—Beautiful self, striped, and spotted varieties, sweetly scented, all strong well rooted layers. Twelve distinct sorts, named, 4*s*., free.

GEUM.—The new double scarlet, equal to a double Geranium, quite hardy, free bloomer. Twelve for 1*s*., twenty-five for 2*s*., free,

AURICULA.—Pure snow-white, one of the most beautiful hardy spring flowering plants in cultivation. Two for 1*s*., free.

SWEET WILLIAMS.—Auricula-eyed; Hunt's improved, Barlow's strain, double varieties, extra dark and other fine strains. Good blooming plants, 1s. per dozen, free.

FOXGLOVES.—Gloxinia-flowered; Dean's grand new large spotted varieties; very fine. Twelve for 1*s*. 6*d*., six for 1*s*., free.

DELPHINIUMS.—Distinct hardy border flowers. Six good blooming plants for 1*s*. 6*d*., twelve for 2*s*. 6*d*., free.

AURICULA.—The old-fashioned single yellow, most deliciously scented, soon bloom. Six for 2*s*., two for 1*s*., free.

POLYANTHUS, Novelty; beautiful new white. Strong plants, full of bloom-buds. Twelve for 1*s*. 6*d*., six for 1*s*., free.

COLLECTION of twelve HARDY BORDER PLANTS, distinct and very fine varieties, 2*s*., free.

WALLFLOWERS.—Double German, Cannell's Bright Maroon, Ware's Brilliant Red, Crawford Beauty, Carter's Old Gold, Belvoir Castle, Harbinger, and Covent Garden Dark. 1*s*. per dozen, free.

STRAWBERRY PLANTS.—Selected crowns, transplanted, Black Prince, Improved Brown's Wonder, Alpha, Pauline, Sabreur, Vicomtesse H. de Thury, Duke of Edinburgh, and other extra sorts. 3*s*. per 100, free.

STRAWBERRY King of the Earlies, Mr. Laxton, grand new early variety, 5*s*. per 100, free. Also The Captain (Laxton), 1*s*. per dozen, free.

S. SHEPPERSON,

Florist and Seedsman,

PROSPECT HOUSE, BELPER, DERBYSHIRE.

CHOICE FLOWER SEEDS.

JAS. VEITCH & SONS,

ROYAL EXOTIC NURSERY, CHELSEA,

LONDON, S.W.

Collections of Choice Flower Seeds

In the Original Sealed Papers, as imported from the most celebrated Continental cultivators.

VEITCH'S SUPERB ASTERS.

DWARF CHRYSANTHEMUM-FLOWERED.

A magnificent variety, bearing enormous flowers.
Collection of 12 distinct colours, separate 2 6

VICTORIA.

The finest Aster; grand for exhibition.
Collection of 12 distinct colours, separate 3 0

TRUFFAUT'S IMPROVED PÆONY PERFECTION.

A splendid Incurved variety, of great size and symmetry.
Collection of 12 distinct colours, separate 2 6

And many other varieties.

VEITCH'S SUPERB STOCKS.

LARGE-FLOWERING GERMAN TEN-WEEK.

The most popular Stock in cultivation.
Collection of 12 distinct and beautiful colours 2 6

NEW ROBUST ROCKET TEN-WEEK.

Of robust branching habit, bearing massive spikes of large double flowers.
Collection of 8 distinct and beautiful colours..... 2 6

LARGE-FLOWERING PYRAMIDAL TEN-WEEK.

A beautiful class, of strong growth and pyramidal habit.
Collection of 12 distinct and beautiful colours 2 6

VEITCH'S SUPERB BALSAM.

Collection of 8 distinct and beautiful colours..... 2 6

DOUBLE HELICHRYSUMS.

Beautiful Everlasting Flowers.
Collection of 12 splendid varieties, separate 2 0

LARKSPURS.

Double Dwarf Rocket Hyacinth-flowered.
10 distinct varieties, separate..... 2 0

VEITCH'S SUPERB PETUNIAS.

Assortment of 12 finest large-flowering varieties, separate 3 0

PHLOX Drummondi grandiflora.

Assortment of 12 brightest and most distinct colours 2 6

SCABIOUS.

New Dwarf, 8 varieties..... 1 0
Large-flowered, 8 varieties 1 0

VEITCH'S SUPERB ZINNIAS.

Finest Double-flowered, in 8 distinct colours..... 2 0
Finest Single-flowered, in 6 distinct colours 1 6

Packets of each of the above, in finest mixed colours, 6*d*. to 1*s*. each.

☞ *For full descriptions of the above and other Choice Flower Seeds see CATALOGUE for 1887, forwarded gratis and post-free on application.*

ROYAL EXOTIC NURSERY, CHELSEA,

LONDON, S.W.

GREAT SALE

OF

ORCHIDS.

THE

LIVERPOOL HORTICULTURAL CO. (JOHN COWAN), LIMITED,

Are instructed by E. Harvey, Esq., of Riversdale, Aigburth, near Liverpool, to offer his

ENTIRE COLLECTION OF ORCHIDS

FOR SALE,

and with this object the Collection has been removed to the Company's Premises, not a single plant having been previously disposed of or otherwise taken from it.

Mr. Harvey has for a number of years been known as one of the most ardent collectors of Orchids in this part of the country, and perhaps no gentleman has given more personal attention to his collection, or has displayed a greater love for this fascinating class of plants. The result is one of the most unique collections in the country, and the Company are very pleased to have been favoured with the privilege of distributing it.

A matter of the greatest possible importance when selling a collection of Orchids is the accuracy of the descriptions given to intending purchasers, in this case every confidence may be placed in the catalogue description, as Mr. Harvey has kept an accurate record of the history and character of each plant. In all cases where an opinion is expressed as to the variety being good or otherwise the plant has been flowered and judgment pronounced upon it by Mr. Harvey, not with a view to its sale but for his own guidance: where plants have not been flowered by him the fact is stated.

Mr. Harvey purchased a very large number of his plants when in flower, and consequently got only the best varieties, and his system for years has been to weed out all varieties from imported plants which did not come up to his standard of excellence as they flowered. The collection consequently includes a very large proportion of first-class varieties.

We have never seen a collection where the plants have been in better condition at the roots, or indeed in better health generally, taking them as a whole.

As there is such an immense variety of Orchids of all kinds, it is difficult to give an opinion as to the leading features of the collection, but special mention may be made of the Cattleyas, which include many fine specimens as well as many of the most rare varieties. Special mention may also be made of the Odontoglossums: these are not only in robust health but they include many grand and valuable varieties. The Masdevallias also form a special feature in the collection. Lælia elegans and anceps, Phalænopsis and Dendrobiums are all fine, and each species includes varieties not often to be met with.

We are certain that many cultivators will be glad of such an opportunity of making additions to their collections, and we are anxious to give an equal chance to all purchasers.

With this object in view the Company have decided to sell the collection in the same way as they sold the "Percival" collection, which gave such satisfaction to our patrons.

The collection will be on view at the Vineyard from **Tuesday morning, the 15th inst.**, and on sale from **Tuesday morning, the 22d inst.**, from 11 o'Clock, and no plants will be sold before that time; but, in the meantime, orders will be received, and as the Company anticipate considerable competition for some of the plants, they wish to state that every plant for which more orders than one shall be received up to 11 o'Clock on Tuesday morning, the 22d inst., will be set aside, and notice of the number of buyers for such plants will be immediately telegraphed to such of them as are not present, and on the following day (Wednesday), at 2 o'Clock, these plants will be SOLD by AUCTION, but bids will not be accepted from any one except those from whom the Company hold orders for the particular plants offered. Buyers who cannot attend personally will please to send the Company, by letter or telegram, instructions as to how far they are prepared to advance upon the catalogue prices at the Auction. The intention of this plan is to prevent disappointment to purchasers who may wish to secure particular plants, even at an increased price. **Orders given after 11 o'Clock on Tuesday morning, the 22d inst., will be executed in the order in which they are received.**

The Company suggest that, in making out their orders, purchasers should, wherever they find it practicable, give them the option of substituting for any plant specially ordered and which may be sold, a similar plant, in cases where there are several plants of the same variety nearly alike.

Orders sent by letter or telegram shall have the careful and personal attention of the Company's Manager, Mr. John Cowan.

THE LIVERPOOL HORTICULTURAL CO.

(John Cowan), Limited,

THE VINEYARD and NURSERIES,

GARSTON, near LIVERPOOL.

Telegraphic Address: "COWAN, LIVERPOOL."

CHRISTMAS ROSES.
HELLEBORUS ABCHASICUS ALBUS, 6s. per dozen.
" " PURPUREUS, 9s. per dozen.
" FŒTIDUS, 6s. per dozen.
" NIGER, 3s. per dozen.
" " ALTIFOLIUS, 12s. per dozen.
" " ANGUSTIFOLIUS, 9s. per dozen.
" OLYMPICUS PURPUREUS, 9s. per dozen.
" WILLY SCHMIDT, 12s. per dozen.
One plant of each of the above, post-free for 6s.
MORRISON BROTHERS, Nurseries, Aberdeen.

SMALL SHRUBS and CONIFERÆ:—Cupressus Lawsoni, 12 to 15 inches, transplanted, 60s. per 1000; C. erecta viridis, 1 to 1½ foot, extra, 12s. per 100; C. stricta, 10 to 12 inches, 12s. per 100; C. gracilis, 10 inches, 12s. per 100; Cedrus Deodara, 2-yr., 50s. per 1000; Thuia Lobbii, 9 to 12 inches, 50s. per 1000; T. Ellwangeriana, 9 to 10 inches, 12s. per 100; Thuiopsis dolobrata, 9 to 10 inches, transplanted, 10s. per 100; Retinospora plumosa, 12 to 15 inches, bushy, 12s. per 100; R. squarrosa, 9 inches, transplanted, 10s. per 100; Araucaria imbricata, 8 inches, fine, 40s. per 100; Pinus Cembra, 1-yr., 5s. per 1000; P. excelsa, 2-yr. 1-yr. transplanted, 10s. per 100; P. insignis, 1-yr. transplanted, 6s. per 100; P. Nordmanniana, 1-yr., 25s. per 1000; Abies Douglasii, 6 inches, 6s. per 100; ditto, 9 to 12 inches, 12s. per 100; English Yew, 6 to 9 inches, 8s. per 100; American Arborvitæ, 9 to 10 inches, 50s. per 1000; Box, Tree, 9 to 10 inches, 40s. per 1000; Sweet Bay, 9 to 12 inches, 7s. 6d. per 100; Evergreen Oaks, 2-yr., fine, 6s. per 100; Laurustinus, 8 inches, 8s. per 100; Portugal Laurels, transplanted, 6 to 8 inches, 60s. per 1000; Common Laurels, 2-yr., 20s. per 1000.
GARLIES MITCHELL, Nurseryman, Stranraer.

CREEPERS FOR WALLS.—By planting what is suitable, an ugly object may easily be made beautiful. Descriptive LIST and advice free.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

HARDY RHODODENDRONS and AZALEAS.—The most extensive stock in the Kingdom of the finest hardy varieties known.
☞ The Rhododendrons in Rotten Row and the Botanic Gardens, Regent's Park, are supplied by
ANTHONY WATERER, Knap Hill Nursery, Woking, Surrey.

Myrobella.
PRUNUS MYROBALANA, or CHERRY PLUM.—The best stuff for Mending Old Fences or Making New Ones. Grows fast in poorest soils. Much stronger than Whitethorn. It is also an excellent Stock for the Plum. A sample hundred, 2 to 3 feet, sent on receipt of 6s., 50 for 3s. Full further particulars of
EWING AND CO., Sea View Nurseries, Havant, Hants.

100 DECIDUOUS SHRUBS in 50 distinct varieties, for 22s.
100 EVERGREEN SHRUBS, in 50 distinct varieties, for 32s.
100 CONIFERS, in 50 distinct varieties, for 52s.
All or any of the above, or half the number of each at half price, sent package free and carriage paid to Leith, Newcastle, Hull, or London, for cash with order.
MORRISON BROTHERS, Nurseries, Aberdeen.

EIGHTY THOUSAND CLEMATIS, in Pots, of all the finest Double and Single Varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants. Descriptive LIST on application.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Reduced Prices to meet Depression.
DESCRIPTIVE CATALOGUE, comprising fine transplanted FRUIT TREES, ROSES, Hardy CLEMATIS, RHODODENDRONS, CONIFERS, TREES and SHRUBS, CLIMBERS, FOREST TREES, &c., free on application to
GEO. JACKMAN AND SON, Woking Nursery, Surrey.

Laurels, Hollies, English Yews, &c.
JOHN PERKINS AND SON offer the following fine, bushy, recently transplanted EVERGREENS, which will move safely now:—
LAURELS, Common, 2½ to 3½ feet, 20s. per 100.
HOLLIES, Green, 2 to 2½ feet, 45s. per 100.
YEWS, English, 2½ to 3 feet, 70s, per 100.
THUIA LOBBII, 2 to 3 feet, 40s. per 100.
Billing Road Nurseries, Northampton.

The Choicest Specimens of Evergreen TREES and SHRUBS.
RICHARD SMITH AND CO. beg to announce that they have just published a little LIST in which they offer the above at prices practically within the reach of all, and they will be happy to send same free by post.
St. John's Nurseries, Worcester.

ORCHIDS FOR SALE, CHEAP, to make a clearance.—Odontoglossums in great variety, the bulk not flowered; some fine varieties of O. Alexandræ and its hybrids are amongst them. Strong plants, imported some years, and likely to flower this season. Price £25 per 100. Apply to
Rev. J. B. NORMAN, Whitchurch Rectory, Edgware, London.

FOR SALE, the following CABBAGES, good stocks and good growth:—Enfield Market and Dwarf Nonpareil, 50s. per cwt.; Dwarf York, 45s. per cwt.; and Red Cabbage, 90s. per cwt.
Apply EDWARD WARNER, Seed Grower, Kelvedon.

VERBENAS—VERBENAS—VERBENAS.—Eleven First-class Certificates have been awarded by the Royal Horticultural Society for this strain. Seed, now ready, 1s. 6d. per packet.
LIST of the new varieties sent free on application to
W. STACEY, The Nurseries, Dunmow.

CARTERS' PERMANENT AND BEAUTIFUL LAWNS

SOW DURING THE MONTH

CARTERS' INVICTA LAWN SEEDS.

CARRIAGE FREE—Per Pound. Bush.

	s. d.	s. d.
Carters' Invicta Lawn Seeds	1 3	25 0
Carters' Grass Seeds for Town Lawns ...	1 3	25 0
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Bright golden-yellow sport from "Princess of Teck." Finest sport obtained for many years. Invaluable alike for exhibition and for cutting. For late market work it will prove a capital companion to its parent variety. First-class Certificate Royal Horticultural Society and National Chrysanthemum Society. Strong plants now ready, 3s. 6d. each, three for 7s. 6d. Cash with order.
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And other leading varieties. Prices upon application.
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LAING'S BEGONIA SEED.—Awarded Two Gold Medals. From Prize Plants, in sealed packets. Choice mixed, from single varieties, 1s., 2s. 6d., and 5s. per packet; double varieties, 2s. 6d., 3s. 6d., and 5s. per packet. Collections—12 named varieties, separate, 5s. 6d.; 6 ditto, 3s. Order direct from us, to procure the genuine seed.
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TUBEROSES, Double African and American Pearl. Largest and cheapest stock in the Trade. See Special LIST. Trade Supplied.
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FRUIT TREES.—Standard two-year and Maiden PLUMS, Standard two-year and Farleigh DAMSONS, Dwarf-trained PEACHES, APRICOTS, and Merello CHERRIES, &c. One-year Seedling CRAB, 3*s.* per 1000; if 20,000 taken, 2*s.* 6*d.* A few thousands of Brussels, Brompton, and Common PLUM STOCKS. Price on application to
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To the Trade.

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All at £5 per ton. Free on rail.
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OLD-FASHIONED YEW HEDGES, to harmonise with and give a charm to the prevailing style of architecture.
Well-rooted bushy Plants, 1½ to 2 feet, 6*s.* per dozen, 35*s.* per 100.
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The above having been frequently transplanted are in perfect order for removal. Prices of larger plants on application, as also descriptive LIST of other stock suitable for Evergreen Hedges, Blinds, &c., such as HOLLIES, CYPRESSES, JUNIPERS, THUIA LOBBII, LAURELS, PRIVET, THUIOPSIS, &c.
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Good Planting SEAKALE, 4*s*. and 5*s*. per 100.
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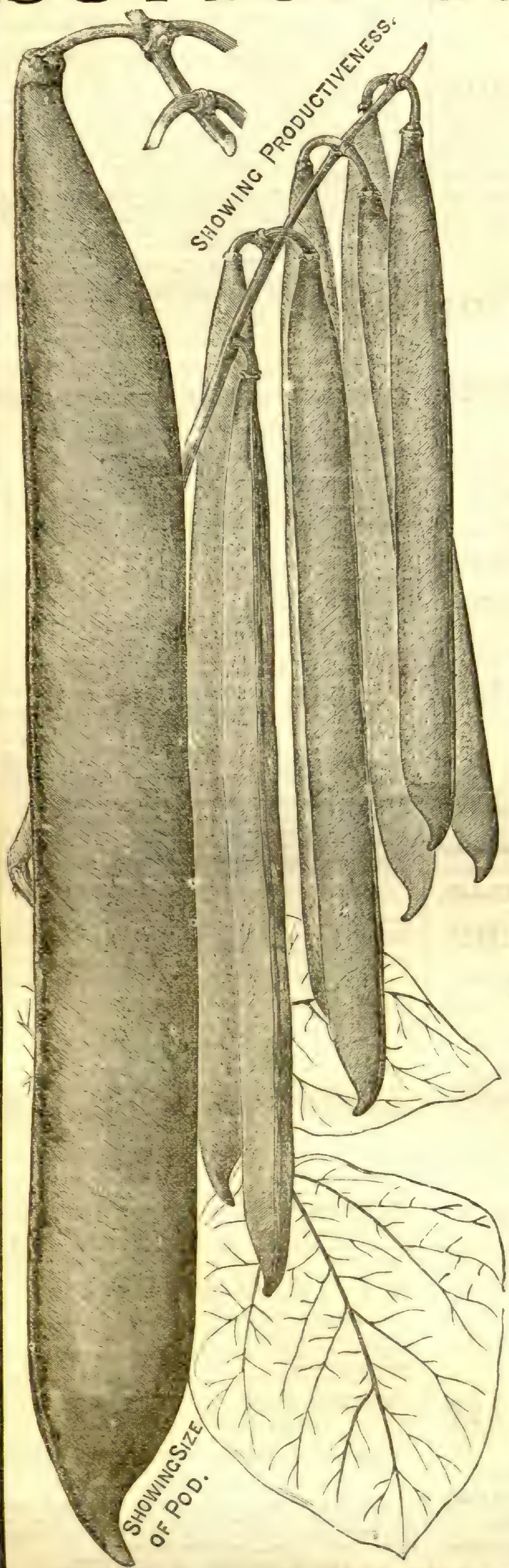

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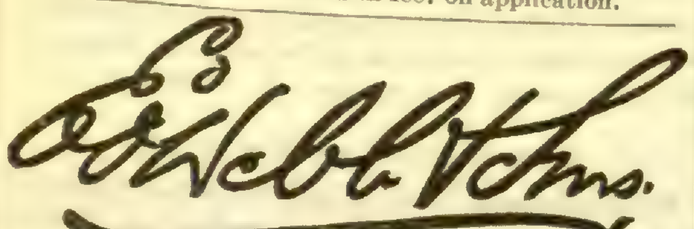

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As a Supplement to the "GARDENERS' CHRONICLE" for next week, March 26, will be published an Ink-Photograph of THE PHALÆNOPSIS-HOUSE at Heaton Hall, Cheshunt.

THE

Gardeners' Chronicle.

SATURDAY, MARCH 19, 1887.

A GRAND OLD GARDENER.

YOUR readers may like to hear something of the sayings and doings of a great gardener, James Kelway. Owing to my being commissioned to paint a portrait of him I have been with him daily for a month, and have had the privilege of seeing the working of his nursery "in time of Snowdrops." In this case there have been two Eves, and Mr. William Kelway is the offspring of the first. He keeps up the mercantile part of the business, and has built a new house and accumulated a great collection of hardy trees and subjects for the young scion, now aged sixteen, likely to follow worthily his grandfather's footsteps, who is seventy-one, keen of eye, and quick of understanding, white on head and chin and cheek. His is a wonderful memory. If you had heard him describe just now how he went to call on Souchet, the hybridist, and found "Villa Gladiole" stuck up on his house—the very name he had given to his own house in England; or how he was once, and only once, acquainted with Barnes, of Bicton, you would have laughed. The Divining Rod, or such a question as, Do certain rivers freeze from the bottom? he will hardly discuss seriously. All this makes his knowledge of greater value. I do not think every one should be of this way of thinking. Columbus found America by his faith and reason, but the old gentleman's knowledge is always his own experience, which causes me to tell him he ought not to believe there is such a place as America, as he has not been there.

On the same principle, he has never had any disease among his Gladioli, and therefore he does not believe there is any, or ever was any disease in the Gladioli in England. Here in the nursery they always do well, and I don't see any special quality in the natural soil to account for it. Here and there it is strong loam on gravel, and here and there a deep loam probably on Blue Lias. A good strong loam, such as prevails in England, is the general basis. In this the Gladioli thrive and multiply, but some sorts increase slowly and some quickly. Many good

gardeners and writers about gardening have said, "Oh, but there are many beautiful sorts sent out which never appear again." This is not correct, as here are preserved all the sorts exhibited offered by the firm in quantity; and some propagate very slowly, as the brood is sparsely generated. Let no man say it again. We have the old man's word.

There are 1600 varieties grown here, and twenty acres planted every year. The old man complains of the treatment at the hands of those who cannot grow the Gladiolus, and of the fuss made about disease, which, he says, will not exist if you do what he does. This is what is done here:—The bulbs are taken up when the stems are still green. Leaving the bulbs in the ground till the stems are brown may be the cause of much of the so-called disease common to other gardens. Keep plenty of the soil on the corms, so as not to disturb the little spawn. Then place them in a shed in boxes. In spring knock off the dirt, and wash out the spawn, which is separately treated. Here they tear off the old skin of the old corm, and the young corm is fresh and silvery. It is amusing to watch the process of rogueing. Owing to the impossibility of keeping the labelling perfect on such a gigantic scale, many Gladioli get mixed up with the true sorts. These rogues are picked out when the dry bulbs are shelled. The boy in charge soon learns to know a rogue (or wrong kind) when he uncovers with a knife the growing point of the corm and tears away the old skin. The old gentleman says he could name about fifty varieties by merely examining their corms. Here he stands with a small candle overlooking these boys at night, and most picturesque is the sight. The soil is prepared for growing them in October, and trenched 2 feet deep, large quantities of fresh manure being dug in with it. Then in spring the Gladioli are planted 4 inches deep in sand. One thing of wisdom the old man told us—all the best sorts have rather falling leaves. Any position will do, the more open the better; no exposure is too much. Very wet weather in spring may hurt them, or great drought; but great wet in the growing and blooming season is good for them. Turnips or Cabbages are equally affected by bad seasons, and the Gladiolus is as manageable as are these, and on the whole there is no plant so easily grown which offers such a return to the grower. Old garden soil is to be avoided if it fails, and new loam or turf to be brought in by the cartload.

It may surprise many people, as it did me, to find that this firm did not take up the cross-fertilisation of many lovely species of Gladioli with the gandavensis section. I understand it now. Mr. Kelway is that almost extinct personage—a florist. In the mind's eye of a florist a flower is not so much a flower as a figure of Euclid, a circle, a rhomboid, a Catherine-wheel, a parallelopipedon. Nature, with her accidents and miscarriages, is to give birth to mechanical perfection. Perfection is all the cry, forgetting that the beauty of Nature's leaves is that there is no perfection; all are different; that Nature's trees are all unequal, that her clouds are never formal, and that nothing but a Houseleek, which has no other beauty but exactness, has perfect form. If the Venus of Milo is perfect, what are Raphael's Madonnas? Their chins must be too small, or the Milo's waist too large. The whole glory of Nature is, that she is just a little imperfect, and in nothing is she more emphatic in this point than in flowers. George Macdonald somewhere says of a lawn, "It was not immaculate of the sweet fault of Daisies." Think of this ye machine-minded men—mowing-machine-minded I should say. Who would paint a perfect flower?—perhaps a Dutchman; no one else. What are the most perfect flowers? White Lilies, none with the same curve; white Romneya, lying like a flag on the air; white Nelumbos, heavy on one side with their own loveliness? What is perfect? The artist chooses a Pansy with its petals turned down; a Japanese Iris, keeping all its form, but its edge crinkled; a Stuartia branch, novel in every blossom; or a single white Camellia, every petal modulated with variety. These, however, are hardly the plants usually grown by the British John Bull gardener; but to the florist, the flower must possess what he considers form rigid outline, many flowers on the same spike, exactly filling the space, not like the peeping bloom on the starry Asphodel. The Kiss-me-Quick blossoms: they must hold their heads up (not droop like Saundersi); their colours must be distinct and primitive, not as softened as in Astrantia, or indefinable as as a morning cloud. With these ideas great results have been achieved, and let us be thankful. Perhaps without such a standard no good results could be attained. The old gentleman would consider all crossing with such superb species as namaquensis, cruentus, or Saundersii a going back—a decreasing in size, and a depression of his standard. Personally I am for these forms, and gladly hail the splendid varieties raised by Lemoine from purpureo-auratus, or the enormous hybrids of Saundersi raised by Max Leichtlin, and now in America, after being rejected by the English growers. The rule, that the flower is to be of one shape or another is no doubt a good rule for hybridists, but it has caused to be rejected myriads of glorious plants which would now be a source of delight to the educated plant grower, who is just as good a judge in nine cases out of ten of whether a flower is beautiful or not (not of whether it touches certain rules and standards) as the professional florist. I am not sure whether I would not submit the judgment to a flower-loving child. He would have no rule about pips, and pops, and dobs, spots and blobs. In colour, form, and size his unsophisticated eye might have the truest judgment. Mr. Kelway cannot understand, any more than Mr. Bennett, of Shepperton, why we want single flowers besides the doubles. He groans when he thinks of all the lovely single Dahlias he has thrown away in times past, and there was one in particular, called Hanoverian, he was lamenting over this morning. "The same," he says, "with Pyrethrums. The public will have singles;" and here in his nursery is the glorious new scarlet-crimson Lord Lansdowne, the desired of all gardeners, a single crimson Daisy.

If Mr. Bennett would raise a semi-double Maréchal Niel, I'll be bound he would be astonished at the amount of ignorant people who would want to buy it. The florists' object is perfection, but I wish so much duplicity of petal were not attendant on perfection. Flatness, substance, roundness, they call perfection. Relative perfection we love: it is the looking-glass of untrained Nature. I was asked yesterday if the right way to train a single Dahlia was to put it on a gridiron of sticks and tie out every blossom all in one direction. I said you might as well try to see both sides of a lovely woman at the same moment from the same point of view. The beauty of a plant is not merely in the flowers growing towards you, but in all the growths away from you—in the back of the flowers, and branching and the flower-buds. All this is rather a contention between the newer way of looking at things and an older one, which has done good work in its time, but committed many monstrosities, and I hope I have helped to slay the Jabberwocky. *Frank Miles, Shirehampton, Bristol.*

(To be continued.)

Plants New or Noteworthy.

ANTHURIUM BREVILOBUM, *N. E. Br., n. sp.*

Of this novelty I had specimens sent me in December, 1882, by Mr. F. W. Burbidge, from the Trinity College Botanic Garden, Dublin; and now Mr. F. Moore, the director of the Botanic Gardens, Glasnevin, Dublin, sends me the same plant. It comes near A. subcordatum, Schott, but is at once distinguished from that species by its somewhat cuspidate-acuminate leaves. Of its history or native country I can glean no information. Its horticultural value may be gathered from the following quotation from Mr. Burbidge's letter:—"Its glossy leaves and graceful habit render it a neat, effective, and distinct decorative plant."

Stem elongating, but with the internodes scarcely or not at all developed, rooting. Petioles 12—15 inches long, including the ¾-inch long geniculus, ⅓ inch thick, terete, narrowly and acutely channelled down the face, with the edges of the channel obtusely rounded, green or brownish-purple. Blades of the leaf 8—10 inches long, 4—4¾ inches broad, parchment-like in texture, cordate-ovate, somewhat abruptly contracted into an acuminate point ¾ inch long at the apex, slightly cordate at the base, the notch being only ⅓—¾ inch deep, and the broadly rounded lobes being consequently very short, bright shining green above, paler beneath. Midrib prominent and rounded on both sides; from the very base of the midrib are given off on each side three slender nerves, the outer of the three runs out to the margin at about the level with the insertion of the petiole, the middle one runs out at about a quarter the way up, whilst the inner one is continued to the apex of the leaf at a distance of ½—¾ inch from the margin; from the midrib to this nerve on each side run seven or eight slender ascending primary lateral veins, which are nearly straight or only slightly curved; all the veins and nerves are impressed above, slightly prominent beneath. Peduncle 12—16 inches long, terete, brownish-purple. Spathe amplexicaul at the base, not decurrent, 2 inches long, ⅓ inch broad, narrow lanceolate-acuminate, spreading, purplish. Spadix stipitate, 3—4 inches long (including the ⅛—⅜ inch long stipes), 2—2½ lines thick, slender and slightly tapering, dark purple-brown; flowers about ¾ line in diameter. *N. E. Brown.*

Odontoglossum retusum, *Lindl.*

This lovely Odontoglossum flowered nearly twenty years ago in England, the first introduction having been made by Messrs. Backhouse & Sons, the last by Mr. F. Sander. Messrs. Backhouse & Sons had it from their collector, my late countryman, Dr. Krause. He stated there had been inflorescences with 100 to 150 flowers: from my numerous specimens, amidst which those of the late Professor Jameson are the nicest, I do not doubt this. The typical specimen in Dr. Lindley's herbarium, gathered by Hartweg, the original discoverer of the plant, is rather poor, the collector having tried to get an entire plant on to one sheet. Thus very often our herbaria give no full evidence of the beauty of a plant.

It was likewise collected by Wallis, and imported by Director Linden, nearly, if not quite, at the same time. There was a kind of race between the two collectors, always a very objectionable accident for the employers. Mr. Sander had it from his assiduous collector, Mr. Hübsch.

From these Sanderian plants I had lately received two inflorescences. A grand specimen flowered last year, at Peckau, with Baron von Hruby. What a fine companion to Odontoglossum Edwardi. Both much alike in growth and inflorescence, dimensions of flowers and shape, but the one is more or less vermilion, the other purple-mauve. Like the Calanthes, many Epidendra, Oncids, &c., they are only stately when seen in masses. Baron von Hruby's plant had mauve ovaries and pedicels, and a mauve line at the base of each sepal and petal on each side. Lip light red.

And now I have before me a branch of an inflorescence, kindly sent sent by Mr. A. H. Smee, the Grange, Hackbridge, Surrey. This has flowers which fully correspond in colours with my copy of Dr. Krause's sketch, kindly lent me by Messrs. Backhouse & Sons. They are orange-red, with green on the line where mauve is to be seen in Baron von Hruby's flowers. Lip orange. *H. G. Rchb. f.*

Odontoglossum rhynchanthum ×.

Odontoglossum Wallisii and O. purum appear to be connected by intermediate mules. O. Wallisii, first introduced by Director Linden, is far finer, has far larger flowers, with triangular serrate wings to the column, a large pandurate anterior blade to the lip,

with six bristles and two dentate ligulate keels at the base. O. purum, first imported by Messrs. James Veitch & Sons, has fewer bristles, triangular keels, and the disc of the blade of the lip hairy. Now, there are plants with a lax raceme, ligulate acute sepals and petals, yellow with a narrow brown line, petals with a few brown spots at the base, and a curions lip, the anterior blade of which is narrow and acuminate. Four or two lanceolate keels, sometimes bidentate, as in O. nævium; no bristles. I mark it with a ×, as it may be a hybrid between O. purum and O. Lindleyanum. I had it lately from Mr. F. Sander. *H. G. Rchb. f.*

"THE BOTANICAL MAGAZINE."

(*Continued from p.* 346.)

Parkinson.—In 1629 appeared the first edition of good old John Parkinson's *Paradisus in sole Paradisus Terrestris*, and in 1656 "the second impression, much corrected and enlarged." This genial and well informed author was an "apothecary of London, and the King's Herbarist," and the second or English title of his book is:—*A Choice Garden of all Sorts of Rarest Flowers, with their Native Place, Birth, Time of Flowering, Names and Vertue to each Plant Useful in Physic or Admired for Beauty;* and in it he figures and describes a great variety of Lilies, Fritillaries, Tulips, and Narcissuses. The number of the last-named is large, and the figures so good that the lovers of these beautiful flowers can profitably use the work and obtain much interesting and useful information from it even now. Other leading kinds of flowers are Hyacinths, Crocuses, Irises, Cyclamens, Anemones, Ranunculuses, Auriculas, Primroses, Wallflowers, Stocks, Violets, Pansies, Columbines, Larkspurs, Poppies, Marigolds, Carnations, Pinks, Campanulas, Hollyhocks, and Roses. Among the few more tender plants included are Balsams, Nasturtiums, and Camellias, but Parkinson says of the last:—"It doth not abide the extremities of our winters, either abroad or under covert, unlesse it meet with a stove or hothouse, such as are used in Germany, or such other like place; for neither house nor cellar will preserve it for want of heat."

From the foregoing passage it appears that heated plant-houses were unknown in England in Parkinson's time, though in use on the Continent. The only artificial means of raising tender plants he alludes to is a bed of dung, where he gives instructions in raising the Tobacco plant, "which was cherished in gardens, as well as for the medicinable qualities as for the beauty of the flowers." Of Nasturtiums he speaks in high praise; associated with Carnations or Gilliflowers "they make a delicate tussimussie, as they call it, or a nosegay, both for sight and scent." I cannot leave this enthusiastic old gardener without one quotation from his chapter on "The order and manner to plant and replant all sorts of outlandish flowers." It runs thus:—

"And I do wish all the gentlemen and gentlewomen, whom it may concern for their own good, to be as careful whom they trust with the planting and replanting of their fine flowers, as they would be with so many jewels, for the roots of many of them being small and of great value may soon be conveyed away, and a clean tale fair told, that such a root is rotten, or perished in the ground, if none be seen where it should be, or a counterfeit one hath been put in the place thereof; and thus many have been deceived of their daintiest flowers, without true knowledge or remedy of the defect."

Establishment of Botanic Gardens.

Incidentally I may mention here that the Botanic Garden at Oxford was established in 1632 by Henry Earl of Danby, who gave for this purpose five acres of ground, and built greenhouses and stoves and a house for the gardener, and further endowed the garden. Chelsea Garden was founded about the year 1673, and Cambridge in 1762. The Edinburgh garden was established about 1780, and it is recorded that James Sutherland so successfully cultivated it that he had 3000 species of plants growing in 1783. Kew was leased by the Prince of Wales, son of George II., about 1730, and the garden laid out by Sir W. Chambers; and George III. purchased it about the year 1789. In 1788 a greenhouse, 110 feet long, was built for Cape plants; and in 1792 the present greenhouse was erected for New Holland plants. The former was demolished within the writer's knowledge of Kew.

Pulteney informs us* that after the revolution the Royal Gardens at Hampton Court were rich in fine plants, and that at St. James's was [illegible] considerable note, if we may guess by [illegible] plants Plunkenet received from it. The L[illegible] Beaufort had a garden richly stored at Badi[illegible] Henry Compton, Bishop of London, ano[illegible]; and many private gentlemen vied w[illegible] in these elegant and useful amusements. [illegible]dens of Dr. Uvedale, of Enfield; of Mr. Du Bois, an East India merchant; of Mr. Courten, and others, afforded much assistance to the labours of Ray, Plunkenet, and Petiver.

I shall again refer to Ray, who did so much to elevate botanical science by introducing a system of classification of plants. Other noted English writers on botany of the seventeenth century were Plunkenet, Petiver, and Sloane, whose collections of dried specimens of plants are preserved in the British Museum; an institution founded upon the collection of Sloane, who was also largely instrumental in establishing the Chelsea Botanic Garden. Plunkenet was superintendent of the garden at Hampton Court during the latter part of [illegible] all these writers were more active with dr[illegible] than living plants.

My object being to give an idea of the state of flower-gardening immediately before the *Botanical Magazine* came into existence, I must not dwell so long on this theme as I am tempted to. Therefore I make a leap of a century, and take a look at John Martyn's sumptuous *Historia Plantarum Rariorum*, dated 1728. As was the custom of the period this book is a folio, and a large folio, and it was issued in parts from 1728 to 1732, when it was discontinued on account of its costliness, after the publication of fifty plates. It was designed to contain coloured figures of the natural size of such curious plants as had not been figured before, together with their descriptions and culture. The plates are mezzotinto, and were painted by Van Huysum, and engraved by Kirkall; most of the plants represented were cultivated in the Chelsea Botanic Garden, and many of them were introduced by W. Houstoun, a surgeon in the Navy, from the West Indies and Mexico. They include several species of Passiflora and Cassia, and the genera Turnera, Gronovia, Martynia, Milleria, &c. Houstoun himself, who met with an untimely death in the West Indies, had engraved the flowers and fruits of several, and given them generic names (this was shortly before Linnæus proposed his famous binominal nomenclature), and Sir Joseph Banks, subsequently acquiring these engravings from Philip Miller, published them under the title of *Reliquiæ Houstonianæ*, with Houston's names and the Linnean names. I may mention, as it has often been overlooked, that Martyn gives the Linnean names of the plants in the *Historia* on an unpaged leaf immediately after the preface. Three or four of them were, however, first named by Philip Miller. Besides the plants from the American region there are three or four Pelargoniums, including P. inquinans, the parent of the "scarlets;" a Mesembryanthemum, and an Aloe from South Africa. Noteworthy, too, among the figures is that of Bletia verecunda (Helleborine americana), which I believe was the first tropical Orchid cultivated in England, and the manner in which it was introduced very remarkable. A dried specimen was sent to Peter Collinson (who had a fine garden of hardy plants at Mill Hill, Hendon), from Providence Island, Bahamas; but the tuber appearing to have life in it, he sent it to the garden of a gentleman named Wager, where it was placed in a hotbed, and grew and flowered the following summer.

* *Sketches of the Progress of Botany in England*, ii., p. 104.

Bradley.

Another book meriting notice here is Bradley's *Historia Plantarum Succulentarum*, originally published in decades between the years 1716 and 1727, and subsequently as a whole in 1714. Only five decades appeared. The copy at Kew is of the second edition, and partly coloured by an amateur hand. Among the genera represented are Cereus, Mesembryanthemum, Agave, Echinocactus, Euphorbia, Aloe, Gasteria, Stapelia, Haworthia, Sedum, Cotyledon, Kleinia, and Crassula. Bradley claims to have himself introduced many of the plants figured from Amsterdam into English gardens.

In 1725 Dr. J. Douglas commemorated in a special pamphlet the colonisation in Guernsey of the beautiful Japanese Nerine sarniensis, bulbs of which had been cast ashore from the wreck of a ship, and grew and established themselves "to the surprise of the inhabitants and the delight of the florists and botanists." *W. B. H.*

Note.—At p. 346, top of col. 3, for Tusser's *Five Hundred Pointes*, read Tusser's *Five Hundredth*, &c.

(*To be continued.*)

THE FLOWER GARDEN.

BEDS OF HARDY PERENNIALS.

Hollyhocks may now be planted in the beds or back of the borders prepared for their reception. A spadeful or two of sharp light compost about their roots will greatly assist them in starting. Beds of Phloxes and Pentstemons should also be looked to. The old stools of Phloxes may require division; it is best to have those so that they will throw from six to eight good shoots rather than a thicket of small ones. The beds require to be well made up every year, as the plants have a tendency to grow out of the soil. Young stock which was reared from cuttings last autumn in cold pits may be transferred to the open beds. Pinks, Carnations, and Picotees may now be put out-of-doors, the beds for their reception having been well enriched and the soil turned over two or three times. Plantations which were made in autumn should also be gone over and carefully inspected. It will probably be necessary to replace some of the plants, and make all firm in their places, as most of them will have been loosened by frosts. The beds should receive a good stir up with the Dutch hoe. It is a mistake to root out plantations which have only been made the previous year, as these make a far better display the second year than the first. The individual flowers will certainly not be so large, but the number will be greater. Give any such a good top-dressing with decayed manure and fresh soil in equal proportions: the crop of bloom will amply repay the trouble. Pansies and Violas may also be transferred from the shelter pits to the open beds.

Bulb Beds.

Bulbs are now making rapid progress towards flowering. If not already done a good mulch of cocoa-nut fibre refuse or spent Mushroom dung should be given them, to prevent the rain from splashing the foliage and flowers. It will be necessary to support the flower-stems with neat stakes, and hoops should be placed over the beds in readiness, so that some protection of mats or canvas can be placed over when required.

Spring Flowers.

All beds of spring-blooming plants should receive every attention, to keep them clean and neat. Plant all hardy edgings as soon as possible, also lines of Dactylis glomerata or Ribbon-grass. This last is not suitable for edgings unless for large beds. Where the taller subjects are grown, remove coverings by degrees from the more tender plants ere they start to grow, else the young shoots will blanch and become spindly.

Shrubs.

The pruning of shrubs should be carried on as rapidly as possible, but in the case of shrubs that flower caution must be exercised, else the display of flowers will be sadly diminished. Those which flower on the past year's growth had better be left alone until the flowering period has passed, but the less pruning such receive the better. The following are some of the subjects which flower on the past season's growth:—Almond, Andromeda, Azaleas, Chimonanthus fragrans, Kalmias, Rhododendrons, Calycanthus Fothergilli, Cherry, Hawthorn, Philadelphus, Deutzia, Daphne Mezereon, Jasmine, Ribes, Weigela, Symphoricarpus. The subjoined flower on the present year's growth:—Genista, Gleditschia, Tamarix, late-flowering Spiræas, Broom, Hypericum, Coronilla, Colutea, Clethras, Magnolia grandiflora, &c. The following spring flowering shrubs are very effective objects: — Common Almond, Cydonia japonica. When planted on a wall with a south-west exposure Prunus divaricata is a very floriferous subject; Magnolia Soulangeana makes quite a fine feature on a wall, as does also Clematis indivisa. *W. M. Baillie, Luton Hoo.*

Orchid Notes and Gleanings.

CYPRIPEDIUM VENUSTUM VAR. PARDINA.

Cypripedium venustum has been a resident in our gardens over seventy years. At one time it had the lion's share of patronage among gardeners, and certainly a good specimen of it commands attention, In our times, however, the genus has multiplied to such an extent that it takes a good venustum to hold its own. C. venustum var. pardina, the subject of our illustration (fig. 76), taken from Mr. F. G. Tautz's collection at Goldhawk Road, Shepherd's Bush, is perhaps the finest and certainly the largest flowered variety. The sepals and petals are white striped with green, the petals being also blotched with dark chocolate. The lip is greenish-yellow, tinged with rose. C. v. spectabile, of Williams, is also a very handsome flower of medium size, but bright colour, and clearly defined markings. All the varieties thrive well in a greenhouse.

Fig. 76.—Cypripedium venustum var. pardina.

Orchids at the Dell, Egham.

There is an air of comfort and sturdy strength about Baron Schroder's Orchids, and in the larger and warmer houses the plan adopted there of arranging them with specimen plants of such things as Anthurium Andreanum, A. Warocqueanum, Alocasia Veitchii, &c., not only conduces to their more effective display but evidently also to their better and cleaner growth; the great masses of Dendrobiums of the thyrsiflorum, Farmeri, and densiflorum section, and the warm-house Cypripediums especially delighting in the situations given them at The Dell, in houses containing plants with fine foliage. Among the Cypripediums the queen of all hybrid forms, C. Morganæ, figured from plants in *Gard. Chron.*, vol. xxvi., p. 241, is again in bloom with three spikes of eleven splendid flowers. The variety is matchless, and reminds us very much of the famed C. Stonei platytænium. Also among the Cypripediums in bloom here are C. microchilum, a beautiful white hybrid; C. vexillarium, C. Lindleyanum, a very curious species with hairy yellow flowers; C. concolor, C. Godefroyæ, C. Harrisianum superbum, C. euryandrum, C. villosum, C. Lowii, C. Haynaldianum, C. barbatum Warneri, C. Argus, C. Rœbeleni, C. callosum, and many varieties of C. insigne. In the same house Vanda Cathcarti has four spikes, Angræcum sesquipedale, is well furnished with bloom; A. Leonis, and the rare Dendrobium Ruckerianum, D. amethystoglossum, the white forms of Dendrobium macrophyllum, a plant of the rare white variety of D. bigibbum, and others are in flower.

The beauty of the Cattleya-house at The Dell has often been described, and it suffices to say that the plants retain their vigour undiminished, and the display of flowers is as brilliant as usual. There are many grand varieties of C. Trianæ in bloom, one white one, which has much the form of C. Wagneri being very distinct; but the best of all is C. T. Schroderi, which when size, form, substance, and colour are considered, would probably be passed by competent judges as the best Trianæ extant. Also in flower in the Cattleya-house are some grandly flowered specimens of Dendrobium Wardianum and D. nobile, one of which is white with chocolate eye; the lovely and unique D. Wardianum-crassinode, a supposed [illegible] Lælia flava, several L. acuminata, Epiden[illegible] [illegible]ilum, and in sheath or bud a priceles[illegible] [illegible] of strong plants of hybrid Lælias and Ca[illegible]

[illegible] ne-house adjoining are some immen[illegible] [illegible] C. cristata in flower with good ones of C. [illegible] [illegible]niana, C. c. alba, C. ocellata maxima; a pair of Dendrobium Ainsworthii with about 500 blooms between them, D. heterocarpum, D. moniliforme, and the new D. euosmum leucopterum.

In another warm house Odontoglossum Roezlii is superbly in flower, and the Bolleas and Pescatoreas well set with bud, as are also Phaius tuberculosus and other rare plants. Also in bloom are the true Calanthe Turneri and numerous forms of C. Regnieri, and a strong plant of C. Textorei. The Phalænopsis, too, seem to have made themselves at home at the Dell, but only P. Schilleriana is in bloom. Other fine things showing buds in quantity are the Vandas; the large and healthy lot of Odontoglossum vexillarium, the fine Cymbidium eburneum and C. Lowianum. In the cool houses the unique collection of hybrid and spotted Odontoglossums is in fine order, as they should be, considering the care Mr. Ballantine bestows on them. No expense is spared in anything likely to benefit the condition of the plants, and to this end, notwithstanding a large storage for rain-water already existing, a new underground tank capable of containing 24,000 gallons, has just been completed.

In the cold-houses is the beginning of what will be a grand display of Odontoglossums, many fine O. crispums being already in bloom, and in bud O. c. Ballantinei and other grand forms. In bloom are O. c. delliense, O. Hrubyanum, O. Andersonianum flavum, O. Hallii, O. Sanderianum; several good O. Pescatorei, O. Oerstedi majus, a beauty with fourteen large white flowers; O. aspersum splendens, many scarlet Sophronites, O. Rossi majus, and O. Cervantesi, and in the centre of the house a fine specimen of Masdevallia ignea with about 150 flowers. Other rare things are expanding in the Masdevallia-house, and about the whole of the well-kept establishment the cleanness and freshness of the flowers, foliage, and everything about the plants, is such as to speak volumes for the good culture as well as for the pure air in which it is carried out. In an ordinary cold greenhouse the plants of Disa grandiflora are vigorous beyond compare. Their pots are plunged in sphagnum moss, and the situation in which they are placed is light, cool, and airy.

Large Spikes of Odontoglossum crispum.

The information given by De B. Crawshay, Esq. (p. 249 of your issue of February 19), about the length of spikes and number of flowers of Odontoglossum crispum must be of very great interest to a number of your readers, especially to those situated in distant and out-of-the-way parts of the country, and who have little chance and opportunities of seeing other collections except those under their own charge. Mr. Crawshay gives the history of a plant imported in 1885, and in flower now, which is very creditable to those having it under their charge; and in referring to the plant at Lythe Hall as having a spike over 2 feet long, and carrying fifteen flowers, says that he himself has a number of spikes over 2 feet long, but that the greatest number of blooms he has on them now is thirteen. I enclose you a bloom of a spike 28 inches long and carrying seventeen blooms: the first flower is situated 9 inches from the base of the spike, and the flowers occupy the other 19 inches; the largest bloom (enclosed) is 3¾ inches across, and the smallest 2½ inches; the plant was bought in an imported state at Mr. Stevens' Rooms in 1883; it flowered for the first time in 1885, a small spike

Fig. 77.—Cyphomandra betacea: the tree tomato. (see p. 386.)

with nine flowers; in 1886 it had thirteen flowers, length of spike was not taken. The plant has six bulbs, and is throwing a second spike from the bulb in flower as above. It is a narrow-petalled variety, without any markings, delicate light cream, back of sepals tinged with rose. We do not consider it of any great merit, but as it happens to be in flower at the present time I give it in reply to Mr. Crawshay's desire that growers would give their experience. We have other plants throwing spikes 2 feet long, with fifteen blooms. *J. McPhail, Gardener to Col. Cooper, Markree Castle, Sligo.*

Cypripedium Gardneri.

A handsome new Cypripedium has recently been found in New Guinea, or rather in Jobi Island, a small island on the north-west of New Guinea, which would be a decided acquisition if successfully introduced to cultivation. It is allied to C. philippinense, better known as C. lævigatum, but the twisted petals are said to be much shorter, being only twice the length of the lip, and the colouring of the sepal of a far brighter yellow. It is described by Dr. F. H. H. Guillemard, in his recently published work, *The Cruise of the Marchesa to Kamschatka and New Guinea*, vol. ii., p. 309, the plant being figured from a photograph on the following page. Speaking of a visit to Jobi Island he says:—"In the jungle near the village there were few striking flowers, or, at least, few that we had not met with elsewhere. A Nepenthes, which grew in some abundance, with dwarfed and ungracefully shaped pitchers, was, however, new to us, as was also a Cypripedium, of which we found a single specimen only, growing at the bottom of a large tree. This latter Orchid was very handsome both as regards shape and colouring, the flower-stalks bearing three or four blossoms with pendulous ribbon-shaped petals, twisted into a graceful spiral, and tinged with purple. The dorsal sepal was marked with alternate stripes of dark brown and yellow, while the lip was of a paler shade of the same colour, less distinctly striated." The discovery is an interesting one, this being the second species now known from New Guinea, C. glanduliferum having been described by Blume many years ago, though it does not appear to have since been met with by any one.

Cypripedium callosum.

We learn that there is now in flower in Mr. Tautz's collection another plant of this species besides that recently figured, and the dorsal sepal of which measures no less than 3 inches across.

Maxillaria porphyrostele.

A neat and pretty species, allied to M. picta, though differently coloured and less showy. It is a vigorous but compact grower, and when seen in a large mass with numerous flowers—as in the plant now flowering in the cool-house at Kew—it is decidedly an attractive plant, though it has nothing in the way of brilliant colours about it. The flowers are erect, 1½ inch across, light greenish-yellow in colour, with a few purple lines towards the base of the petals, and a purple column. It was imported from Brazil, from the province of Rio Grande do Sul, by Mr. William Bull, and flowered for the first time in 1873. *R. A. R.*

Cattleyas at Howick House, Preston.

With this post I am sending you some flowers of Cattleya Trianæ, which are a fair sample of a fine lot we have at present flowering here. Our first blooms of this species opened in the last days of December, and gradually the main batch pushed up the buds in the sheaths and the flowers expanded, until at the present time we have 280 blooms open with a good number of buds still to expand. Some of the first to open have been cut off, we have, however, many now in flower that have kept perfectly fresh for six weeks.

You will notice amongst those sent some varieties of unusual size and colour: with great breadth of petal and very full and expanding labellums. We have not hitherto attached any special name to any of the varieties, although we consider some of these sent as so far in advance of the usual type that they are worthy of some distinct appellation.

We have the pure white form also, just opening—a most beautiful variety, very full in each division, with a very nicely fringed labellum. Our varieties range from this pure white form, through the many varying shades of colour, to the dark and striking ones similar to those sent.

It always seems to me that this winter-flowering species should be grown in large numbers in every garden in which the culture of Orchids is carried on. I can well remember the time when one of the most famous collections round London could boast of

but one plant of this species, and that was only in a 6-inch pot, and by the side of this rarity (as it was then considered) was a plant of Cattleya Warneri, scarcely so large, and the worthy proprietor was considered a very fortunate gentleman in having secured two such seldom seen species. If these plants gave one bloom in the twelvemonth it was considered a very successful feat.

When, however, about 1860, Messrs. Hugh Low & Co. succeeded in importing a large batch from the neighbourhood of the Magdalena River, New Grenada, most of the gentlemen then growing Orchids were anxious to obtain pieces, and the greater part of this grand lot were soon disposed of. Mr. Dodgson, of Blackburn, amongst others, obtained some pieces, and in a short time C. T. Dodgsoni appeared, and later on C. T. Osmani flowered in this collection. These two varieties will always be considered famous, on account of the prices they fetched when Mr. Dodgson's plants were sold off, the former realising 185 guineas, whilst Osmani fetched 210 guineas. During the past few years large numbers of this species have been imported, and amongst them are to be found most magnificent forms, as witness those sent. The varieties known as the Popayan forms have very broad labellums, and the lip of deep rosy-purple, the colour reaching a good way up the throat, the upper portion of which is often of a deep orange colour. With such recommendations, combined with comparative cheapness, and also a fairly easy and successful method of treatment, this species should now be grown in quantity, and will always give pleasure and satisfaction, for since it blooms when scarcely any others of the labiata section are flowering it asserts its own superiority at a time when Orchid blooms are most appreciated.

The flowers may be truly described as being amongst the finest forms of Cattleya, and the Lælia harpophylla was particularly large, and the colour rich; the Odontoglossum Rossi variety is the erubescens of some collections, the markings being of a rich brown, contrasting in a decided manner with the white of the rest of the flower.

I enclose with the C. Trianæ blooms some flowers of Lælia harpophylla, now flowering very freely with us, the individual blooms of this much resemble Lælia cinnabarina in form and colour; they are, however, a little more pointed, and the lip is much lighter than the other portions of the flower. We grow these two Lælias with the Cattleya Mossiæ in a temperature that often went up to 90° last summer, and during the present winter the glass has seldom been below 60°. Both species are now flowering well. Another plant of almost the same shade of colour is Epidendrum vitellinum majus, also in bloom.

Cœlogyne cristata Lemoniana is well represented here. We have four plants in flower, and are much pleased with it. Its purity and bright lemon colour are very attractive. I enclose a spike with six blooms on it.

Amongst a large batch of Odontoglossum Rossi majus we have flowered many excellent forms, both as regards size and colour; but only one has appeared, having the distinct peculiarity of the one I send (I have tied it to a good form for comparison). You will notice the pure whiteness of the labellum, and that the whole of this limb is white: hitherto all we have flowered have had the crest immediately below the column of a bright yellow, in this case the whole of the labellum is pure white. It is evidently not a mere freak, as all the flowers on the plant have come exactly similar to the spike sent. *W. Swan, Howick House, Preston.*

PLANT PORTRAITS.

Anæctochilus Lansbergiæ, *Illustration Horticole*, 1887, t. 1.

Miltonia Clowesii, Lindl., *Revue de l'Horticulture Belge*, March.

Rhododendron Victorianum ×, *Revue de l'Horticulture Belge*, March.

CULTURAL MEMORANDA.

GREVILLEA ROBUSTA.

This is a very useful greenhouse perennial; it is of erect and graceful habit, producing from the main stem, at intervals of an inch or two, dark green Fern-like leaves, therefore young plants of it from one to four years old are the most effective for intermixing with other plants, not only in the conservatory and greenhouse, but in forming decorative groups. Seed of it can be sown this month in sandy soil, covered lightly with some of the same description, and then placed in heat, placing over the pot or pan containing the seed a square of glass, and over it some moss: The seed, if good, should germinate in five or six weeks from the date of sowing. The plantlets should be potted off singly into small 60's after they have made an inch or two of growth, putting them back into heat near the glass, and should be watered and shaded from bright sunshine for a few days until the roots have taken to the new soil, afterwards shifting them into 4 and 6-inch pots as they require more room at the roots. They are not particular as to soil, but will do well in loam and leaf-mould (about three parts of the former to one of the latter), with the addition of a little coarse sand. This should be made firm about the roots in potting.

Winter-flowering Begonias.

If cuttings of the most useful varieties of winter-flowering Begonias, including fuchsioides, hybrida multiflora, Ingrami, manicata, nitida alba, semperflorens, and Pearcei, are taken during the present month and inserted in 48-size pots filled with light sandy mould, watered, and then put into a Melon or Cucumber frame or forcing-house, they will soon root; after which, if they are potted off singly into small 60-size pots, watered, and put back in heat, shifting them subsequently into 4-inch pots and attending to them in the way of stopping the shoots and giving water at the roots when considered necessary, they will make nice useful plants for supplying cut flowers in the stove during the winter months. *H. W. Ward.*

Phaius grandifolius.

I can fully bear out all that Mr. Smythe, of Basing Park, says, on p. 217, of this fine Orchid, having grown it for a number of years successfully. There are here two plants in 13-inch pots, with eleven spikes on each; and one in a 9-inch pot, with six spikes on it. I have to-day (March 1) measured three spikes, the lengths of which are respectively 42, 44, and 46 inches, with from twelve to eighteen blooms open, and averaging another dozen yet to open. They have been in flower since the third week in January, and will remain effective for some weeks to come. When the plants have done flowering they are put into an ordinary stove, repotted in good lumpy loam and peat in equal parts, with a little well-decayed cow-manure, and a plentiful quantity of coarse sand. The pots must be well drained, and the plants well supplied with water. The only rest we give them is by placing the plants in a lower temperature, as winter and short days advance giving less water. Directly the plants begin to open their flowers they should be taken to a flower-stove that is never allowed to get to a higher temperature than 60° by fire-heat. *J. Wilson, Broom House, Fulham, S.W.*

Double Petunias.

Cut-back plants of these showy greenhouse subjects which were not repotted as soon as they made a couple of inches of growth, should not now be disturbed at the roots, but instead, should have the surface-soil worked off the plants, and rather deep round the edge of the pots, afterwards replacing it with sandy loam, leaf-mould, and horse-droppings, at the rate of three parts of the former and one of the latter two. Train the shoots neatly to sticks, using only as few of the latter as are absolutely necessary to give shape and support to the plants. Cuttings inserted this month in sandy mould, placed in heat, will soon root. They should be potted singly into 3-inch pots, afterwards shifted them into 6-inch ones, and by stopping the shoots to make them branch, nice flowering plants will be secured, that will flower during the autumn months. The flowers are large, of good substance, varying in colour from white to crimson, bluish-purple, blotched with white, *vice versâ*, &c. *H. W. Ward.*

COLONIAL NOTES.

THE LUFFA, OR LOOFAH.

Is there not some mistake about this in the short article (p. 594, *Gardeners' Chronicle*, November 6, 1886) on "Luffas in Japan"? The Luffa, or Loofah, which is used as a flesh-brush, is stated to be the product of Luffa acutangula. Is it not rather that of L. cylindrica? I am well acquainted with these two kinds, and have them both growing here. Being on a visit to the "Old Country" in 1884, after an absence of ten years, I had an opportunity of noticing those exposed for sale in chemists' shops, and found them to be identical with the kind, viz., L. cylindrica, we grow here and use daily for bathing purposes, and which are often made into fancy articles, such as smoking caps, baskets, &c. Both kinds are similar in general appearance, foliage, and flower, the latter a bright yellow, but the fruit is very different, that of L. cylindrica having a smooth skin, which peels off clean from the vascular portion, leaving it in good order, without breaking the outside fibres. It is too bitter in taste to use as a vegetable. L. acutangula has a rough skin, with longitudinal furrows and sharp angles or edges from end to end; this rough skin does not peel off like the other, but breaks into small pieces, clinging to fibrous portions. The full-grown fruit is of the same length as that of its congener, but is much thicker, containing quite half as much again of the fibrous substance, which would make it an admirable material for padding. In the young condition the fruit, before the vascular portion is properly formed, is an excellent vegetable, quite equal to the best Vegetable Marrow. It is grown here for that purpose, but is not sufficiently known. *John F. Waby, Botanic Garden, British Guiana.*

New Zealand.

Beverley.—The word "Beverley"—from "Bever," warm, and "ley" friendly—is appropriately applied to the seat of Arthur Perry, Esq., one of those gentlemen to whom this part of New Zealand owes much, and who is one of the greatest patrons of horticulture in this island.

The main approach is by a broad drive sufficiently curved to make the ascent easy, and to give a feeling of security to both drivers and pedestrians. On each side are sloping banks planted with rare shrubs and flowers, both native and foreign. Here Pinus insignis has literally outgrown itself to such an extent, that its total eradication is almost a necessity to make room for less rampant and more valuable members of the Fir tribe. Roses are a specialty here, and you may find all the best old varieties, and a great many new ones, down to Mary Bennett and Grace Darling. Such is the proprietor's fondness for flowers that in some instances he sows the seeds himself and personally superintends them in their early stages of growth.

One of the chief features of this garden is its fernery, which contains subjects from nearly every quarter of the globe—sufficient evidence that these shade-loving plants, if kept moist enough, are at home in a temperature which is not too extreme one way or the other. The glass structures contain a valuable collection of plants for all the year round flowering. Here I saw a grand lot of Gloxinias, which the gardener, Mr. Knowles, manages capitally; and here also is grown one of the best collections of the tuberous Begonia on this side of the equator. In the Tropical-house are many genera, such as are to be seen in most European exhibitions, clean and

well grown, without a vestige of insect life. Here I also found my old friend Cantua dependens positively greeting me in its full loveliness out-of-doors against a wall.

Now for a word about the mansion, which is of semi-Elizabethan style, and situated on a gentle eminence, well protected, looking due east. From the terrace you have an uninterrupted and boundless view of the Pacific Ocean. This is one of the first places in the world that the sun smiles upon as he rises from his golden bath, situated as it is about 172° E. long.

In my necessarily hurried visit upon this occasion, there were many rare and good things I did not see, particularly the Rhododendrons, of which there is here a superb collection. *T. Smith, Timaru, New Zealand.*

THE ORCHID HOUSES.

HEAT AND MOISTURE.

In the Orchid-houses just now we must guard against sudden falls of temperature by using more generally the heating apparatus, thus with the aid of occasional gleams of bright sunshine we can to a certain extent lengthen the growing part of the year for heat-loving species of Orchids, and secure thereby a better maturation of their growth. Many Dendrobes delight in a high degree of temperature by sun-heat if the atmospheric balance be kept by supplying moisture in sufficient quantity. A dry condition of the air causes plants to become unhealthy, when they soon fall a prey to insect pests. I think this is why many find certain Orchids from hot regions do better in a cooler house, they having become starved by the heat through lack of moisture.

Watering and Potting.

When watering these always attend first to those that are most exposed to direct sunlight. In the East Indian-house, after the blinds are fixed on, the plants should be examined and such plants of Aërides as have become unsightly by the loss of their bottom leaves, can be brought into better form by setting the plants lower in their pots. In doing this it is best, if possible, to leave some of their roots on the outside of the pot or basket. Other plants that do not require potting should have the old sphagnum removed, and be top-dressed with freshly gathered material. Place this on the pot, lightly mixing with it some clean crocks. After each plant has been dressed or potted the surface of the moss should be made damp with water from a rose syringe, and this damping over should be repeated as often as the moss shows signs of being dry, but on no account water the plants heavily for some time. This will give any broken roots time to heal, otherwise much water at first will often cause damaged roots to decay greatly. Growth will be encouraged if the atmosphere be kept very moist when the temperature rises to 70° and over. To prevent the moisture from escaping too rapidly the top and bottom ventilators should not be opened at the same time. When the weather is dull make use of the bottom ventilators only, but when the sun shines brightly close these and give air from the top ones. *C. Woolford, Downside, Leatherhead.*

FRUIT REGISTER.

APPLE GOLDEN KNOB.

This large useful kitchen Apple is generally supposed to be in perfection from September to October. Mr. Hudson, of Gunnersbury House, has some very fine examples of it at the present time, as plump and fresh as when picked from the tree, thus establishing its claim to be a good keeper—so good, indeed, that in the absence of other sorts it may be—indeed is—used for dessert purposes. *B.*

Van Mons' Leon le Clerc Pear.

This is a very wayward and capricious Pear, and by no means to be trusted either to yield well or to reach first quality. In two counties I have known it very good, to wit, Norfolk and Somerset. A perfect fruit, really well ripened, is deliciously buttery and flavoursome. In the middle of last January an ardent Lynn pomologist, Mr. C. W. Morriss, showed me some very good specimens, which he had kept until then, almost unwrinkled. A Pear in season from November to January sounds very tempting; but, alas! our friend of the sesquipedalian name, only does that sort of thing once in a decade—peradventure, to show latent virtue. *Vagabond.*

Mela Carla Apple.

"Philomelon" sings no longer in your columns, at least, if he does he has abandoned his appropriate enough *nom de plume.* Not so very many have fruited this Italian Apple in England; he has been lucky enough to have done so. I tried hard to fruit it in an orchard-house, sparing no endeavour to take away its reproach of barrenness. Since then the tree has been turned out *sub jove frigido,* and nailed to an east wall. Curiously enough the east wind has taught this pampered hothouse favourite its duty to the owner of the soil, and it now bears freely enough. It would be interesting to know how others have fared with this alien. *Vagabond.*

Beurré Roland.

M. Pynaert describes and figures in the February number of the *Bulletin d'Arboriculture* a new seedling Pear, raised by M. Roland. It is described as specially suitable for cordons, being of moderate vigour. The fruits are of medium size, regularly pyriform, olive-coloured, covered with russet; stalk short, eye in a shallow basin; flesh melting, sugary, fragrant; season, March.

GARDENING FOR THE LITTLE ONES.

In their seed list, or "Vade Mecum," Messrs. Jas. Carter & Co. present their readers with an excellent illustration of a Pea plant. Knowing full well the value of such illustrations in the education of children, I carefully removed this plate from the book, and took it to the infant school at Feltham, and with the sanction of the head teacher invited a large class of very little ones, chiefly from five to six years of age, to answer questions respecting it. Of course in a market garden district like this, it was to be expected that children, accustomed as so many of them are to go into the field to assist their mothers to gather Peas, would know something about the plants, and I was not disappointed. Root, stalks, leaves, pods, their contents, habit, growth, colour of flowers, and nature of ripe seed, all seemed to be pretty well known; but the tendrils in the picture, so liberally depicted, seemed to puzzle the little ones somewhat, as these are generally less prominent in Pea plants that lie on the ground. Then it is a rare circumstance here—except in good gardens—to see Peas supported by sticks, as all such material is scarce and dear; hence it was not so easy to obtain answers in regard to an erect habit of growth. Still it was evident that, although the little ones had not seen any worthy illustration of the Pea plant before, they were well acquainted with its character, and its uses. Now, I would we could have in the schools in our rural districts drawings of similar dimensions, and as admirably presented as is this one from Messrs. Carter's book of all the leading food-producing plants found in fields and gardens. What a wealth of useful information these would be the means of affording to children, and how much more readily would the oral teaching of the teachers be comprehended. Natural history is a somewhat favourite subject with infants, because children ever love animals, birds, and insects; but it is obvious that elementary teaching in objects of common life, and especially in such matters as relate to gardening and farming, must have particular interest. Such instruction would tend in the first place to promote in children's minds an intelligent interest in those vocations, and through that interest might help to establish them on the soil. Largely in gardening, and specially so in agriculture, there are no other subjects which form important labour elements in which our workers exhibit such lack of elementary knowledge.

Gardening does in time lead to a higher appreciation of its charms, but the great mass of those who embark in gardening when young start without the crudest notions of what is essential to them in the shape of elementary knowledge. Thus the adornment of our schoolrooms with plant illustrations, and of food-producing plants especially, would be the best means to promote knowledge, which would in after life be of inestimable benefit. I should very much like to learn that numerous other large and well executed plant portraits like to the Messrs. Carter's Peas were to be obtained for similar beneficent uses. *A. D.*

THE KITCHEN GARDEN.

ASPARAGUS BEDS.

These should be lightly forked over, raked down and cleaned, being afterwards top-dressed with salt, fish-guano, or nitrate of soda. If new plantations are to be made the ground should be forthwith trenched and liberally manured, the surface soil worked to a finely pulverised condition for planting. This last operation, however, would be best deferred for a time, and until the intended plants have started into growth and are about 8 inches in height. Seedlings of not more than two years old are the best for the purpose, and give in the end much better results than older plants. The distance allotted in planting will in a great measure depend on circumstances; if for permanent beds, an average of 2 feet from plant to plant should be given, but if for lifting for forcing afterwards, less space is required. In planting care should be taken to preserve the roots intact, spreading them out flatly and regularly, and so deep that the crowns may be two inches beneath the surface. A deep rich sandy soil grows the best Asparagus; almost any kind of soil can be made suitable with good drainage and cultivation.

Planting-out Peas, &c.

Those raised in pots or on turves for this purpose will now be ready. Shallow trenches for planting in should be thrown out, the soil slightly ridged on the exposed side; carefully turn out those in pots, and plant with a trowel at a distance of from 6 to 12 inches apart in the rows, and afterwards give protection by intermingling with stakes small sprays or branches of Spruce or Laurel. Broad Beans raised for a similar purpose should be planted out, and treated in much the same manner.

Early London and Other Varieties of Cauliflower,

from the store-frames or from pots, can also be planted out, and if *cloches* or hand-lights are not available some temporary protection will be necessary, especially at night, and until the plants have started freely into growth.

Under Glass

attention should be given to the pricking out into pans, boxes, or frames, such things as Early Celery, Lettuces, Cauliflowers, and the like, while Capsicums and Tomatos should be potted on, the latter, when large enough, into their fruiting quarters; a warm frame should also be devoted to Vegetable Marrows; very good results also may be obtained by growing a few in 12-inch pots, and trained overhead in a light, warm structure; these come into bearing quickly, and at a time when anything in the shape of a change for the table is most acceptable and appreciated. *John Austen, Witley Court.*

Stinging Nettles.—A common fallacy exists that the irritating effect produced by the Nettle is due to the emission of formic acid. Dr. Haberland, of Vienna, whose researches are summarised in a recent number of the *Pharmaceutical Journal* by Mr. Alfred Bennett, however, proves to demonstration that the formic acid theory is quite untenable; the real cause of irritation appears to be a secretion of an albuminoid character, which acts like a ferment. But if we have got rid of an error, it does not appear that we have advanced much at present in the direction of truth.

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THE GARDENERS' CHRONICLE,
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W. RICHARDS, 41, Wellington Street, Strand, W.C.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

TUESDAY, Mar. 22 — Royal Horticultural Society: Council, and Fruit, Floral, Narcissus, and Scientific Committees.

WEDNESDAY, Mar. 23 — Royal Society of Literature, 21, Delahay Street, Westminster: Mr. W. Paul, F.L.S., on "Ancient and Modern Literature of Gardening."

THURSDAY, Mar. 24 — Covent Garden Life-boat Fund: Concert at St. James' Hall, at 8 P.M.

SHOWS.

WEDNESDAY, Mar. 23 — Royal Botanic Society's First Spring Show. Bath Bulb Show (two days).

SATURDAY, Mar. 26—Crystal Palace Spring Show.

SALES.

TUESDAY, Mar. 22 — Carnations, Picotees, Roses, &c., at the City Auction Rooms, by Protheroe & Morris.

WEDNESDAY, Mar. 23 — Roses, Shrubs, Fruit Trees, Border Plants, Bulbs, &c., at Stevens' Rooms. Lilies, Freesias, Roses, &c., at Protheroe & Morris' Rooms.

THURSDAY, Mar. 24 — Imported and Established Orchids, Tuberoses, Liliums, &c., at Stevens' Rooms.

FRIDAY, Mar. 25 — Imported Orchids, at Protheroe & Morris' Rooms.

SATURDAY, Mar. 26 — Roses, Shrubs, Fruit Trees, Border Plants, Bulbs, &c., at Stevens' Rooms. Roses and other Plants, at Protheroe & Morris' Rooms.

The Tree Tomato.

So much interest has been expressed with reference to this fruit, which is occasionally seen in our own markets, that we have thought it desirable to copy a coloured illustration which appeared in the *Revue Horticole* in 1880, p. 150 (see p. 383), and to request Mr. Morris, the Assistant-Director at Kew, to give us the benefit of his experience. This he has kindly done in the subjoined letter:—

"A full account of this plant was given by myself in the *Gardeners' Chronicle*, vol. xxi., n.s., April 19, 1884, p. 510. It is of shrubby habit, with broadly cordate and pubescent leaves, sometimes a foot long. The flowers are borne in sub-axillary cymes, of a pale fleshy colour with bright yellow stamens. They have the odour of Violets. The fruit is about 2 to 2½ inches long, and about 2 inches in diameter. When ripe it is of rich orange colour. In the West Indies it is called Tree Tomato; in Peru (its native country) it is known as Tomato de la Paz. It sometimes appears in Covent Garden Market, as I am informed by the Editor, under the erroneous name of Granadilla, as an importation from the Azores.

"When in Jamaica I was very favourably impressed with the value of this comparatively little known fruit, as it answers in every respect the purposes of the ordinary Tomato, while the plant itself is perennial and easily grown. The fruit is also produced abundantly during the winter months, from November to March, when ordinary Tomatos are not easily obtained. Unfortunately the plant is not hardy in England or in corresponding latitudes, nor will it stand extreme tropical heat. It is, therefore, subtropical, and flourishes best in hilly districts in the tropics, with a mean annual temperature of about 68° Fahr.

"During the last three years several hundred packets of Tree Tomato seed have been distributed to various correspondents in the Colonies, and very favourable accounts have been received of the introduction of this fruit to Ceylon, Southern India, and Eastern countries. Lately Dr. Shortt, of Yercund, sent to Kew a pot of preserve made from the Tree Tomato fruit grown in Southern India. *D. Morris, Assistant-Director, Royal Gardens, Kew.*"

To this we may add that the fruit is occasionally grown in this country, as we remember to have had specimens sent us for identification, and they have also been exhibited before the Scientific Committee. As is the case with most cultivated plants, there is a considerable amount of variation in the size, colour, and form of the fruit. Those now figured are more pointed than we have usually seen them.

In the *Revue Horticole* for 1881, p. 470, is a second coloured plate, representing two varieties obtained from seed of that orginally figured. One of these is yellow, and we mention the circumstance as we have just received from Messrs. Viccars Collyer & Co., of Leicester, a fruit under the name of Melon-Pear, which is clearly the fruit of a Solanum, very nearly allied to, if not identical with, the Tree Tomato and with the "egg plant." The specimen sent is seedless, and does not admit of absolute verification, but we have no doubt that the fruit in question is the produce of a Solanum. Assuredly it is not a Melon and not a Pear—sufficiently good reasons to the framers of popular names to call it a Melon-Pear. It has, it is true, much of the fragrance of a Melon. We are promised further specimens with flowers and leaves at another time, when the identification of this so-called Melon-Pear can be rendered certain. According to an article in the March number of the American *Gardener's Monthly*, this plant is called, in Central America, Pepino, or Cucumber.

Jubilee Proposals.

We continue to receive letters on the subject of the Gardeners' Orphanage, and other schemes, but which the congested state of our columns prevents our inserting. We are reserving these expressions of opinion for future use, or for the consideration of any committee that may hereafter be appointed. The schemes at present proposed are:—

1. An Orphanage, as proposed by Mr. Penny and "H. J. C.," the details to be settled hereafter.
2. The purchase of the right of presentation to existing Orphan Asylums.
3. A Benefit Society for gardeners.
4. A Benefit Society to relieve gardeners who may be out of situations.
5. The establishment of a separate fund for the express benefit of gardeners' orphans, in connection with, but, owing to the constitution of the Society, necessarily independent of, the Gardeners' Benevolent.
6. A contribution to the fund required to reinstate the Royal Horticultural Society.

All the schemes hitherto proposed come under one or other of these heads; No. 2 seems to be the most practicable scheme, but we invite our readers to favour us with their opinions as to which of these proposals they prefer. A postcard addressed to the Editor with the number of the proposal—1, 2, 3, 4, 5, 6, as the case may be—which the writer prefers, and with his name and address added (not necessarily for publication), might be sent to us, and would serve to test the general opinion of gardeners. It is suggested that a meeting be held in London shortly to consider the matter. In that case, the expressions of opinion above referred to would be valuable as showing which scheme was most generally acceptable to gardeners, and what amount of support might be anticipated. So far as we can judge at present, the majority of those who have written to us are in favour of Mr. Penny's scheme, the one herein designated as No. 1, but of which No. 2 is only a modification.

The Proposed Gardeners' Orphanage.—We are requested to insert the following intimation from the Secretary *pro tem.*:—

"I am desired to state that as soon as arrangements can be made a meeting of gardeners and others who have signified their interest and approval of the proposition to establish a gardeners' orphanage, or fund for the orphan children of gardeners, will be held in London to discuss the matter generally, and to take what steps may seem necessary in furtherance of the object in view. In the meantime it would facilitate matters greatly if those who are disposed to support the proposition would kindly send in their names, with any suggestions on the subject they may be pleased to submit, either to Mr. C. Penny, The Gardens, Sandringham, King's Lynn, or to me as under. *A. F. Barron, Royal Horticultural Society, Chiswick.*"

An Avenue of Palms.—For the formation of avenues in tropical and sub-tropical countries Palms, with their formal but stately shafts and majestic foliage, are particularly well adapted, as will be evident from an inspection of our supplementary illustration. The species of Oreodoxa are all natives of tropical America and the West Indies, but several of them are in cultivation in this country. We may here mention incidentally that the series of articles on garden Palms which have been given in our columns is necessarily interrupted for the present, owing to the absence from Kew of Mr. Watson, who has proceeded to the Cape for the benefit of his health. Our readers will share the hope that his health may be completely re-established, and that he may be enabled—as under favourable conditions he certainly will be—to turn his sojourn in South Africa to the best account horticulturally and botanically.

Horticultural Club.—The usual monthly dinner and *conversazione* were held at the Club-room on Tuesday, March 8, when there was a good attendance of members. The discussion was opened by Dr. Masters, who alluded to the history and development of the Chinese Primrose as affording a remarkable illustration of the phenomena of variation independent of those produced by cross-breeding or hybridisation. The presumed causes, purpose and significance of variations were briefly alluded to. Some of the variations were apparently due to excessive, or to diminished heat, light, or food supplies; others to reversion to a primitive ancestral state, presumptive evidence of which latter is derived from an examination of the course of development of the seedling plant. That hybridisation had played no part, in recent times at least, was shown by the fact that until lately the wild form of the plant was not known, and moreover, that all attempts to cross-fertilise the Chinese Primroses with pollen from other species had hitherto failed. The plant as first introduced to this country was a cultivated form, which immediately manifested a tendency to vary, and in practice it was always grown as an annual. During the last few years, however, the true wild species had been found in the mountains of Y-Chang in Central China, by several collectors, growing on bare limestone rocks, exposed to the sun, and with but scanty supply of water. Dr. Masters, owing to the kindness of M. Franchet and Mr. Hemsley, was enabled to give a slight

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AVENUE OF PALMS (OREODOXA) BOTANIC GARDEN, CEYLON

account of the wild plant, which is a perennial with a thick, woody, branching rootstock, covered with the remains of former leaves, and with an internal construction different from that of any known Primrose. Messrs. J. Laing, G. Paul, Pearson, Girdlestone, D'Ombrain, Wilks, and others, took part in the interesting discussion which followed.

London School Board. — The tender of Messrs. W. Cutbush & Son, nurserymen, of Highgate and Barnet, has been accepted for trees, shrubs, and other plants, and for maintaining the same at the various schools in the London district. Wherever practicable some useful knowledge of common plants, poisonous native species, fruit trees and bushes, and methods of increase might be combined with the merely ornamental planting in Board School enclosures.

Rhododendron Victorianum ×.—Under this name is figured and described in the last number of the *Revue de l'Horticulture Belge* a hybrid Rhododendron raised in Belgium by M. Cuvelier, by Rhododendron Nuttallii out of R. Dalhousianum. The leaves are like those of Nuttallii, but the free-flowering habit is that of Dalhousianum. The flowers have a bell funnel-shaped tube, with a five-lobed spreading limb. The interior of the tube is golden-yellow, while the rest of the flower is pure white.

A Cure for Phylloxera.—It was stated at a recent meeting of the Académie des Sciences that after numerous experiments, MM. Couasnon and Salomon had ascertained that this insect will not resist a temperature of 45° C. (113° F.), and that even the eggs of the creature are destroyed by immersion in water of that temperature. Supposing the statement to be correct, it is evident that the plan would be very serviceable in the case of pot-Vines. In the meantime, it is a long while since we have seen any Vine-louse either on the roots or the leaves.

"Illustration Horticole."—This publication now enters upon its thirty-fourth year, and signalises the fact by appearing in quarto size, which enables the editor to do more justice to the plants figured.

The Scottish Arboricultural Society. —At a meeting of the Council of this Society, held in Edinburgh on the 9th inst., Dr. Cleghorn, of Stravithie, presiding, communications were read by the Secretary, Mr. John McLaren, from Mr. John Michie, forester, Balmoral, regarding the Society's annual excursion, which by Her Majesty the Queen's permission has been arranged to visit the royal woods and forests on Deeside this year. After some conversation, it was unanimously resolved that the annual meeting of the Society be held in Edinburgh on Tuesday, July 26 next; and that the excursion to visit the royal estates at Balmoral take place on the following Thursday and Friday, July 28 and 29.

The Royal Horticultural Society. —The following summary of a petition to be presented to the Queen has been forwarded to us by the Assistant Secretary of the Society for publication:—

"At a meeting of the Council of the Royal Horticultural Society, held on the 8th inst., a draft memorial for submission to Her Majesty the Queen, prepared by the President of the Society, was read, and Sir Trevor Lawrence was requested to lay the same before Her Majesty at an early date. The Memorial briefly reviews the history of the Society since its foundation in 1804, and after setting forth its intimate and influential connection with the progress of practical and scientific horticulture, refers to the beneficent influence which the late lamented Prince Consort exerted over its fortunes, which have steadily declined since the removal by death of His Royal Highness from the presidency of the Society, until in 1882, after years of continually increasing financial difficulties, the Society being unable to carry out the terms of its agreement with the 1851 Exhibition Commissioners, was compelled to give up possession of the Royal Horticultural Gardens, and is now brought face to face with the grave problem, not only of how its future work is to be carried on, but even of how its existence is to be maintained. The Memorial, after alluding to the *prestige* of the Society at home and abroad, prays Her Majesty to use her gracious influence to obtain for the Society a sufficient portion of ground on the South Kensington Estate for a building to accommodate its committees, its valuable library, and its offices, together with the use of the Conservatory and quadrants in which to hold its shows. In concluding, the Memorial assures Her Majesty that the Council of the Royal Horticultural Society approach her with the hearty concurrence and support of the most eminent horticulturists of the kingdom, both amateur and professional, and in the firm conviction that force is added to their appeal, not only from the past history of the Society, but also from the fact that the sphere and scope of its work are distinctly germane to the objects for which the land at South Kensington was bought."

Exhibition of Hardy Fruit, and Fruit Conference, at Chester.—On Thursday, March 3, an exhibition (Apples and Pears) and fruit conference was opened at the Grosvenor Museum, Chester. A considerable number of local fruit growers, as well as many from a distance, sent fine and choice collections of Apples and Pears—chiefly the former—for exhibition. Among others were His Grace the Duke of Westminster, Eaton; Messrs. F. & A. Dickson & Sons, and Messrs. James Dickson & Sons, of Chester; Mr. J. Watkins, Pomona Farm, Hereford; Messrs. T. Rivers & Sons, Sawbridgeworth; Mr. George Bunyard, Maidstone (a very extensive and fine assortment); Colonel Heyward, Crosswood, Welshpool; Mr. Ratcliffe, Parkgate; Mr. James Freme, Wepre; Mr. T. Brocklebank, Childwall Hall, Liverpool; Mrs. Balfour, Mount Alyn, Rossett; Mr. H. D. Pochin, Bodnant, Eglwysbach; Mr. S. Manning, Maze Hill, London; Mr. A. O. Walker sent two very characteristic collections, one the produce of the gardens around the leadworks, and the other from Nantyglyn, Colwyn Bay. The time of year being considered, the fact of a large and varied assortment of fruit of last autumn's production being brought together in prime and sound condition, must be a sufficient guarantee of the quality. At the conference there was but a thin attendance. The chair was taken by Mr. A. O. Walker, and Mr. E. J. Baillie gave an address on "Fruit Growing;" and after a few introductory remarks by the Chairman, thanking both local friends and those from a distance for sending such beautiful collections of Apples and Pears for exhibition, there was a short discussion.

Manchester Horticultural Improvement Society.—The last meeting of this Society for the present session was held on Thursday evening, March 10, in the Memorial Hall, Albert Square, Mr. Robert Tait, the Honorary Treasurer, presiding. Mr. J. S. Butterworth made a communication on "Fertilisation of Plants." Mr. J. Hadfield, of Brinnington, Stockport, read a paper on "Clay Soils and their Improvement." The Chairman said this was the final meeting of the Society of the fourth session, and as Treasurer he had pleasure in telling the members that their funds had not decreased very much. This year there had not been the good average attendance which they had had previously. The decrease, he thought, could be accounted for from the fact that postcards had not been sent to members calling attention to the meetings about to be held. They had relied simply upon the syllabus and a weekly advertisement, but a lesson had been learned, and the despatch of postcards would be resumed.

Indo-Colonial Exhibition.—It is stated that there is a surplus of £8000 available to the Commissioners of this Exhibition after meeting all liabilities and giving a complimentary donation to the members of the staff. This sum of £8000 is to be given to the funds of the Imperial Institute.

Royal Oxfordshire Horticultural Society.—We are requested by Mr. R. Dean to insert the appended correction. Owing to an unfortunate oversight an important error appears on the schedule of prizes offered at the summer show on June 21. In the two classes (7 and 8) for table decorations, open to all England, the prizes read £30, £20, £10, and £15, £10, £5. These prizes are really shillings, and we are requested to make an announcement to this effect, so that intending exhibitors may not be under a misapprehension as to the money value of the prizes.

Exhibition Fixtures.—The summer show of the Bury St. Edmunds and West Suffolk Horticultural Society is fixed for June 23 and 24, and the Chrysanthemum Exhibition for November 7 and 18. The summer exhibition of the Ealing, Acton, and Hanwell Horticultural Society will take place on July 6, and the usual Chrysanthemum Show on November 16.

Do Scorpions Commit Suicide?—Another legend has been shown to be a fable. The belief that a scorpion, unable to extricate itself from an encircling ring of fire, ends its misery by committing suicide by inflicting a wound on itself, has been shown by actual demonstration to be erroneous. Dr. Bourne, by actual experiment, has proved that, though a scorpion may lash itself with its tail and cause the sting to penetrate its own flesh, yet that the poison is quite harmless to itself or to other species of scorpion. It is for its enemies, not for itself or its friends, that the poison is provided.

The Weather in the West.—In the neighbourhood of Monmouth, Mr. T. Coomber states that the weather is very severe for the time of year, 17° of frost occurring on the morning of the 13th, and 18° on that of the 14th; fortunately, Apricots have not yet expanded their blossoms. Snow fell early on the morning of the 15th, and continued steadily throughout the day, and there is 8½ inches on the ground. Near London the same tale may be told.

Cross-bred Roses. — The following letter being, as we hope, impersonal, void of offence, and containing valuable information, we are induced to insert it, though we have deprecated any further correspondence on the subject so far as personal matters are concerned:—

"In allusion to the correspondence which has appeared in the *Gardeners' Chronicle* respecting the origin and classification of some of Mr. Bennett's seedling Roses, it seems remarkable that your correspondents, especially Mr. Bennett, an experienced cross-breeder of plants and animals, should appear to have lost sight of the important tendencies to heredity or reversion which naturally follow, and to a considerable extent interfere with the work of and confound the efforts of the cross-breeder, and which, if they do not afford the full explanation of the matters at issue respecting the origin of some of Mr. Bennett's seedlings, may tend to clear up the doubt which has, I think, been unnecessarily cast on his labours. From what I have seen and know of Her Majesty, Lady Mary Fitzwilliam, and the other Roses alluded to as raised by Mr. Bennett, I have not the slightest want of faith in the account of their origin as stated by him, for although Her Majesty may show externally but little of the parentage of Tea-scented Rose Canari, it is fully possible that the pollen of the latter may have been sufficiently potent to have fertilised the ovary of Mabel Morrison, the seed-bearing parent, without materially affecting outwardly, the bloom, habit or various characters of the seedling of the first generation, the law of heredity having probably been a contributing cause to this result, as Mabel Morrison is, I believe, admitted to be either the child, or the offspring, by bud-variation, of Baroness Rothschild, to which Her Majesty most nearly approaches in appearance and character, and it is quite within the bounds of probability that in the next generation, if the latter Rose should prove fertile either naturally or by cross-breeding, its direct offspring would show some ancestral characters derived from Canari and the Tea-scented race. Most garden Roses, and especially those of the so-called hybrid perpetual and Tea-scented types, have, in common with many other cross-bred plants, as I have fully satisfied myself, a great tendency to reversion in their successive

generations, and it is impossible to look forward with any degree of certainty to a definite result from their cross-breeding. The very name, hybrid perpetual, adopted by those who attempt to classify this or that Rose of a mongrel breed as a hybrid perpetual or a hybrid Tea, illustrates the want of fixity of the Roses they would so dogmatically marshal. Some years ago I obtained seed in the open-air from a flower of Tea-scented Gloire de Dijon × Souvenir de Comte Cavour, a dark red hybrid perpetual, and from naturally fertilised seed of this plant, which was a vigorous semi-double yellowish-pink flowered variety, remarkably polleniferous, and a free seed-bearer, I raised a number of seedlings including Bedford Belle, a very free-flowering and vigorous plant, of long erect growth, with thorny wood and blush-white flowers, to all appearances unlike either of its parents or its ancestors of the previous generation. From the same lot of seed came Gipsy, a dark red Rose, and partaking otherwise somewhat of the characters of the ancestral Souvenir de Comte Cavour; others of the seedlings produced single and semi-double white, red, and intermediate coloured flowers, some approaching either one or both of their known ancestors, and some unlike either. I have also observed similar results amongst the large number of seedlings I have at different times raised from the hybrid perpetual type of Roses, both naturally and artificially fertilised, the progeny varying from their parents almost as much by cross-fertilisation as by natural seeding. The conclusion, therefore, which I have arrived at is that but little dependence can be placed on looked-for results being attained from the cross-breeding of the hybrid perpetual and Tea-scented types of Roses, and that this is accounted for by their already highly crossed and interbred character; and I cannot wonder at the perplexity and uncertainty awaiting those who attempt to draw even a conventional line between hybrid perpetual, Tea-scented, or hybrid Tea Roses and their complex progeny. *T. Laxton.*"

Fungoid Disease in Colocasia esculenta.—Messrs. G. Massee and D. Morris communicated a paper to the Linnean Society on March 3 concerning this. They mentioned that the negros of the West Indies give the name "Cocoes" to the main stem and shoots of this species of Aroid, figured in a recent supplementary sheet of the *Gardeners' Chronicle*. Cocoes form a wholesome food, and are said to be preferable to Yams and Sweet Potatos. A blight arises in the tubers similar to the Potato disease, and which is produced by a fungus belonging to the genus Peronospora, a new species named P. trichotoma. The ravages of this are so uncommonly like what occurs in the Potato, that it behoves the authorities in Jamaica, where it is prevalent, to keep a watchful eye, and to endeavour to cut short its progress. Instructions are given by the authors as to remedial measures, an important one being the absolute necessity of destroying badly affected plants, so that the spores may not spread.

Botanic Gardens, King Williamstown.—The *Kaffrarian Watchman* of January 21 contains the reports of the Secretary and Curator, and of the annual meeting of subscribers. From these it appears that Mr. Leighton, the Curator is considerably cramped in his efforts to render the gardens as useful as they might be made by lack of funds—a state of affairs which has its parallel in more than one once famous botanic garden in this country. Mr. Leighton gives interesting details respecting the growth of some introduced trees which are well known and largely cultivated in Britain. The Canadian Poplar, Populus monilifera, from cuttings, made growths of 16 feet during last season, and is recommended for deep and moist ground. The Box Maple, Negundo fraxinifolium (so well known as Acer Negundo) grows much more rapidly than in England, plants from seed sown a year ago being now over 10 feet in height.

The Industrial Progress of the United States of North America.—The progress which the United States have made in the last generation—that is, since the close of their great Civil War—has been in some respects unparalleled in the history of the world. Some recently published statistics show that since the year 1865, her population has increased 69 per cent., her hay crop 106 per cent., her Cotton crop 194 per cent., her grain crop 256 per cent., and her production of pig-iron 386 per cent. In view of these astonishing figures the forthcoming American Exhibition of the arts, manufactures, products, and resources of the United States, to be opened May 2 of this year, at Earl's Court, Kensington, will have a deep interest for all thinking persons.

Phylloxera.—M. Mouillefert has contributed to the *Annales Agronomiques* an excellent summary of the present state of our knowledge of the Vine-louse and of the means of combatting its ravages. The chief feature of interest is that M. Mouillefert is not so sanguine as some others as to the advantages of grafting on the American stocks. He recommends this process on bad soil where other means of protection, as carbon bisulphide or sulpho-carbonate of potassium, are not available. To destroy the winter-egg a dressing of coal-tar, 20 parts; (*huile lourde de houille*) naphthalin, 60 parts; quicklime, 120 parts; and water, 400 parts, is recommended.

"Familiar Trees."—With the present number the first series of this prettily illustrated work, published by Messrs. Cassell, is terminated. Mr. Boulger has contrived to convey in simple language a large amount of sound knowledge, so that this work forms an agreeable contrast to the so-called popular compilations, many of which when not inane, are full of blunders. Mr. Boulger himself, in his desire to avoid technicalities, will, we fear, confuse some of his readers, by making the term "fruit-bearers" the representative of Angiosperms. Botanically this may be condoned, though algæ and fungi have fruit; but the general reader will not consider the Lime, the first tree mentioned in the synopsis, as a fruit bearer. In the same way cone-bearers, for Gymnosperm will hardly apply to the Yew or the Juniper.

Scarlet Fever.—A very close piece of inductive reasoning was presented lately to the Royal Society by Professor Klein. In his endeavours to ascertain the cause of an outbreak of scarlet fever he showed, first, that certain minute plants—micrococci—were always associated with the disease, then he isolated these germs, cultivated them in the way familiar to those who study these organisms, and then inoculated previously healthy animals with the germs, with the result that the disease was induced. Following up other clues the cause of the outbreak in question—that at Hendon—was traced to a particular dairy farm, then to a particular cow, and still further, to one particular teat. It was shown that milk from the other teats was free from germs, while that derived from the teat in question contained germs capable of producing the disease in other animals. The infecting germs came from the ulcerated teat, so that the milk itself, even from that teat, would be free from germs if means could be taken to avoid contact with the sore spot. Hence we have here the cause of scarlet fever tracked home, and the means of prevention are clearly indicated. The anti-vivisectionists may disapprove of these experiments, but no one who has had experience of the horrors of malignant scarlet fever, or who has any sympathy with suffering animals, will doubt that the permanent benefits conferred on man and on animals enormously outweigh the relative slight amount of harm done to the few animals experimented on.

Glasgow Botanic Garden.—It would appear that these Gardens are in imminent danger of suffering extinction, unless the citizens of Glasgow come at once to the rescue. In the default of steps being taken to avert this catastrophe the Gardens will shut their gates on the 31st of this month, and the whole of the costly plants, &c., will come under the hammer. The Gardens are burdened with a debt of £48,000, of which sum £45,000 is owing to the City of Glasgow, £2000 to the University, and £2000 to Her Majesty's Government; and last year the total receipts were only about £2000.

Royal Society of Literature.—Mr. William Paul, F.L.S., of Waltham Cross, is announced to read a paper on "The Ancient and Modern Literature of Gardening," before the Royal Society of Literature, 21, Delahay Street, St. James' Park, on Wednesday, March 23, at 8 p.m.

Tendrils.—M. Leclerc du Sablon finds a relation between the construction of tendrils and their amount of sensibility to touch. The larger the proportionate amount of elongated thin-walled cells near any given surface, the more sensitive to contact he finds it.

Publications Received. — *Note sur l'Ecole d'Arboriculture et de Viticulture de Geisenheim* By Ch. Joly. (Paris: Michels et Fils, 8 and 10, Passage du Caire.)—*Schools of Forestry in Germany.* By J. C. Brown, LL.D. (Edinburgh: Oliver & Boyd, Tweeddale Court.)—*Miscellaneous Notes on the Work of the Division of Entomology for* 1885 (U.S. Department of Agriculture, Division of Entomology, *Bulletin* No. 12). By the Entomologist. (Washington: Government Printing Office.) — *Through the Fields with Linnæus.* By Mrs. Florence Caddy. 2 vols. (London: Longmans, Green & Co.).

THE CRYSTAL PALACE SHOWS.

The usual schedule of prizes for plants, flowers, fruit, &c., exhibited at the Palace in 1887 is in our hands. We do not observe any diminution in the money value of the prizes offered in the various classes, and, with one exception, there are no notable alterations in the regulations from those insisted on in former years. The committee of the Grand National Dahlia Society, of which Mr. H. Glasscock is Hon. Treasurer and Secretary, has made a much-wanted alteration in the classification of show and fancy Dahlias. On this subject we print a letter from Mr. R. Dean, of Ealing:—

"At a recent meeting of the promoters of the Grand National Dahlia Show a proposition was made to abolish the artificial distinction between show and fancy Dahlias, so that both can now be exhibited on the same stand in the nurserymen's classes. One result will be, that the task of exhibiting will be rendered lighter, as a smaller number of what are known to be constant varieties will suffice. The representatives of the amateur element present at the meeting did not take kindly to this new departure, and so it was deemed advisable —the leading trade growers assenting—to confine its application only to the nurserymen's classes as a trial experiment.

"In order to give additional interest to the show it has been decided to offer prizes for dark, light, tipped and striped Dahlias—four new classes, each for six distinct blooms, having been provided. One advantage arising from this will be that it will bring together the best varieties of their character; and as the competition in each class is open, show and fancy flowers can be exhibited in these four classes. Under the heading of light Dahlias, white selfs, yellow selfs, and any delicate tinted flowers can find a place; but distinctly tipped flowers should not be admitted, there being a class for them. And to avoid confusion in the class for striped flowers, several of these can be found among the fancy varieties; but all with a distinct tip in addition to the stripes should be excluded, though that is a matter which must rest with the judges.

"A new class has also been provided for the Cactus or decorative varieties, to be shown in bunches of six blooms. A class has also been created for twenty-four bunches of single Dahlias, in addition to those for twelve and six bunches, which are retained; and the classes for the premier show and fancy Dahlias are abolished, as serving no practical purpose, and as entailing upon the judges a great deal of unnecessary labour.

"Should the experiment of showing show and fancy varieties together be generally accepted, it will not prevent the trade growers from classifying their Dahlias as they please. Perhaps as a matter of trade convenience it will be well to keep the show and fancy varieties apart for the sake of those desirous of making selection; but it would be equally useful if a classification into self, shaded, tipped, striped, &c., were also made, as there is no

doubt classes so designated will find a place in the schedule of prizes of the Grand National Dahlia Show in the future."

NOTICES OF BOOKS.

THE GARDEN CALENDAR. By T. W. Sanders. (Hamilton, Adams & Co., Paternoster Row, London. 8vo.)

It may be thought that books treating of work in the garden were already too abundant, but the one under consideration is a manual deserving of wide circulation amongst the owners and managers of gardens, for the conciseness and perspicuity with which its instructions are given. The plan of the work is to take each month of the year, dividing it into sections. In this manner the section relating to the present month opens with some general remarks on the season and the work for the month; this being followed by a portion devoted to the vegetable garden, then the preparation of the soil receives attention; afterwards follow a page or more on seeds to sow, and how to do it.

Then we have directions for planting Mushroom beds, and miscellaneous items; notes on hardy fruit, with the requisite reminders as to planting, pruning, grafting, &c. The flower garden is then taken, beginning with the rockery, followed by Roses, and the planting operations in this department. There are chapters on florist's flowers, vineries, orchard and Peach houses, and Cucumbers; the plant-stove, greenhouse, conservatory, cold-frames, and window plants. A chapter is devoted to the training and pruning of fruit trees, illustrated by diagrams. Some useful instructions are found on propagation and grafting, also illustrated by woodcuts.

One part that is not so fully treated as it might be is that on Orchid culture, and we should have greeted with satisfaction information on the routine culture and methods of increase of the rarer hard-wooded plants which in so many gardens are nearing undeserved extinction. The fashion of growing such things as are easily grown from seed or cuttings, and are shortlived, and which any untrained gardener can grow, unfortunately for possessors of gardens has already given a tiresome monotony to the latter. It is therefore time that some of our best men should again take up the culture of Cape of Good Hope and New Holland hard-wooded plants and bulbs, although it is true such things cannot be cut sheaf-wise for indoor decorations. The book opens with a view of the winter garden at The Firs, Lee, Kent, at which place the writer is gardener.

THE APIARY.

FLOWERS FOR BEES.

It is now high time to attend at once to the above subject, which must not longer be delayed. "Wherever fruit trees are grown in quantity, either out-of-doors or under glass, no better assistant in ensuring fertilisation can be obtained than the bees, and some of the most succesful market fruit-growers attribute the regularity of their crops to the industrious aid of these insects. Most of our hardy fruit trees, however, flower in early spring, and there is a long period during which the bees have to seek their honey and pollen supplies in other directions." I have quoted the above from Webb's (Stourbridge) Spring Catalogue, because I can so thoroughly endorse the words as coinciding with my own experience. In their article, which is headed "Flowers for Bees," Messrs. Webb & Son then proceed to name a number of the most useful flowers. I quite agree with them in saying that it is far better to grow large patches of flowers which are known to yield pollen and honey than a lot of small ones, even though they may be favourites of the bees. And the reason is not far to seek. Every observant person must have noticed that when a bee goes forth from the hive on business and darts into a certain flower, it will keep to that kind of flower until it is loaded, and then return home. "Four plants that should be grown extensively are Limnanthes Douglasii, Mignonette, Borage, and the Cornflower (Centaurea cyanus). Of these the limit must be determined by the garden space at command, but as much ground as possible should be devoted to them. The first-named is a great favourite with bees, and some of the most experienced apiarians have tested the merits of this plant thoroughly." These four plants would beautifully fill gaps when there is not much honey about. For instance, after fruit trees have ceased flowering there is sometimes such a dearth of honey that bees must be fed, especially if the weather is damp. Limnanthes would nicely fill the gap between the decline of the fruit blossom and the advent of white Clover. I should be inclined to give a little more prominence to the common cottage Wallflower than Messrs. Webb seem to give in their article, but this does not take away aught from the value of their article, and it would do every amateur bee-keeper good to read it for themselves, as I have only quoted a small portion. As regards the Wallflower, I believe Mr. Simmins, of Rottingdean, near Brighton, grows it in large quantities for that very purpose, believing it to be thoroughly good both for pollen and honey, Many others might be mentioned, and indeed a book might be written on the subject, which would form a valuable addition to our literature. *Walter Chitty, Pewsey.*

INSECT POWDER.*

The Dalmatian insect powder, Chrysanthemum cinerariæfolium, B. et H., known also by its Dalmatian name *buhach*, has been cultivated for several years past on a large scale in certain portions of California, the cultivators being Dalmatians who have settled there.

The best soil for this plant is loam, with a large proportion of sand. This kind of soil is particularly suitable for sowing, but it should be well mixed with old dung. The seed itself is mixed with sand and distributed over the soil as uniformly as possible, after which the soil is raked to the depth of about half an inch, and then gently pressed by passing a roller over it. Until the plants spring up, the beds must be irrigated every evening, unless it rains. But great care must be taken not to overdo it, as the plant is very sensitive, throughout its whole life, towards undue moisture of the soil. After the plants have sprung up, they need not be watered more than twice a week. Weeds must be kept away until transplantation takes place, which occurs when the plant is about 6 inches high. It is then set out precisely like Cabbage, about 20 inches distant from every neighbour, and afterwards needs no further attendance.

Buhach is a biennial (?) plant, therefore it flowers in the year subsequent to that of sowing. The flowers must be cut off just when they are about to open, as they contain the largest amount of essential oil in this condition. The cut flowers must be carefully guarded against dampness, and must be dried in the shade, never by exposure to the sun or to artificial heat. After the period of flowering is over the plants are cut off 4 inches over the ground, reduced to powder, and this powder mixed with that of the flowers, in a proportion not exceeding one part of the former to two parts of the latter. [This is the statement made by the author of the work from which we quote. It is made in such a manner that it appears to be the regular process followed, there being no intention at all to utilise the flowers alone.] The finer the mixed powder of herb and flowers is, the more effective will it prove to be. If any one wishes to prepare the powder himself, and does not possess a suitable mill, he may use a mortar covered with leather. The quantity thus worked in a mortar should, however, not exceed about 1 lb., to avoid heating the powder. When the substance appears to be comminuted, it is transferred to a fine hair-sieve, and the refuse remaining on it put back in the mortar. It is very difficult to reduce the stems to powder in this manner, which—as the author naïvely but truly states—is not a serious disadvantage, as the flowers are the most valuable portion of the plant. Insect powder should be preserved in glass or metallic vessels, which should be closed air-tight.

Insect powder may be used either in form of dry powder, or by fumigation, or in form of alcoholic extract, or mixed with water, or in form of infusion.

The work from which we quote advises to make the first-mentioned method of using insect powder cheaper by mixing it with flour, saw-dust or wood-ashes, which do not interfere with the insecticidal powers. [Of course, this may be done by the user of the powder, provided the dilution is not carried too far.] The mixture ought to be made at least twenty-four hours before it is to be used, and should meanwhile be kept in air-tight vessels. Experiments have been made which show that such mixtures acquire greater efficiency by keeping. It was found, for instance, that a mixture of one part of insect powder and eleven parts of flour, applied, immediately after being mixed, to certain caterpillars, was just sufficiently strong to kill them. But the same effect was produced by applying to them a mixture of one part of insect powder and twenty-two parts of flour which had been mixed twenty-four hours before. [The explanation of this may be that the volatile oil of the flowers probably becomes more thoroughly diffused through the mixture in the course of time. Ed. *Am. Dr.*]

The employment of insect powder by way of fumigation is exceedingly effective, particularly in closed rooms, where the dense smoke produced by it, which is not at all disagreeable to human beings, soon kills all insects, particularly those having tender or soft bodies. This method is especially valuable for the purpose of killing mosquitos in rooms. All that is necessary is to place a burning coal in a spoon or other receptacle, and to sprinkle insect powder upon it. In larger rooms, the spoon may be carried about, or several may be thus used in order to distribute the fumes properly. After a few minutes every mosquito will be found dead; and, if the fumigation be kept up for about half an hour, the same fate will have overtaken also—according to the author—any fleas that might have been present. [He says nothing of bed-bugs, but it is certainly worth while to try the above method for getting rid of this troublesome pest, which is spreading gradually into houses of opulence and comfort, where such disgusting visitors had been previously unheard of! Ed. *Am. Dr.*]

The third method of employment, in form of alcoholic extract, is the most advantageous for use in the fields and garden.

The principal drawback connected with the use of insect-powder is this, that its effect, when applied in substance, is only certain when it comes in actual contact with soft-bodied insects. In the case of hard-bodied or haired insects it often produces only stupefaction for a time. This drawback is to a great extent removed by employing the alcoholic liquid extract, which may be prepared by percolation, or, according to the author, by macerating 1 lb. of insect-powder for four or five days with 2 pints of alcohol in a warm place, then separating the alcohol, and adding 1 pint of glycerin. This liquid extract is to be diluted with water before use. For hard-bodied insects it may be diluted with twenty parts, for more sensitive insects with thirty to forty parts of water. If it is to be used out-of-doors it is self-evident that it should not be applied while rain is threatening, nor during the hot part of the day. The best time is early in the morning while the dew is on the ground, or during cloudy days.

If a decoction of insect-powder is desired, this

* Abstract of a chapter on the subject in *Die Tropische Agrikultur*. Von Heinrich Semler, in San Francisco. 8vo. 1886, vol. i., p. 207. Reprinted in the *Journal of the Pharmaceutical Society* from the *American Druggist*, January.

may be readily made by pouring boiling water upon it, and macerating in a covered vessel until cold.

In many cases a simple mixture of insect-powder and water will be found quite effective. A good proportion is, according to the author, ½ oz. to 2 gallons. [This seems to be altogether too weak.]

The decoction, however, is much more effective. It must be used as soon after preparation as possible, and at a time when its effect will not be interfered with by the condition of the atmosphere.

It should be stated that the majority of insects do not die immediately after having come in contact with insect-powder or one of its preparations. They are at first only stupefied, but death usually ensues after a few hours, and in some cases not until after several days.

THE BULB GARDEN.

IRIS ROSENBACHII (Regel, *Gartenflora*, 1886, p. 409, t. 1227).

This highly coloured, showy, perhaps even to some eyes gaudy new Iris from Bokhara—for the introduction to cultivation of which we are indebted to the esteemed Director of the St. Petersburg Botanic Garden — opened its first bloom with me on February 21, a fortnight earlier than last year, and has since thrown up a second and a third flower. It belongs, like I. persica and others, to the Juno group of Irises, and resembles I. persica in bearing a large single sessile flower, but differs widely from that plant in the form and colour of the flower. The outer perianth segments (falls) are strap-shaped, without the lateral wings or flanges which are so characteristic of I. persica; and the outspread oar-like inner segments (standards) are much larger. The black patch so conspicuous on the lamina of I. persica is replaced, in my specimen, by a rich, soft, crimson-purple or purplish-crimson, set off by contrast with the deep orange of the crest of the fall, and with the bronzy-yellow of the interior of the flower. Its colouring, indeed, is in itself exceedingly fine, but seems out of place in our bleak February weather; the flower lacks, moreover, the appropriate setting of its foliage, which is as yet immature, and will not develope fully for some weeks to come. Unlike many other Juno Irises, it seems perfectly hardy, having had no protection whatever for two years, and very amenable to cultivation, and obviously intends to be a companion of the reticulata Irises. My plant, as far as I can ascertain, has no fragrance, and indeed one could hardly expect such a vivid colouring to be accompanied by a sweet-smelling odour. I imagine that when this Iris becomes more generally known it will be very much in demand. *M. Foster, Shelford, Cambridge.*

Hybrid Narcissus.

The woodcut (fig. 78) illustrates the flower laid before the Scientific Committee at its last meeting, by Rev. C. Wolley Dod. A full description of the flower is given at p. 358. It is sufficient here to recall the fact that the plant is supposed to be a hybrid between N. Bulbocodium var. nivalis and N. triandrus, its floral characters being intermediate between the two.

Daffodils: the Small White Moschatus Varieties.

"W. B. H." is quite correct with regard to the high altitudes at which the small white Moschatus is found. My bulbs were collected at a height of not less than 7000 feet in a valley of the Spanish Pyrenees. *W. D. G. O.*

Double and Single Snowdrops and Daffodils.

Some years ago, as far back as 1854, I used to collect single Snowdrops in the woods in Woolton Park, Nottinghamshire, and they were planted by hundreds at Highfield House. There were no double flowers in these woods, yet on being removed to Highfield House the Snowdrops gradually became double, until at last no single flowers remained. These Snowdrops were brought to Shirenewton in 1879, and planted thickly in lines in the kitchen garden, where they remained for several years blooming double. Three years ago they were moved into the flower garden (except one cluster), and now every bulb has again become single, whilst the cluster that was not removed is still double.

During the last six years I have collected many single Snowdrops within the distance of five miles, yet in these there is not a single instance of a double flower.

About the year 1866, having obtained a number of bulbs of the single wild Daffodil, they were planted in half-a-dozen large clumps near the lake at Highfield House, in a part of the grounds where there were no other Narcissi; in two or three years these all became double, at first being dwarf, but in the course of two or three years they were as tall as the double garden Daffodil, and apparently identical with it.

It is too soon for me to speak as to the change from double to single, or *vice versâ*, in this county, where the wild single Daffodil is almost universal, and where amongst them double flowers are occasionally found, but I may mention that in three different localities within 7 or 8 miles there are fields of the large double garden Daffodil where there are no single blooms or those with dwarf stems, and one locality, however, in which the two are found growing together. In another field, 15 miles from Shirenewton, "butter and eggs" are abundant, but no single flowers. Both in this county and in Gloucestershire Narcissus biflorus is common, but there are no double flowers. The Narcissus poeticus var. patellaris grows [is naturalised?] wild in one locality, formerly in great abundance, now almost destroyed; there were also two other habitats where not a plant remains. A few were removed into gardens, and these are unquestionably N. patellaris. The variety differs from the Gardenia-flowered inasmuch as the latter is always double, whereas in the former single, double, and semi-double flowers can be gathered from every clump, and they keep this character after being removed to gardens; they are rather later, and slugs are more greedy in feeding on the blooms than on those of the Gardenia-flowered. In another locality there is a very distinct form with blooms less than half the usual size, and which is very pretty; fortunately it is far away from the haunts of man. The remnant of what used to be 3 or 4 acres of the variety patellaris of the Poet's Narcissus is at the present time rigorously preserved, so that the habitat may not be destroyed. *E. J. Lowe.*

Fig. 78.—Hybrid Narcissus. (see p. 358.)

PLAN FOR A VILLA GARDEN.

In selecting a plan for the above, I have endeavoured to choose one which has an outline of ground often met with on estates which are laid out for building purposes, and which comprise plots from 2 to 3 acres in extent with only one frontage facing the high-road, the other sides being surrounded by similar sized residences and gardens.

In describing the annexed design (fig. 79), it may be stated that the original surface slopes gradually from the north and north-west, the only view obtainable being from the south, consisting of grass fields and wooded hills in the distance, which will be easily seen from the house (1), built on an elevated position, and surrounded by a broad terrace, as well as from most parts of the grounds, by planting judiciously that part of the shrubbery which screens the lawn (3) from the high-road for about 30 yards with dwarf growing shrubs which will not obstruct the landscape.

The positions of the house and stables (12) are fixed in the most convenient situations, and the kitchen garden (8) adjoining is walled in with trained fruit trees, and there is easy access to it from the pleasure grounds and back of house, and also from the stable-yard to enable manure, &c., to be wheeled into it without coming through the private grounds; it is also of good size, to allow everything to be grown except Potatos, the ground being too valuable for space to be set apart for these.

The site for a range of two vineries and one plant-house (9), with two frames (10) on each side, is shown against the north wall; a boiler and potting-shed (11) being built against the stables, so that the latter can be heated by the same boiler. The conservatory (2) is also provided for, and is placed conveniently to the house.

A bold carriage-drive is made from the high-road to the house, and round to the stables, well planted in, and screened from the private grounds; and a road is made for the use of tradesmen going to the stables and back offices.

The lawn (3) is of ample size, and is provided with two large tennis-courts. Flower beds (6) and seats (7) are distributed over the grounds, and to brighten up the vistas and shrubberies.

A summer-house (4) is constructed with walks leading to it, and two beds of Rhododendrons (5) in front, which give a very agreeable effect and insure the space being kept open for view to the lawn.

The shrubberies are planted so as to shut out all buildings on either side and make the grounds private. Several specimen Conifers, as well as evergreen and deciduous trees and shrubs, are planted on the grass, so as to give it an ornamental appearance. *A. G. Jackman, Landscape Gardener, Woking.*

SCOTLAND.

EDINBURGH BOTANICAL SOCIETY.

March 10.—The Society met this evening at 5, St. Andrew Square, Professor Dickson, President, in the chair.

Dr. William Craig read the report on the excursion of the Scottish Alpine Botanical Club to Glen Spean and Pitlochry in 1886. Several rare plants were obtained, but the chief find was that of Saxifraga cæspitosa.

Mr. Taylor read obituary notices of Mr. Robert Gray, F.R.S.E., Rev. W. W. Newbould, M.A., F.L.S., and Professor Morren, Liège.

Mr. Lindsay gave in his report on the progress of vegetation at the Royal Botanic Garden, Edinburgh.

Mr. Bullen sent his report on the temperature and vegetation at the Clasgow Botanic Institute.

The Progress of Vegetation at the Royal Botanic Garden, Edinburgh.

The month of February has been generally mild and dry; bright sunshine was frequent, causing numerous spring plants to expand their flower-buds earlier than usual. The weather experienced during the month was in marked contrast to that of February, 1886, which was extremely wintry, with much snow, and uninterrupted low temperatures. During last month no snow fell. Rain fell more or less, on nine days only. Frost was registered on twelve mornings, the total amount being 76°, as against 128° for the corresponding month last year.

The lowest readings of the thermometer were on the mornings of the 6th, 7th, 8th, 9th, and 10th, in-

dicating respectively 23°, 23°, 22°, 17°, and 20°. The highest morning temperatures were on the 3d, 18th, 23d, 24th, and 27th, when 46°, 45°, 49°, 50°, and 44° were indicated. The lowest day reading was 31°, on the 8th; the highest was 58°, on the 27th of the month. Of the forty spring flowering plants, whose dates of flowering are annually recorded, the following seventeen came into flower, viz.:—Tussilago alba, on February 3; Crocus Susianus, February 4; Eranthis hyemalis, February 4; Daphne mezereum, February 5; Leucoium, February 14; Symplocarpus fœtidus, February 14; Scilla præcox, February 16; Rhododendron atrovirens, February 17; Crocus vernus, February 17; Nordmannia cordifolia, February 18; Bulbocodium vernum, February 19; Scilla sibirica, February 19; Iris reticulata, February 26; Rhododendron Nobleanum, February 26; Scilla bifolia taurica, February 27; Arabis albida, February 27; Omphalodes verna, February 28. All but two of these have flowered earlier than last season, the average being seventeen days in advance. Several shrubs have flowered most profusely during the month, the finest were the red and white Mezereon, Rhododendron atrovirens and R. præcox, Andromeda floribunda, &c. Leaf-buds are not developing so rapidly as might have been expected, probably owing to the dryness of the ground.

On the rock garden forty-five species and varieties of plants came into flower during the month, as against twenty during February, 1886. The most conspicuous varieties were:—Hepatica triloba, Galanthus Elwesi and Redoutei, Crocus annulatus, C. biflorus, etruscus, Olivieri, Susianus, Sieberi, and vernus; Helleborus antiquorum, albicans major, orientalis, guttatus, Leucoium vernum, and carpaticum, Cyclamen Coum vernum, Colchicum crocifolium, Iris reticulata and Krelagei, Chionodoxa sarnensis, Saxifraga oppositifolia and alba, S. Burseriana, Rocheliana, Muscari lingulatum, Scilla bifolia taurica, Bulbocodium vernum, Scilla sibirica, Draba aizoon, Doronicum caucasicum, &c. *R. Lindsay.*

Extract from Report on Temperature, Vegetation, &c., in the Botanic Gardens, Glasgow.

The thermometer has been at or below the freezing point fifteen times during the month of February. The lowest reading was 19°, or 13° of frost, during the night of the 8th, and 9° on the night of the 9th. The other readings were comparatively light for February. Total night readings 66°, and four times at freezing point.

The lowest day temperature was 31°, or 1° of frost, on the 8th and 9th. Very fine days are recorded for one half of the month, and considerably more sunshine than is usual at this season; the rainfall has been light, and a finer February rarely falls to be recorded. The bright sun and frequent high day temperature has caused the sap to rise rapidly. The red racemes of Ribes sanguineum are already visible, and the buds of the various species of Lilac are visibly bursting. The leafage of many Roses is partially developed, and is certain to be injured later on. The same effect is not noticeable on hardy herbaceous plants, most of which are in a comparatively dormant state. The only border plants in bloom consist of various species of Crocus, Helleborus, Petasites, and Daphne Mezereum and album. *R. Bullen.*

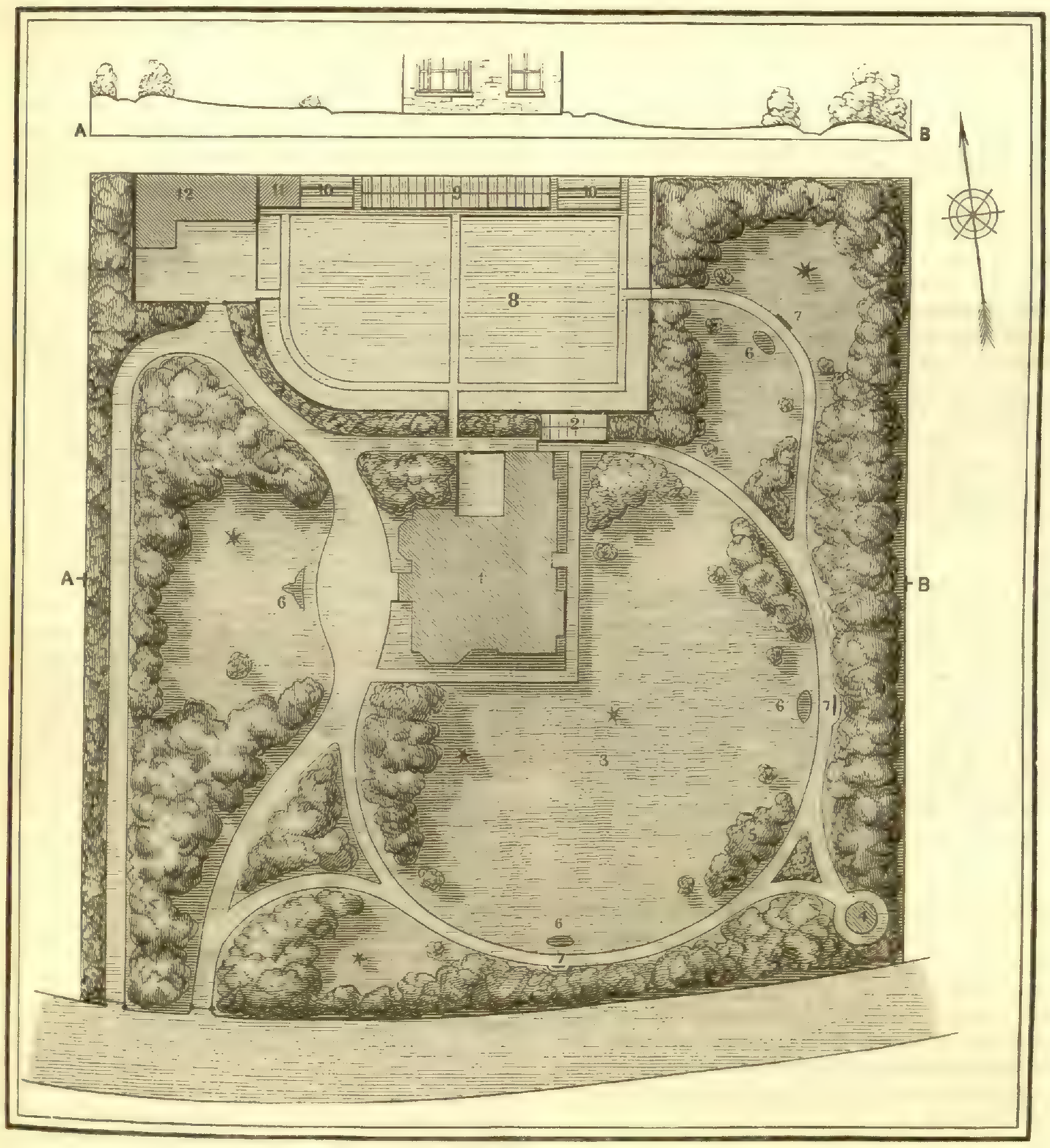

Fig. 79.—Plan of a villa garden. (see p. 390.)

There were exhibited a large collection of New Zealand Ferns and allied plants from Miss J. A. Allison. They were fine specimens, beautifully mounted, several rare genera, Phylloglossum, Tmesipteris, Schizea, Lycopodium, &c., being represented.

From Mr. D. Brown, of D. Macfarlan & Co., came a large box of spent morphia (?), covered with a very peculiar fungus.

Dr. Craig showed a specimen of the common Snowdrop, having two flowers on a scape.

Mr. J. R. Hill exhibited a bulb of Urginea scilla, which had been in a glass jar in the museum of the Pharmaceutical Society for more than twenty years, and which was now sending out fresh leaves.

From the garden came Saxifraga fimbriata and Stracheyi in fine flower, along with numerous cut flowers of Scilla, Crocus, Iris, Helleborus, &c.

Plants and Their Culture.

PRIMULAS.

In order to have plants of the Chinese Primula for early flowering seeds should be sown now in shallow pans or well-drained pots filled with a fine compost of light loam, leaf-soil, and a fair amount of sand. The soil should be firmly pressed and watered, allowing it to drain previous to sowing the seeds, which should be very slightly covered with some of the finest of the compost, and nicely pressed down to embed the seeds. A piece of glass or tile should then be placed over the pan, and if the pans are placed in an intermediate temperature watering may not be necessary until the plants appear, at which stage the tile or glass must be removed. As soon as a rough leaf is fully developed the plants should be pricked out in pans or potted singly in thumb-pots. Good strains are now numerous, and great variety may be obtained. Seeds of P. obconica should likewise be sown at the present time; this is a very desirable free-flowering greenhouse plant, useful alike for decorative and cutting purposes.

Eucharis.

These beautiful flowering bulbs are impatient of being much disturbed, and so long as specimens remain in perfect health it is not advisable to repot them unless it be for the purpose of increasing the stock. The best time to repot is during their resting season, when those that require a shift should have any inert soil removed, and be placed in pots a good size larger than those they are turned out of, the tops of the bulbs being kept well up to the surface of the soil, which should be rammed tolerably firm without doing injury to the roots. We have just completed potting our plants of E. amazonica, which have not been interfered with for some few years; a portion of these has lately shown signs of debility, and on being examined it was found that many of the bulbs had become too deeply embedded in the soil and the compost pasty. We separated the bulbs, removing the soil with as little disturbance to the roots as possible, and after sorting the bulbs the strongest were planted closely together in thoroughly drained large pots, while the small ones were put into 8-inch pots. Plants so treated should be afforded a brisk growing temperature, and bottom-heat if that is at command, and must be very carefully shaded until established, and not be over watered. Although E. candida, E. Mastersii, and E. Sanderiana are not such effective plants as E. amazonica, they are chaste flowers, and useful for cutting. The soil that suits the Eucharis is a fibry loam mixed with moderate quantities of sand and fibry peat.

Pancratiums and Hymenocallis.

Pancratium fragrans and P. auratum, like the foregoing, are handsome stove bulbs, and are much admired for their effectiveness when cut. They should be kept moderately dry during the winter months, but be more freely watered as spring advances, and their wants in the way of potting attended to. They are easily cultivated when placed in suitable positions, and succeed in rich loam and sand made firm, and after their roots have thoroughly taken hold of the fresh soil, diluted liquid manure may be given with benefit. They can be increased by division; it is, however, a pity to break up fine plants, as young bulbs may be purchased at a moderate cost. Hymenocallis macrostephana is closely allied to, and its blossoms much resemble, the above. It also succeeds well when subjected to similar treatment. *Thomas Coomber, Hendre Gardens.*

Potting Liliums.

The present is a good time to repot established plants of Lilium auratum and other choice varieties. They should be turned out of the pots, the loose soil shaken from off the roots, and repotted in a mixture of nearly three parts good turfy loam, one of horse-droppings, fine mortar rubble and leaf-mould, and a sprinkling of sharp sand, fine charcoal, and fresh soot, the whole being well mixed before being used. The pots should have drainage to the depth of 2 to 3 inches in each. In potting put the bulbs barely under the surface of the soil, and take care not to damage the large fleshy roots, but the soil should be worked amongst them and made moderately firm. If large specimen plants are sought for some of the largest bulbs of the respective varieties should be placed rather closely together in 10 or 12-inch pots; but the most useful sized plants are those grown in 6 and 7-inch pots. After the bulbs are potted they should be stood on boards placed on the border of a late Peach-house or vinery, and be given sufficient tepid water to settle the soil about the roots. After this they will require very little water until the plants have pushed into growth, when, as the pots become filled with roots, they should have liberal supplies, with an occasional application of liquid manure during the growing and flowering period. *H. W. W.*

Fruits Under Glass.

Figs.

Strong growing shoots should be stopped so as to direct the flow of sap to the weaker ones and to ensure the swelling of the fruit. And with this object in view, remove forthwith any suckers that spring from the base of the trees as soon as they appear, and keep the roots well supplied with tepid liquid manure. Syringe the trees thoroughly with water a few degrees warmer than the house morning and afternoon at closing time, when the temperature may rise to 85° or 90° with sun-heat; but, assuming that the house is an air-tight one, open the top ventilators slightly, late in the evening, and aim at a night temperature of from 60° to 65°, and 65° to 70° by day with fire-heat.

Strawberries.

In order to maintain a regular and continuous supply of fruit a good batch of plants in various stages of growth must be at command, as well as a suitable place in which to grow them. Therefore every week or ten days place as many plants under treatment as the requirements of the family demand, first removing the bad leaves and some of the surface-soil, and add a top-dressing of pulverised horse-droppings and loam. The pots, having had the drainage seen to and been washed, should then be put in any pit or frame that may be at hand, or anywhere near the glass in the forcing-houses where a temperature exists of from 45° to 55°. Some water must then be given to settle the new soil, after which further watering will probably not be required oftener than once or twice before the flowers appear—a week or two hence. The plants should then be given a somewhat dry and airy atmosphere, passing the hand lightly over the expanded flowers about mid-day until the fruits are set, when these conditions should be reversed until the berries begin to colour, when a dry atmosphere should again be observed, so as to put flavour in the fruit.

Peaches.

Syringe the trees in the early house morning and afternoon with tepid water and maintain a night temperature of 50°—55°, 60°—65° by day with fire-heat, and 75°—80° with sun-heat, a free circulation of fresh air being admitted to the house at the same time. Where the fruit has set thickly on the trees, the number should be reduced, leaving the final thinning till the stoning process is completed. Attend to the disbudding of the shoots of trees in succession-houses in the manner set forth at p. 254. *H. W. Ward, Longford Castle.*

Trees and Shrubs.

EUONYMUS FIMBRIATUS.

From a note in M. Planchon's catalogue of the seeds of the Montpellier Botanic Garden it appears that the plant cultivated under the above name in European gardens is not that species, but E. pendulus of Wallich. The true E. fimbriatus has papery leaves, whereas E. pendulus has coriaceous ones. In many places in the south and west of England E. pendulus is hardy, and is particularly attractive in spring by reason of the beautiful salmon-red colour of the young growths. It is an excellent plant grown as a bush in a corridor or cool conservatory.

Planera aquatica.

Does this tree still exist in British gardens? The name appears frequently enough in catalogues, but the trees sent out from nurseries, British and Continental, have, so far as my experience goes, always proved untrue to name. Generally speaking, the Caucasian Zelkowa crenata (Planera Richardii) does duty, but I have seen Elms and Hornbeams so labelled. M. Planchon says that the true plant was formerly cultivated at Versailles, but must now have become very rare in Europe. *Geo. Nicholson.*

The Halesias.

Halesia tetraptera is certainly a most lovely shrub, but H. diptera is much better; its flowers are once as large and of a pure white which is far above the yellowish tint of the H. tetraptera. They are both equally hardy. Seeds of H. diptera can be obtained direct from the United States, but young plants are scarce and dear, and often even unattainable. There is a splendid specimen of it in the Botanic Garden, Turin. *Brussels.*

HYACINTH SHOW IN EXETER.

The tenth annual exhibition of Hyacinths at Messrs. Lucombe, Pince & Co.'s, The Exeter Nursery, Alphington Road, was held on March 11. In contrast to last year, when snow fell during the day, the show was favoured with bright spring weather this time, and appeared to the greatest advantage.

Since this annual show was established in the city, no better display was brought together than that staged this year, whether for size, purity of colour, or vigour of growth. Several new varieties have been added to those which have already gained favour, so that visitors who have seen the exhibition in former years found additional pleasure in inspecting the latest growths, whilst these new arrivals were so many extra attractions to an already attractive combination.

The competitive exhibits have never been excelled, even if they are not the best which have yet been sent to the nurseries. A splendid array of spikes, with not a weakling among them, was sent by the Rev. T. J. Yarde, of Chudleigh (J. Daw, gr.), who ran away with ease from the other competitors, and secured the top prize. Mrs. Rowe, of Pennsylvania, and Mr. W. C. Sims, of Clyst St. George, were placed equal 2d. Mrs. Rowe's contribution to the show reflected much credit upon Mr. Baker, her gardener. Among the spikes were several superb examples, the most noticeable being La Grandesse, a pure white; Charles Dickens, an old favourite—a blue; Queen of the Blues, very pretty; General Havelock, a purple; Marchioness of Lorne, a buff colour. The merit attaching to Mr. Sims' Hyacinths belongs to the taste in selecting and the cultural skill displayed by his gardener, Mr. A. C. Williams, who has raised this year as good a spring stock as in any former season. He has also produced some new and choice varieties.

In addition to the competitors' exhibits there was a rich group of Hyacinths raised by the firm of Messrs. Lucombe, Pince & Co., and these as well as the others were supported by a varied display of choice foliage plants, Palms, and flowering specimens. Their Hyacinths embraced the new and expensive kinds, as well as the older favourites. All of them were beautiful, and attracted a good deal of attention.

Home Correspondence.

THE BULB MITE, ITS CAUSE AND CURE (p. 290, February 26).—As this heading caught my eye, it was eagerly glanced over with the hope that at last we had some cue to the point—cause and cure, but I was soon disappointed to find it simply the lime remedy advocated by Mr. Culverwell, of Thorpe Perrow, in these columns, p. 311, March 6, 1886, who had been successful in cleansing or checking the mite by lime on Eucharis and other bulbs, slightly affected. Giving lime-water will destroy mite, if the bulbs are not badly attacked; but, as I pointed out a week or two later (p. 375, March 20), the real difficulty I found was not so much how to kill the mite, as how to get at it; the killing process I found easy enough, but how to get at the mite between the layers of the bulb still remains a mystery to me. If the mite were simply on the outer surface of the bulb, and not, as it generally is, between the layers of the bulb and down the very heart, and in the centre of the thick fleshy roots, lime, soot, sulphur, lime-water, or even fine dust from the stokehole, would soon kill or make the mite find more congenial quarters; but if the mite is once in the bulb these remedies are useless as cures, but may, and do, act as a check; but you may as well try to kill the mite inside a cheese by dusting it, as a bulb, or by pouring lime-water on the outside. So much for the said cure, and now for the cause. Well may your correspondent say he is entering on debatable ground in approaching this subject, as he seems to me to adopt Topsy's theory, "I growed." This I cannot accept, so will go, on with congratulations on the seeming success with Eucharis, and hope others have also been successful, though I have not, and will turn their attention to the many other bulbs requiring it. What becomes of the tens of thousands of such bulbs as Lilium auratum imported every year?—how many of these can be saved for a second season's use? A good grower said to me the other day he could not save more than a score out of every hundred. What is the cause? Examine them and you will find, as I have done, they are eaten up with mite. Here, then, is a fortune for those who will go in for it, if, like your correspondent, they can cure the mite. But what if we affect a cure, and go on as we are now doing—importing bulbs swarming with mite? *T. Keetley, Darley Abbey.*

FRUIT BUDS AND BIRDS.—A North Midland sufferer asks what he is to do to preserve his Plum buds from the bullfinches? A few years ago I had charge of large gardens in Surrey. The first winter I was there the bullfinches cleared every bud from Plum trees, Gooseberry and Currant bushes, and nothing but naked wood remained, and I was told the same thing had happened in previous years; so the following winter I pruned early, and, obtaining some lime, I made a quantity of thin wash, and using an old syringe with the holes made a little larger, I put two men to work, one syringing and the other making the wash in a large tub and carrying it to the syringer. After whitewashing all

the bush fruit the Plum trees were taken in hand, chiefly Green Gage, of large size. The wash I soon saw was disagreeable to all birds, they refusing even to alight on the trees. This plan I pursued for five years, and with the best results, gathering plentiful crops where previously all was nakedness. A dry day is, of course, necessary for the whitewashing. *Wm. Armstrong, Charlton Cottage, Harlesden, N.W.* [Doesn't the rain wash off the ghostly covering? Ed.]

GREVILLEA ROBUSTA AND OTHER DECORATIVE PLANTS FROM SEED.—The present is an excellent time for amateurs and others requiring decorative-plants to think of propagating them from seed, as some of them cannot so easily, if at all, be propagated otherwise. I am sowing seeds of Acacia lophanta, remarkable for its finely cut Fern-like foliage; Genista monosperma, Cordyline australis, Dracæna rubra Passiflora pectinifera [a new name to us. Ed.], Lavatera arborea variegata, Coronilla glauca, Abutilon roseum, Lemon-scented Verbena, &c., obtained from one of your great London seed firms remarkable for supplying seeds, fresh, and generally "tested" before being issued. Most of the foregoing seeds will germinate more rapidly by being steeped from six to twenty-four hours in tepid water before sowing. I am placing them on the mild heat obtained from a frame placed on a tan bed, but most of them will start in a cold frame. *W. J. Murphy, Clonmel.*

NEW BENEFIT SCHEME FOR GARDENERS.—I am pleased to see by the very interesting remarks of "Forester" at p. 356 that there is at last the likelihood of a society being formed that it will be a real advantage to gardeners and foresters to become members of. Although the Gardeners' Orphanage put forward, and so ably advocated by Mr. Penny and others, is a very laudable object in itself, yet I am afraid it will not command that continued support necessary to keep it going, not having the stimulus of direct interest. The subscriptions being to all intents and purposes voluntary, will gradually fall off. Many will put the question to themselves —Is there any likelihood of their children, in the event of their death, deriving any benefit from the orphanage they are subscribing to? and will find, taking into consideration the large class this scheme embraces, that their chances are very remote; and, although willing to give a good subscription at the beginning, they will be deterred from contributing annually for this very reason. But this self-help scheme, considering that the object in view is of the utmost importance to every member personally, will, when once started, prove a success, and commend itself to employers and gardeners alike. I for one shall be happy to become a member, and I trust it may have the active support of the gardening fraternity at large, and thus, in celebrating Her Majesty's Jubilee, promote the interests of others, and confer a blessing upon ourselves. I wish to make a suggestion to the framers of the rules and tables, that is, to keep the contributions to the superannuation fund separate from the others, and make it optional to pay for this benefit, and for this reason, that adequate contributions to a superannuation fund on a solvent basis will of necessity be high for members getting up in years, who, finding the contributions to the two a little heavy, would refrain from joining, but who would readily pay to a fund from which they could draw a weekly allowance when out of employment. I wish the scheme every success, and trust every gardener will now put his shoulder to the wheel, for in supporting this, he is helping others and making provision against the day of adversity. *W. Watson, Eaglehurst.* [Such a society already exists—The United Horticultural Benefit and Provident Society. Ed.]

OUTDOOR GRAPES.—Much has recently been written anent Grape culture out-of-doors; like most other questions there are several sides to look at it from. Those who can afford to grow the choice varieties under glass cannot be wondered at for not valuing outdoor fruit, but there are many to whom Muscats and Hamburghs are out of reach, but who might with comparatively little trouble enjoy refreshing fruit and wholesome wine from outside Vines. At a farm within two miles of where I write there are Vines trained on the south end of the house, covering a space 40 feet by 20 feet, which are supposed to be upwards of eighty years old. During twenty-one years that one farmer rented this farm they invariably yielded a more or less good crop, and I have seen them several seasons, and on one occasion had an opportunity of comparing them with fruit direct from a Swiss vineyard, with which they appeared to be quite equal in quality. I have wine in my possession made from Grapes grown upon these Vines, and it is as good as—I was almost saying the best champagne, but must admit I am not a judge of this expensive beverage; however, I may remark, that in a case of illness a medical gentleman, who ordered champagne for the invalid, was asked to taste this wine, and after having been told how it was made, he preferred it to any wine that could be procured in a neighbouring town. These Vines were attended to by a jobbing gardener, who attributed his success to the laying in of young shoots annually, and affording them plenty of space to develope foliage, and reap benefit from the sun. Five years ago the farm changed hands, and my friend, the present occupier, has had his mind too much absorbed in the welfare of white-faced Herefords and Shropshire Downs to pay much attention to Vines; the old veterans have consequently been left almost to Nature, with unfruitful results. Probably if outside Vines secured something approaching the attention in training and feeding, that indoor ones do, success in their culture would more frequently follow. I have a vivid recollection of the many treats I received when a schoolboy in Sussex from Vines grown upon a house that I often visited, and I remember one season when there was an inferior crop the owner remarked that he should not trouble to attend to the Vines as usual. "Well," said a bystander, "then you must expect to have a poor crop again next year." Similar causes have no doubt led to numerous failures. *C.*

PORTLAND CEMENT.—This material may be used for repairing the woodwork of hothouses and all kinds of structures where heat and moisture cause decay in wood. The lower part of the door-jambs and the sills soon become decayed and dilapidated, and I find by experience that these can best be repaired and rendered durable with the above cement. Take 1½ yards of Portland Cement, mix well together, and make soft like mortar, then remove all the decayed parts of the sills or uprights of any parts in the woodwork, put a few nails into the old wood to hold on the cement, then place a straightedge in front of the dilapidated parts, and fill all the holes up with cement; bevel the surface of a sill so that water can run off. I have used cement for repairing wood for fourteen years, and have found from experience that the treatment will preserve wood for many years although partly decayed. *Wm. Smythe.*

TROPÆOLUM TUBEROSUM AS A FOOD.—While the attention of our national benefactors, the experimentalists, is being engrossed with the improvement of our food tubers, in their laudable attempts to raise the Potato from a disease-affected to a disease-resisting race many of our foremost amateurs and others with a small piece of land at their command might do much in bringing tubers other than Solanums under the magic influence of good cultivation. Of course it might be a great number of years before anything in the way of even a comparative improvement could be attained, but no one knows how long the Potato has been in attaining its present perfection, so in the case of other tubers application and the characteristic persevering nature of the Englishman generally overcome all obstacles in the end. The Ullucus tuberosus should not be too hastily thrown aside. The tubers at present are small and watery to the taste, but surely they could be improved. If they are incapable of improvement to the extent of forming an article of food let us go on trying until we have proved this to be the case. The plant I want particularly to draw attention to, however, is the Tropæolum tuberosum, and although an extremely ornamental hardy plant, we are told that it is comparatively scarce in gardens, where its beauty alone ought to recommend it to the cultivator. Looking over an old book I find that the above plant was grown at the Birmingham Botanic Garden during the summer of 1838 by way of testing its qualities as an article of food. Twenty-five tubers were planted in April, and although we are told that the crop was fair, the plants hardy, and the tubers pleasant to the taste, nothing more seems to have come of the trial, and the experiments were allowed to drop. To-day the necessity of doing something to assist our growers in keeping up the supply of tubers is very much greater than it was fifty years ago, and although no apparent improvement may take place in the first few years let us persevere, and at least find out if improvement be possible before giving up in despair. The Tropæolum should be grown much in the same way as a Potato, planting in good soil and earthing up at the proper season. The tubers seem to be formed in the greatest abundance near the surface, and the plants will, no doubt, be all the better for a few stakes for the stems to scramble up. The display of flowers, bright red and yellow, will more than repay the cultivator for his trouble, without taking into account the benefit he may render to his fellow man. *D.*

BRUGMANSIA SUAVEOLENS.—I believe that it is not generally known that this highly ornamental plant can be successfully grown as an outdoor plant during the summer months, even so far north as Hull. In these days of subtropical gardening any plant, no matter whether it be an old favourite or a new importation, that is found suitable for this purpose is sure to be welcomed by gardeners and an appreciative public, as a valuable addition to our somewhat scanty list of floral gems that are generally used in this department of gardening. Its cultivation, as practised here, is as follows:—Take cuttings (which strike root readily) in spring, summer, or autumn, keep them gently growing through the winter, and plant them out-of-doors the following June in rich soil and a sheltered situation. Take off all side-shoots during the summer until the desired height is obtained, then allow them to grow as Nature designed they should do. Take them up in autumn before there is any frost, and put them in as small pots as their roots can be got into; keep them cool but free from frost during the winter; plant them out again in June, and in the following autumn they will reward you by producing a fine crop of large, beautifully white sweet-scented flowers. The plants may now be considered as established, and only require planting out every spring and taken in every autumn, with a little pruning now and again, when they are at rest, just to keep them in shape. Always use fresh, rich soil for summer culture. The plant from which the accompanying photograph was taken has often had as many as fifty fully expanded flowers on at one time. It is about seven years old, and for want of room has gone through many hardships, yet it has never failed to be greatly admired by all who have seen it in its summer attire. *E. A. Peak, Hull.* [Our correspondent's letter was accompanied by a photograph, showing a nicely-grown standard plant with numerous blooms. Ed.]

VERONICAS AND THE PAST WINTER.—Although the winter cannot be said to be over, prolonged severe cold is very rare in the South of Ireland after this time. Examining a small collection of Veronicas to-day, I find that the V. Hulkeana I got from Mr. Burbidge, Trinity College Botanic Gardens, four years ago, and that had grown into a shrub 2 feet high and as much through, has succumbed, after living since in the open air, sheltered by a west wall; some cuttings alongside, nestling at the base of the same, seem healthy. V. salicifolia and V. Andersoni are quite a study to look at. Those thoroughly exposed in the open are killed outright, and the bark split and blackened to the base. Two vigorous fellows with a southern aspect and slightly protected have the central stems only turned back and killed. V. rotundifolia (round or obtuse foliage), "Blue Gem" of some catalogues, is killed outright in the open, and not much injured by an eastern wall; it had seen five years, and was 4 feet through. December was very severe on half-hardy shrubs. Some of your correspondents might give their experience so far. *W. J. Murphy, Clonmel.*

PLANTS OF VARIABLE VIGOUR.—There appears to be some confusion about Ampelopsis Veitchii. There are certainly two varieties under this name, one growing much more vigourously than the other, or if the vigorous variety is not Veitchi, what is it? The stronger grower has leaves 8 or 9 inches in diameter with leafstalks 10 or 12 inches in length, while the leaves on its less vigourous prototype are not more than 3 inches in diameter, and the leafstalks short in proportion. Have these varieties been introduced at different times, or has one of them sported from the type under cultivation? [If A. Veitchii be grown under glass the leaves assume relatively enormous proportions. Ed.] Again, with bulbs we know one plant will bear leaves 2 feet long, and broad in proportion, and bulbs 3½ inches high, and there are eight blooms springing from the base of one bulb, in fact, nine blooms—for there are two blooms on one stem; while the other plant is only half the size in leaf and bulb, and there are only four blooms from this season's bulb. This, no doubt, is an unusual difference. Yet it is probable that the good culture

we admire, is often greatly due to the fortunate possession of a variety with more than usual vigour. In some cases—Orchids especially—there is a remarkable difference in the vigour of the same apparent varieties. To give an extreme case: two plants of Lycaste Skinneri have been growing side by side these last three years; and another instance is that of two Rose trees. Fourteen years ago we planted standard Rose trees in borders on each side of a narrow walk—two of each variety. One of these—a Charles Lawson soon began to show unusual vigour, and was the surprise of those who saw it. It has continued to grow as well up to the present time. Now it has a stem 10 inches in girth, and a head 7 or 8 feet in width and 8 or 9 feet high, the shoots of one season's growth being from 3 feet to 7 feet long. Many opinions have been expressed as to the cause of this luxuriant growth, but for some time I have thought it due to the stock on which it was budded, and this is partly confirmed, I think, by a sucker which has grown from its base this past season, which is not less than 11 feet long. *G. Burt.*

WINTERING OLD PLANTS OF CARNATIONS AND PICOTEES.—I am finding out by experience this winter how difficult it is to preserve, within range of the London fogs, old plants of Carnations and Picotees in pots, even when the utmost care is taken of them. Within the fatal circle of their influence, I am of opinion, that as much harm is worked upon many plants by fog as by frost and wet. Last season I bloomed a number of Mr. E. S. Dodwell's seedling Carnations and Picotees, and among them were several seedling bizarres, flakes, and selfs, of so promising a character that a few layers were made of each. The latter were potted up in October, and placed in a cold frame, and are now nice, young, vigorous plants, and have come through the winter as well as one could desire. After the layers were taken off, the parent plants were still fairly well furnished with "grass," but unwilling to subject them to the rigours of the winter in the open air, I potted them and placed them in a cold frame. For a time they appeared to be doing well, but when the fogs commenced I had the sad experience of seeing the plants gradually decay: and that, too, in spite of all precautions. I withheld water, gave air on all favourable occasions; I cut away decaying foliage, and did all that circumstances suggested by way of arresting decay, but only to find the best part of them succumb. It has been the same with old plants of Pink Lord Lyons; they were potted up with great care, and housed in a cold frame, but the plants have come through the winter very badly, while young rooted pipings are in excellent condition; and so one of the troubles that beset a suburban garden is set forth. The north-easterly, easterly, and south-easterly winds send the fog-waves in my direction charged with many impurities, and the danger increases as London extends and grows, not only from the centre to the circumference but also from the circumference to the centre. Blessed is that lover of plants who, residing near London, is yet far enough away to be out of the reach of London fogs. It is worthy of note that I cannot keep the common yellow Primrose alive in my garden much beyond two or three years. When I go into Kent at the flowering time I select a few of the finest types I can find in the hedgerows, and when transplanted to the moist stiff loam of a forecourt garden facing the north they grow vigorously and bloom finely the first year only, and dwindle away afterwards and die. The coloured varieties of my own raising are much more persistent, possibly because they may be said to be inured to our trying London climate. If we could only disestablish the London fogs! Fog pure and simple may be dealt with to some extent; but fog charged with metropolitan impurities is as difficult to deal with as the condition of Ireland. *R. D.*

TRADE NOTICES.

The Compagnie Continentale d'Horticulture, of Ghent, has ceased to exist, a new Society having been constituted at Brussels under the title of L'Horticulture Internationale. The object of the new Society is to explore all the countries of the globe for the purpose of introducing horticultural novelties, and especially Orchids, in quantities sufficient to bring them within the reach of persons of moderate resources. The *Illustration Horticole* and the *Lindenia* (the latter the property of MM. Linden) will still be carried on as the organs of the new firm. Pending the completion of arrangements at Brussels the business will be carried on as before, at 52, Rue de Chaume, Ghent. The directorate is composed of the following gentlemen:—President, M. Van Lansberge, formerly Governor-General of the Dutch Indies; Directors, M. le Baron G. de Bleichröder, Her Britannic Majesty's Consul-General and Banker at Berlin, and M. le Comte Adrien d'Oultremont, Member of the Chamber of Representatives; Administrator-Delegate, M. J. Linden, Honorary Consul-General, Vice-President of the Fédération des Sociétés d'Horticulture of Belgium; Managing-Director, M. Lucien Linden, formerly Director of the Compagnie Continentale d'Horticulture; Commissaires, M. N. Funck, formerly Director of the Zoological Gardens of Brussels and of Cologne, and M. Gustave Joris, Barrister.

LAW.

ROGERS *v.* COOMBS.

In this case (before Mr. Justice Grove and a special jury) the plaintiff, who had formerly been in the employment of the defendant, a florist at Stamford Hill, sought to recover damages for wrongful dismissal, slander, assault, and malicious prosecution. The main question involved in the action was whether or not the plaintiff acted improperly in topping a large number of Gardenias and in his treatment of certain Indiarubber plants. It appeared that on January 13, 1886, the plaintiff gave a month's notice to the defendant, but before the month had expired he was dismissed summarily, the defendant alleging that he had maliciously damaged the plants and trees. This constituted the slander, to which the defendant pleaded justification. The alleged assault was not of a serious character, and the important portion of the claim had reference to the alleged malicious prosecution. The defendant prosecuted the plaintiff at Worship Street Police Court for wilful damage, and the plaintiff, who asserted that the Gardenias were properly topped in the ordinary way, as it was necessary for their growth, and that the Indiarubber trees had been properly treated, was acquitted. He now brought the present action, whereon the defendant pleaded reasonable and probable cause, and counter-claimed for the damage which he said had been done to his plants.

Mr. Cock, Q.C., and Mr. Forman appeared for the plaintiff, and Mr. Philbrick, Q.C., and Mr. Peill for the defendant.

The jury, after long deliberation, found for the plaintiff on all counts, and gave him a verdict for £62.

Judgment accordingly, with costs. *Morning Advertiser, March* 3.

FLORISTS' FLOWERS.

SPECIMEN CHRYSANTHEMUM PLANTS.

The principal points to be arrived at in the cultivation of the Chrysanthemum are good quality of flowers, rich green foliage, and neat training. To obtain these points the cultivator must lose no time in selecting the varieties he intends to grow in strong healthy plants, potted into 60-sized pots by the second week in February, which will leave plenty of time in which to make good specimens. Place the young plants near the glass, where they receive plenty of light, and maintain a growing temperature. When about 6 inches high, pinch out the point, shifting into 6 inch pots as soon as they show signs of breaking, still keeping them in the same temperature. After they have become established in the new pots remove them to a cold frame, placing them on a bed of coal-ashes.

As soon as the shoots are long enough training should be commenced; this is best done by fixing a wire or string under the rim of the pot, and very gently pulling down the shoots little by little every other day or two, until they are in the required position; if this is not attended to at the beginning great difficulty will be found in doing so later. Admit plenty of air on all favourable occasions, and sprinkle the plants with the syringe early in the afternoon, which operation will greatly benefit them. Should greenfly make its appearance, dust with tobacco-powder, and when the roots have reached the outside of the ball repot into 8-inch pots, and attend to the tying down of shoots as before, gradually hardening off the plants so as to fit them to stand out-of-doors early in May, selecting a sheltered but light position.

In case of frost threatening, use some light stuff in the way of canvas. By the second week in June they should receive their final shift into 12-inch pots, the soil used being in good working condition, and in potting make very firm about the roots with the potting-stick. This I regard as of great importance. Stand them on slates a good distance apart in a light, airy position, making them secure against the wind. A wire hoop painted green placed round them 6 inches from the pot will be found at this period to be the neatest and best means of training the shoots. On all fine days syringe in the morning, and again in the evening. Stopping of the shoots should be discontinued by the end of the first week in July, or small thin flowers will result. In some kinds thinness of substance should not tell against flowers otherwise of good quality; for example, Chrysanthemums of the Rundle type will bring to perfection many more flowers than such as John Salter or Prince Alfred.

By the first week in October remove them under glass, where abundance of air can be given. They should be staked before the flowers are too far expanded, and at least ten days before the day of exhibition. Willow sticks painted green I have found to be the best, as they are light, and of neat appearance. The soil best suited to the plant is good fibrous loam, three parts thoroughly decomposed cow manure, one part with a little road grit and horn-dust added, and at all times clean pots and drainage should be employed. See that they never suffer for want of water. I have grown plants that in very hot weather have required thorough waterings three times a day. Weak manure-water in all stages of growth will greatly assist them, increasing the strength at every alternate watering when the flowering pots are well filled with roots. Some growers advise the discontinuance of manures when the flowers show colour, but I maintain that they require assistance more at this stage than at any other, and have always used it myself to the end. Guano-water and cow-manure and soot alternately will be found to suit them, but the former must be used with much caution. Dust occasionally with flowers of sulphur, to prevent mildew, the greatest enemy to the Chrysanthemum, and keep a sharp look-out for the leaf-miner—an insect that is sometimes very common, and which whenever caught should be burned, leaf and all, and not thrown to the manure heap to develope more progeny. *Edwin Beckett, Aldenham Park, Elstree.*

THE WEATHER.

THE PAST WEEK.

The following summary record of the weather for the week ending March 14, is furnished from the Meteorological Office:—

"The *weather* has been cold and unsettled, with snow in nearly all parts of the kingdom. The snowfall experienced in Scotland and the North of England on the 10th and 11th was very heavy.

"The *temperature* has been considerably below the mean in all districts, the deficit ranging from 4° in 'Ireland, N.,' and the Channel Islands, to 7° in 'Scotland, N.,' and 'England, S.W.' The highest of the maxima were recorded over the northern parts of the kingdom on the 9th, and over the more southern districts on the 10th, when the thermometer rose to between 50° and 54° in all

localities excepting 'Scotland, N,' The lowest temperatures were recorded on the nights of the 12th, and 13th, when the thermometer fell to 11° in 'England, N.W.,' 12° in 'Scotland, N.' 14° in the 'Midland Counties,' 'Scotland, W.,' and 'England, S.W.,' and to between 18° and 21° in all other districts excepting the Channel Islands. On the night of the 12th, or early morning of the 13th, the thermometer on the grass at Newton Reigney fell to zero.

"The *rainfall* has been less than the mean in nearly all the grazing districts, and also in 'Scotland, E.,' and 'England, E.,' but more in 'Scotland, E.,' 'England, N.E.,' and 'England, S.' As a rule, the fall consisted almost entirely of snow or sleet.

"*Bright sunshine* has been more prevalent than it was last week, the percentage of the possible amount of duration varying from 25 in 'Scotland, N.', and 26 in the Midland Counties, to 38 in 'England, E.', and 39 in 'Scotland, E.' In the Channel Islands, however, the percentage (20) was much lower than that of last week.

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 42° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature.				
		Accumulated.			
	Above or below the Mean for the week ending March 14.	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 4, 1887.	Below 42° difference from Mean since Jan. 4, 1887.
Principal Wheat-producing Districts.		Day-deg.	Day-deg.	Day-deg.	Day-deg.
0. Scotland, N. ...	7 below	0	72	+ 35	— 7
1. Scotland, E. ...	5 below	0	57	+ 35	0
2. England, N.E. ...	5 below	0	47	— 1	+ 57
3. England, E. ...	5 below	1	45	— 63	+ 130
4. Midland Cos. ...	5 below	2	41	— 38	+ 113
5. England, S. ...	6 below	3	36	— 52	+ 103
Principal Grazing, &c., Districts.					
6. Scotland, W. ...	6 below	0	53	— 1	+ 15
7. England, N.W. ...	5 below	0	41	— 21	+ 77
8. England, S.W. ...	7 below	4	36	— 67	+ 105
9. Ireland, N. ...	4 below	6	32	+ 16	— 1
10. Ireland, S. ...	5 below	9	34	— 6	+ 37
— Channel Islands	4 below	6	17	— 82	+ 52

Districts.	Rainfall.			Bright Sunshine.	
	More or less than the Mean for the Week.	No. of Rainy Days since Jan. 4, 1887.	Total Fall since Jan. 4, 1887.	Percentage of possible duration for the Week.	Percentage of possible Duration since Jan. 4, 1887.
Principal Wheat-producing Districts.	Tenths of Inch.		Ins.		
0. Scotland, N. ...	3 less	46	10.1	25	19
1. Scotland, E. ...	3 more	31	4.4	39	29
2. England, N.E. ...	2 more	26	2.6	35	28
3. England, E. ...	1 less	22	2.3	38	32
4. Midland Cos. ...	0 (aver.)	24	2.9	26	27
5. England, S. ...	1 more	23	3.0	28	25
Principal Grazing, &c., Districts.					
6. Scotland, W. ...	2 less	35	8.3	32	22
7. England, N.W. ...	0 (aver.)	27	4.3	30	26
8. England, S.W. ...	2 less	29	4.1	31	30
9. Ireland, N. ...	2 less	35	5.8	27	25
10. Ireland, S. ...	2 less	31	6.3	31	30
— Channel Islands	4 less	29	3.5	20	38

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING MARCH 26. (AVERAGE OF THIRTY-THREE YEARS.)

March 20	43°.2	March 24	43°.9
" 21	43°.4	" 25	44°.1
" 22	43°.5	" 26	44°.0
" 23	43°.7	Mean for the week ...	43°.7

Notices to Correspondents.

Intelligent Readers, do please Note.—*Letters relating to* Advertisements, *or to the supply of the Paper, should be addressed to the* Publisher, *and not to the Editor*, and that all communications intended for publication should be addressed to the "*Editor.*" Such communications should be *written on one side only of the paper*, and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Asparagus decumbens (plumosus): *Plumosus.* Propagate by division only.

Aucuba with Berries: *G. Sleep.* A male plant was in your neighbourhood, and insects—bees probably—brought the pollen to your plant.

Beetle: *T. T.* A weevil—a most destructive pest. Set slices of Carrot about, and destroy them at night.

Beetles in Vine Borders: *A. B.* Yes, you are quite right. They are most destructive. Trap them at night with slices of Carrot or other toothsome morsel.

Book in Monthly Parts: *Black Lead.* Although you acknowledge the canvasser's order-book was signed by you with a lead-pencil, that does not invalidate the contract, and it would be a dishonest act to attempt to do so on such grounds.

Books: *A. B.* We are not acquainted with any book on the subject of cultivation of Violets in frames.

Bulb Mite: *Sir T. L.* The bulbs are swarming with the bulb mite.

Copper-coloured Maréchal Niel: *Sampson and Brooks.* We have heard of more than one instance of this change of hue this season: but we do not suppose this mode of sporting will prove permanent.

Correction: Phylloxera.—In our last number this pest was stated to have occurred in Europe for the first time in 1805. This is, of course, a misprint for 1865, in which year the insect was first noticed on the continent of Europe. It was, however, seen in England for the first time in June, 1863. It was figured by Prof. Westwood in our columns January 30, 1869.

Gardeners' Benevolent: *C. S.* is wrong in his figures. As a fact, six were placed on the list by virtue of their own or their husband's subscriptions, without the trouble of an election, while six others were elected by the general meeting, and if more were not elected surely that is only the fault of those who do not subscribe—the more subscribers, the more will be elected.

Insects: *R. B.* The insects sent in the mould are the pupæ of a species of weevil (apparently the destructive Otiorhynchus). Sift the soil and burn them all. *I. O. W.*

Mice Eating Carnations: *T. T.* Not unusual.

Names of Fruit: *Tin-can.* 1, Golden Noble; 2, not known—some local sort.—*R. Cleaver.* 1, Cox's Pomona; 2, Tibbet's Pearmain.

Names of Plants: *Mrs. H. Thompson.* The Yew-like foliage is that of Sequoia sempervirens (the Red Wood tree); the other is Cryptomeria japonica. —*H. Heath.* Cyrtanthus lutescens.—*Karaman.* Libonia Penrhosensis.—*Philanthos.* Colletia cruciata. See the interesting figures and notes relating to this plant in *Gard. Chron.*, 1878, Feb. 23, and 1886, Feb. 13. The plant is a half-hardy shrub, probably quite hardy in the South of Ireland.—*A. B.* We cannot undertake to name florists' flowers.—*G. E.* Odontoglossum luteo-purpureum var. faceta.—*H. A. B.* Mackaya bella. —*G.* We cannot identify from a leaf only.

Nine Kinds of Potatos for Exhibition Purposes: *Reader.* Fidler's Prolific, Cosmopolitan, Snowdrop, Chancellor, Woodstock Kidney, as white kidneys; London Hero, Schoolmaster, as white rounds; The Dean and Vicar of Laleham as coloured kinds.

Notice to Leave Service: *E. L.* In your case, in the absence of any agreement, a week's notice on either side is sufficient.

Nursery Rating: *C. A.* We believe your view is the correct one, but these matters often depend on local circumstances, hence you should apply to some local solicitor.

Wire-worm in Vine Border: *W. D.* The wire-worms were introduced into the border with the turf; they can be caught by burying near the surface pieces of Carrot or Potato, which may be run through with a stick (to save trouble in search) and examined daily. Applications of soot and lime are distasteful to them, and could be given over the roots after removing the upper layer of soil, which should be charred to destroy the worms, and replaced with clean soil, &c.

CATALOGUES RECEIVED.

G. and J. Lane, Cockmanning's Nurseries, St. Mary Cray, Kent—Herbaceous and Hardy Plants, &c.
George Neighbour & Sons, 149, Regent Street, and 127, High Holborn, London—Bee-hives and Appliances.
Little & Ballantyne, Carlisle—Farm Seeds.
Clark & Co., 85, Bedford Street, North Shields—Seeds.
Christof Steinpöck, Scheibmühl-Traisen, Nied-Oestert—Alpine and Herbaceous Plants.
Oakshott & Millard, Reading, Berks—Farm Seeds.
Charles Sharpe & Co., Sleaford, Lincolnshire—Farm Seeds.

Communications Received:—C. T. Druery.—General E. S. Berkeley.—Wild Rose.—R. Bullen.—R. D.—J. D.—D. McB.—O. Thomas.—W. V.—G. T. M.—J. G. Baker.—F.G.—W. H. C.—H. E.—W. W.—W. A.—W. S.—Sir T. L.—Prof. Rchb. f.—E. J. B. (many thanks, but the cap was made to fit the writer, not you!)—G. T. M.—C. A.—T. L.—T. Reid.—R. A. R.—J. V.—G. Pluppen, many thanks.—C. Joly, Paris.—Oakshott & Millard.—Viccars Collyer & Co.—*Le Moniteur Horticole.*—J. D. H., many thanks.—Prof. Kanitz.—Messrs. Jas. Carter & Co., thanks.

DIED, March 15, William Peachy, the much-trusted and faithful gardener and friend of Mr. and Mrs. Hole, of Quorn Lodge, Loughborough, aged 58.

Markets.

COVENT GARDEN, March 17.

Our market remains with scarcely any alteration. Good samples of Grapes maintain an advance on last week. *James Webber, Wholesale Apple Market.*

Plants in Pots.—Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Aralia Sieboldi, doz.	6 0–18 0	Ferns, in variety, per dozen	4 0–18 0
Arum Lilies, dozen...	18 0–24 0	Foliage plants, various, each	2 0–10 0
Azaleas, per dozen ...	24 0–42 0	Genistas, per doz. ...	10 0–12 0
Cinerarias, per doz...	9 0–12 0	Hyacinths, 12 pots...	6 0– 9 0
Cyclamens, dozen ...	12 0–24 0	Lily-of-Val., 12 pots	12 0–24 0
Cyperus, per dozen .	4 0–12 0	Marguerite Daisy, per dozen	6 0–12 0
Daffodils, 12 pots ...	9 0–10 0	Myrtles, per dozen...	6 0–12 0
Dracæna terminalis, per dozen ...	30 0–60 0	Palms, in var., each	2 6–21 0
— viridis, per doz.	12 0–24 0	Pelargoniums, scarlet, per doz. ...	6 0– 9 0
Epiphyllum, dozen...	18 0–30 0	Primula sinensis, per dozen	4 0– 6 0
Erica hyemalis, per dozen	12 0–24 0	Solanums, per dozen	9 0–12 0
— various, dozen ...	9 0–24 0	Spiræa, per dozen ...	12 0–24 0
Euonymus, in var., per dozen	6 0–18 0	Tulips, 12 pots ...	6 0– 8 0
Evergreens, in var., per dozen	6 0–24 0		
Ficus elastica, each .	1 6– 7 0		

Cut Flowers.—Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Arum Lilies, 12 blms.	3 0– 5 0	Mignonette, 12 bun.	3 0– 6 0
Azaleas, 12 sprays ...	0 6– 1 0	Pelargoniums, scarlet, 12 sprays ...	0 9– 1 0
Bouvardias, per bun.	0 6– 1 0	Primulas, single, 12 bunches	4 0– 6 0
Camellias, 12 blooms	2 0– 4 0	— double, 12 sprays	1 0– 1 6
Carnations, 12 blms.	1 0– 3 0	Roses, Tea, per doz.	2 0– 4 0
Cyclamen, 12 blooms	0 4– 0 9	— coloured, dozen.	3 0– 6 0
Daffodils, 12 blooms	0 6– 1 6	— red, French, doz.	1 6– 2 0
Eucharis, per dozen	3 0– 6 0	— Saffrano, Fr. doz.	1 0– 1 6
Gardenias. 12 blooms	12 0–30 0	Tropæolums, 12 bun.	1 0– 2 0
Hellebores, or Christmas Roses, 12 bls.	0 4– 1 0	Tuberoses, 12 blms....	2 6– 4 0
Heliotropes, 12 spr.	0 6– 1 0	Violets, 12 bunches...	1 6– 2 0
Jasmine, white, bun.	0 6– 0 9	— Parme, French, per bunch	3 0– 4 6
Lilies of the Valley, 12 sprays	0 9– 1 6	— Czar, Fr., bunch	1 6– 2 0
Marguerites, per 12 bunches	3 0– 6 0		

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apple, ½-sieve	1 6– 5 0	Pears, per dozen	2 0– 4 0
— Nova Scotia, brl.	8 0–12 0	Pine-apples, Eng., lb.	1 0– 1 6
Grapes, per lb.	3 0– 8 0	— St. Michael. each	1 6– 6 0
Kent Cobs, 100 lb.	65 0 70 0	Strawberries, per oz.	0 9– 1 0
Lemons, per case	12 0–21 0		

VEGETABLES—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, per doz.	6 0– ...	Mushrooms, punnet	1 6– 2 6
Asparagus, French, per bundle	18 0– ...	Mustard and Cress, punnet	0 4– ...
— English, per 100	10 0– ...	Onions, per bushel	4 0– ...
Beans, Kidney, lb.	4 0– ...	Parsley, dozen bunch	8 0– ...
Beet, red, per dozen	1 0– 2 0	Peas, per quart	6 0– ...
Brussels Sprouts, lb.	0 4– ...	Potatos, per cwt.	4 0– 5 0
Carrots, per bunch	0 6– ...	,, kidney, per cwt.	4 0– 5 0
Cauliflowers, per doz.	3 0– ...	Rhubarb, per bundle	0 6– ...
Celery, per bundle	1 6– 2 0	Seakale, per punnet	2 6– ...
Cucumbers, each	0 9– 1 6	Shallots, per lb.	0 3– ...
Endive, per dozen	1 0– 2 0	Spinach, per bushel	5 0– ...
Green Mint, bunch	1 0– ...	Sprue, bundle	1 0– ...
Herbs, per bunch	0 4– ...	Tomatos, per lb.	2 6– ...
Leeks, per bunch	0 3– ...	Turnips, bunch	0 4– ...
Lettuce, per dozen	1 0– 1 6		

POTATOS.—Markets very heavy, at the following prices:—Regents, 80s. to 100s.; Magnums, 70s. to 110s. per ton.

SEEDS.

LONDON: *March* 16.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., write that there was not much business done on the seed market to-day, the sowing demand being naturally checked by the wintry weather. Meantime values all round exhibit great steadiness, stocks generally being in moderate compass. A welcome fact at this period of agricultural depression is, that prices this season are exceedingly low. For Sanfoin and spring Tares there is a good demand, on former terms. Rape seed well maintains its own. Hemp and Canary are dull. More business has lately been done in blue boiling Peas. Other articles remain unchanged.

CORN.

Averages.—The following is an official statement showing the average price of British corn, imperial measure, in the week ended March 12:—Wheat, 32*s.* 7*d.*; Barley, 24*s.* 3*d.*; Oats, 16*s.* 4*d.* For the corresponding week in 1886:—Wheat, 29*s.* 9*d.*; Barley, 28*s.* 6*d.*; Oats, 19*s.* 1*d.*

FRUIT AND VEGETABLES.

COLUMBIA (EAST LONDON): *March* 16.—Moderate supplies, and trade fairly good at prices as follows:—Brussels Sprouts, 1*s.* 6*d.* to 2*s.* 6*d.* per bushel; Sprouting Broccoli, 1*s.* 6*d.* to 2*s.* do.; Curly Kale, 1*s.* to 1*s.* 6*d.* do.; Turnip-tops, 1*s.* 6*d.* to 2*s.* 6*d.* do.; Savoys, 2*s.* 6*d.* to 6*s.* 6*d.* per tally; Cauliflowers, 1*s.* to 2*s.* per dozen; Greens, 2*s.* to 2*s.* 6*d.* per dozen bunches; Carrots, 1*s.* 6*d.* to 2*s.* do.; Turnips, 1*s.* 6*d.* to 2*s.* do.; Celery, 6*d.* to 1*s.* per bundle; Onions, 4*s.* 6*d.* to 5*s.* 6*d.* per cwt.; foreign do., 3*s.* to 4*s.* 3*d.* per bag; Carrots, 14*s.* to 22*s.* per ton; Apples, 5*s.* to 7*s.* 6*d.* per bushel; American do., 12*s.* 6*d.* to 19*s.* 6*d.* per barrel.

POTATOS.

BOROUGH AND SPITALFIELDS: *March* 15.—The market has been very dull; attendance of buyers thinned by the weather. Quotations:—Regents, 70*s.* to 110*s.*; Magnum Bonums, 55*s.* to 90*s.*; and Champions, 50*s.* to 80*s.* per ton.

STRATFORD: *March* 15.—Quotations:—Scotch Magnums, 70*s.* to 80*s.*; English do., 65*s.* to 70*s.*; Fenland do., 55*s.* to 60*s.*; Champions, 60*s.* to 65*s.* per ton.

COLUMBIA (EAST LONDON): *March* 15.—Quotations:—Essex Regents, 60*s.* to 80*s.*; do. Magnums, 60*s.* to 75*s.*; do. Champions, 55*s.* to 70*s.*; York and Lincoln Regents, 55*s.* to 80*s.*; do. Magnums, 55*s.* to 75*s.*; do. Champions, 50*s.* to 70*s.*; Cambridgeshire Regents, 55*s.* to 80*s.*; do. Magnums, 55*s.* to 90*s.*; do. Champions, 60*s.* to 70*s.*; Scotch Regents, 70*s.* to 110*s.*; do. Champions, 50*s.* to 65*s.* per ton.

Imports.—The imports into London last week consisted of 799 bags from Ghent, 8256 from Hamburgh, 8 from Rotterdam, 50 barrels from New York, and 27 boxes from Malta.

HAY.

The following are the average of the prices obtained at the various Metropolitan markets during the past week:—Clover, prime, 83*s.* to 100*s.*; inferior, 70*s.* to 84*s.*; hay, prime, 78*s.* to 90*s.*; inferior, 45*s.* to 65*s.*; and straw, 30*s.* to 42*s.* per load.

STANDEN'S MANURE

Established 20 Years.

THIS OLD-ESTABLISHED MANURE is acknowledged by the leading practical Gardeners in the United Kingdom and the Colonies to exceed all others in general fertilising properties and staying powers. It promotes a rapid, healthy, and robust growth to plants generally. *For Vines* it cannot be too highly recommended, and this fact is fully sustained from the result obtained by its use in the hands of some of the most successful Grape growers. It is a clean and dry Powder, with very little smell, which renders it particularly adaptable for ladies interested in plant culture.

The highly fertilising properties of this Manure render its money value in comparison with other manures at least double; and users will find that very small quantities will produce favourable results.

Sold in new and enlarged Tins, 1/-, 2/6, 5/6, 10/6, and 21/- each; and in Kegs at reduced prices—28 lb., 12/6; 56 lb., 23/-; 112 lb., 42/- each.

May be obtained from Nurserymen and Seedsmen in the United Kingdom and the Colonies.

Sole Manufacturers,

CORRY, SOPER, FOWLER & CO.

(LIMITED).

Offices and Show Rooms—
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SHAD THAMES, S.E.

CORRY, SOPER, FOWLER & CO.

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Horticultural Sundries Merchants,

AND MANUFACTURERS OF

TOBACCO PREPARATIONS

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in every Material and Pattern.

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Every Horticultural Requisite Kept in Stock.

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FLOWER SEEDS,

SAVED FROM THE

FINEST STRAINS.

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DESCRIPTIVE SPRING CATALOGUE

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CHOICE SEEDS

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The most complete List issued. Fully described.

BARR'S Large-flowered **Ten-week STOCK.**
Splendid varieties, in mixture.
Per Packet, 1s. and 2s. 6d.

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Splendid varieties, in mixture.
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Splendid varidties, in mixture.
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Splendid varieties, in mixture.
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BARR'S Large-flowered **VICTORIA ASTER**
Splendid varieties, in mixture.
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BARR'S Double German WALLFLOWER.
Splendid Rocket varieties, in mixture.
Per Packet, 1s. and 2s. 6d.
Splendid branching varieties, mixed.
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BARR'S Beautiful Double ZINNIAS.
Magnificent colours, in mixture.
Per Packet, 6d. and 1s.

BARR'S Choice Border CARNATIONS.
Saved from the finest Selfs, Flakes, Biazarres, and Fancy varieties; in mixture.
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BARR'S Choice Yellow CARNATIONS.
Saved from the finest Selfs, Flakes, Biazarres, and Fancy varieties; in mixture.
Per Packet, 3s. 6d.

BARR'S CHOICE PICOTEES.
Saved from the finest White and Yellow Grounds.
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Remarkable for their large and handsome flowers and brilliant hues—beautiful mixture.
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Saved from the finest strain—beautiful mixture.
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Fish Napkins, **2s. 11d.** per dozen. Dinner Napkins, **5s. 6d.** per dozen. Table Cloths, **2** yards square, **2s. 11d.**; **2½** yards by **3** yards **5s. 11d.**; Kitchen Table Cloths, **11½d.** each. Real Irish Linen Sheeting, fully bleached, **2** yards wide, **1s. 11d.** per yard. Roller Towelling, **3½d.** per yard. Surplice Linen, **7d.** per yard. Linen Dusters, **3s. 3d.**; Glass Cloths, **4s. 6d.** per dozen. Fine Linens and Linen Diaper, **8½d.** per yard. Strong Huckaback Towels, **4s. 4d.** per dozen.

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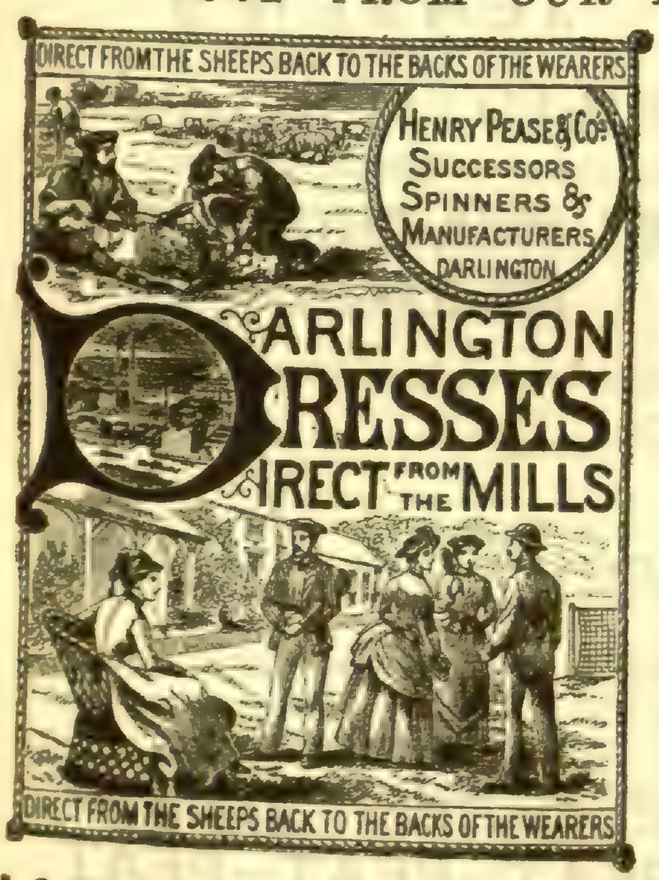

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1 lb. cannisters, 1*s.* 3*d.*; ½ lb. 8*d.*; ¼ lb. 4½*d.*; 1 oz. Packets, 1*d.*

THE NEW (VEGETABLE) SOUP.

To meet an ever-increasing demand for a purely Vegetable Soup, we have just introduced such an article, guaranteed to contain neither beef nor extract of beef; of itself a rich, nutritious Soup, and excellent as the groundwork of all White Soups and Sauces. 1 lb. cannisters, 1*s.* 3*d.*; ½ lb. 8d.; ¼ lb., 4*d.* Sold by all Grocers. **If you cannot obtain it otherwise, a sample of both Soups, sufficient to make a pint of each, will be sent on** receipt of 3½*d.* in stamps by the Sole Manufacturers, FRED. KING & CO., Limited, 26, Waring Street, Belfast, and 6, Bishopsgate Avenue, London.

NATIVE GUANO.—Price £3 10*s.* per ton in bags; lots under 10 cwt., 4*s.* per cwt. Sample bag (1 cwt.) sent, carriage paid, to any station in England on receipt of P.O. for 5*s.*

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The Best and Cheapest Insect Destroyer.

Goes five times as far as any other preparation. Awarded Certificates of Merit at the Principal Shows.

PRICES:—8 oz. bottle with graduated measure, 1*s.* 6*d.*; 20 oz. ditto, 3*s.* 6*d*, (per Post, 4*d.* extra); per gallon, 10*s.* 6*d.* Special Quotations for large quantities.

THE PERFECT MILDEW DESTROYER.—Invaluable for destroying Mould and Mildew on Roses, Vines, &c. Prices: per 8 oz. bottle, 1*s.*; per 20 oz. do., 2*s.*

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THE PERFECT WORM DESTROYER.—Invaluable for destroying Worms on Bowling Greens, Cricket Grounds, Tennis Courts, Lawns, &c., and removing them from the roots of Plants in Pots. It does not injure Grass or the most delicate Plant. Price, per 8 oz. bottle, 1*s.* 6*d.*; 20 oz. do., 3*s.* 6*d.*; per gallon, 7*s.* 6*d.* Orders for 10 gallons and upwards at special rates.

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For Watering.	"LIQUID MANURE POWDER."

Sold in 1*s.* tins, and in 7 lb. bags, and upwards, by all Seedsmen, or direct from

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WOOD & SON'S CATALOGUE and Price LIST, post-free, includes all the best qualities of ORCHID and other PEATS, LOAM, SAND, COCOA-FIBRE, MUSHROOM SPAWN, BONE MEAL, DRIED BLOOD, POTASH, AMMONIA, and all other HORTICULTURAL REQUISITES. Samples free.

PEAT and SAND.—Light Brown PEAT for Nursery and Greenhouse Work, in four-ton trucks of 10 yards each, at 10*s.* per yard. In bags at 2*s.* 6*d.* per bag. Rhododendron and American Plant Beds, at 15*s.* per ton. Orchid Peat, 5*s.* per bag. Fresh SPHAGNUM, 7*s.* 6*d.* per bag. SILVER SAND, coarse or fine, 13*s.* per ton.

WALKER AND CO., Farnboro' Station, Hants.

THOMSON'S IMPROVED VINE and PLANT MANURE.—This valuable Manure is made up solely on our premises here. Every Bag and Tin has our Name on it. It can be had from all Nurserymen and Seedsmen, and direct from us, 1 cwt. and over carriage paid.

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To Market Gardeners, &c.

To Grow fine Vegetables and Flowers, Gardeners should use

SULPHATE OF AMMONIA.

One trial will prove the great value of this Manure, and ensure its constant use hereafter. It can be applied either separately or mixed with ordinary stable or farmyard manure. Rose Trees and Garden Plants are much benefited by being watered with a weak solution once or twice a week. Instructions on application, post free. Price free on rail at Sheffield, 12*s.* 6*d.* per cwt., or 7*s.* per 56 lb. P. O. Orders payable to

The MANAGER, Sheffield Gas Company, Sheffield.

MECHI'S SOOT AND SEWAGE MANURE.

A dry powder, carefully manufactured by Mechi's process,

WHICH IS DISTINCT FROM ALL OTHERS.

The very best Manure for Roots, Grass, Potatos, Wheat, Barley, Oats, Turnips, Mangels, Fruit, Vegetables, Hops, &c.

DESTROYS WIREWORMS, SLUGS, INSECTS, and GRUBS.

35s. per Ton loose; 40s. per Ton in bags; 4s. per Cwt. in bag.

Delivered Free on Rail or Boat.

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"The Metropolis Sewage Company succeeded in proving that *sewage rendered a poor gravel farm of* 200 *acres or* 300 *acres the most productive piece of land in the United Kingdom.* They had grown superb Strawberries of very good flavour, capital Corn, Maize 15 feet high, and Vegetables as good as Covent Garden ever exhibited."

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HONOURABLE MENTION and AWARD of MERIT Hull and East Riding Chrysanthemum Soc., 1886.

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Especially adapted for cultivation of

FLOWERS, FRUITS, AND VEGETABLES.

Is not a Chemical production, but a purely natural Guano.

Useful everywhere alike, in Flower Garden, Conservatory and Greenhouse.

Packets, 1 lb., 6*d.*; 2 lb., 1*s.*; *postage extra.* Bags, 7 lb., 2*s.* 6*d.*; 14 lb., 4*s.* 6*d.*; 28 lb., 7*s.* 6*d.*; 56 lb., 12*s.* 6*d.*; 112 lb., 20*s.*, *carriage paid. Of the principal Nurserymen, Seedsmen, Florists and Chemists, or direct from*

William Colchester, Ipswich.

The genuine bears the Trade Mark and Name in full.

TOBACCO CULTIVATION IN ENGLAND.

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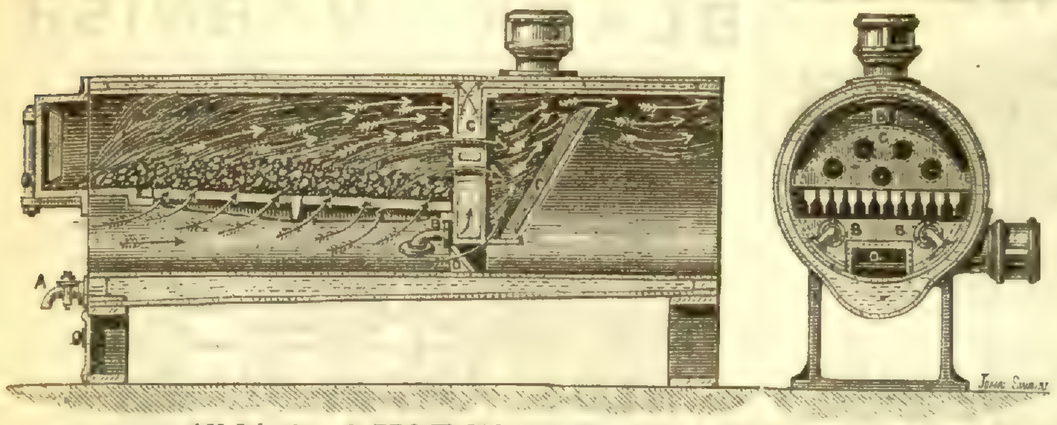

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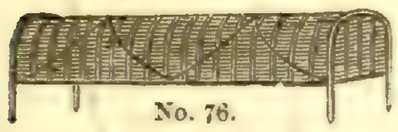
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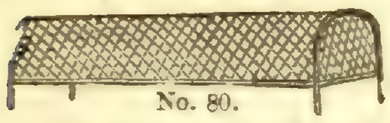
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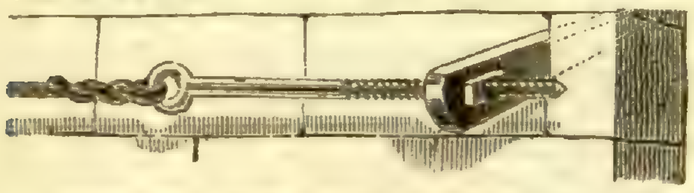

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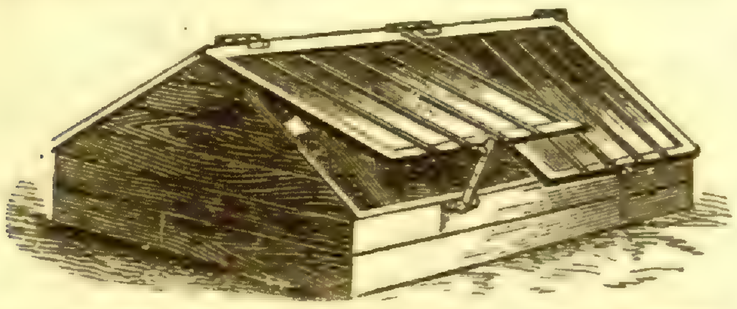

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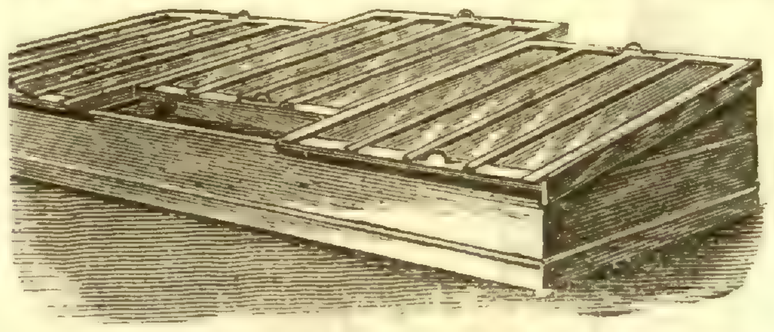

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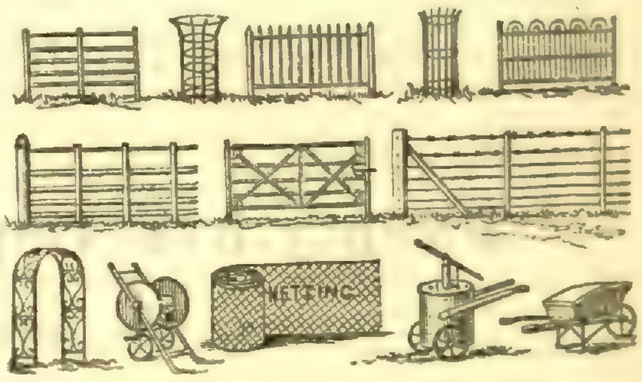

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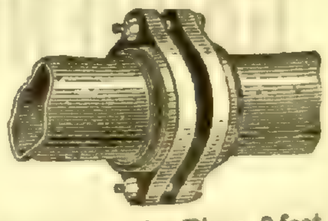

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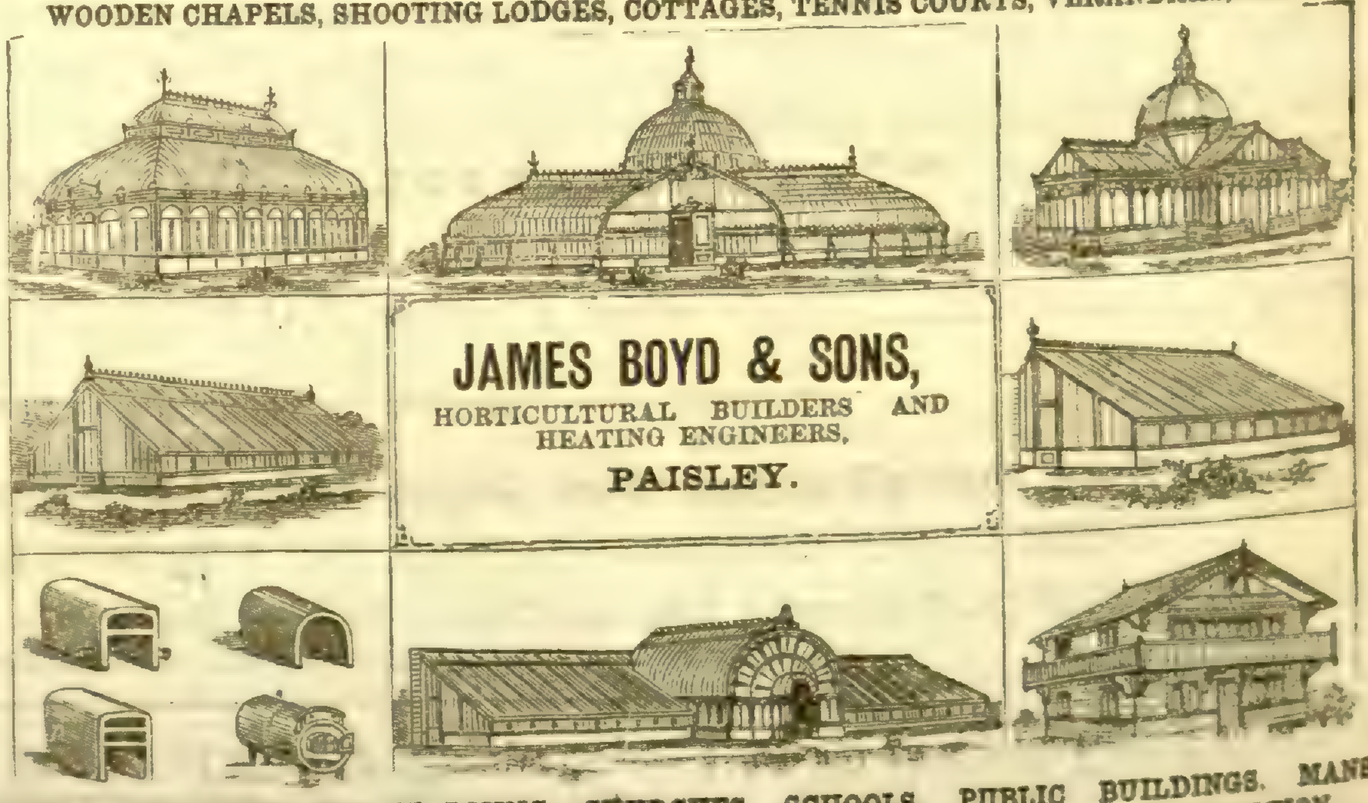

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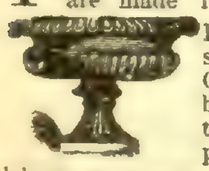

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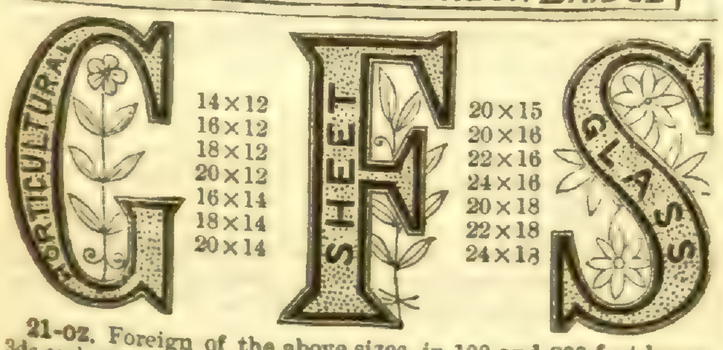

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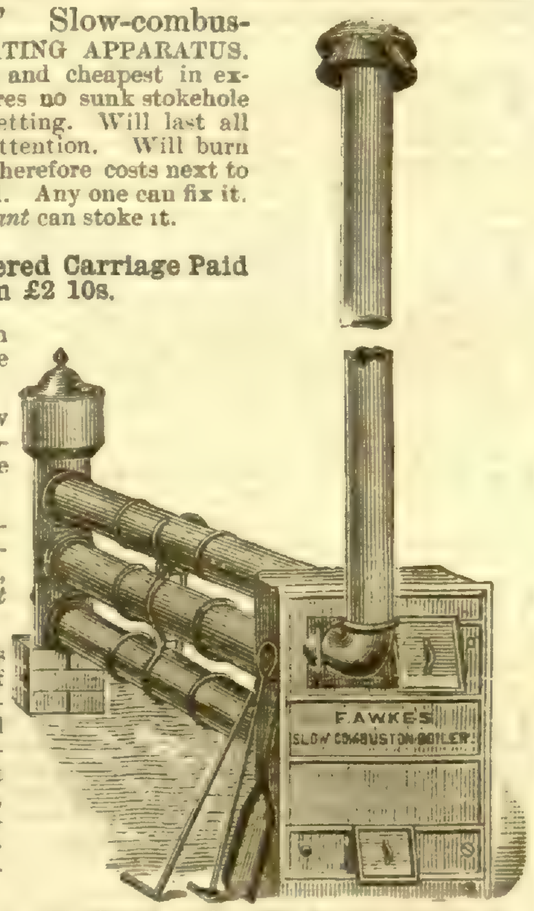

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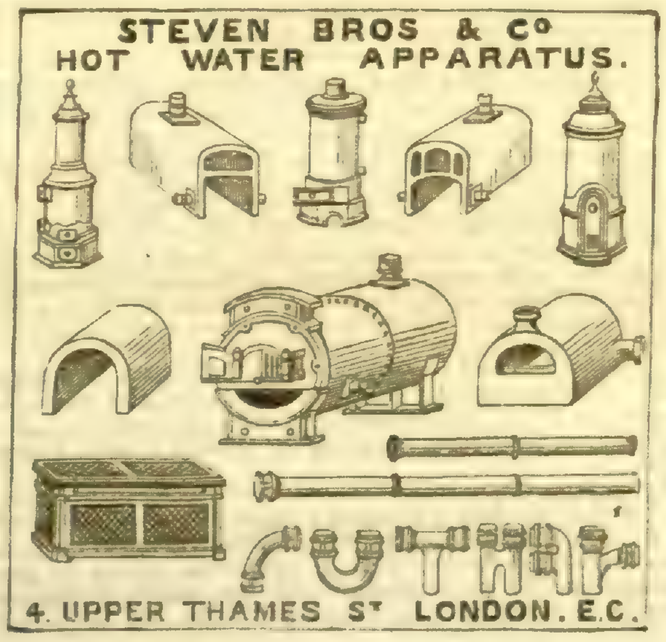

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GARDENING APPOINTMENTS.

Mr. F. W. Seers, late Head Gardener to F. J. Myers, Esq., Charlton Lodge, Banbury, has been appointed Head Gardener to the Right Hon. the Earl of Aylesford, Offchurch, Bury, Leamington.

Mr. William Rewbury, Head Gardener to C. T. Cavendish, Esq., Crakemarsh Hall, Uttoxeter, has been appointed Head Gardener to F. J. Myers, Esq., Charlton Lodge, Banbury.

Mr. W. Rutherford, for the last two and a half years Foreman at Carton, Maynooth, has been appointed Gardener to Charles W. Barton, Esq., Glendalough House, Aranoe, Co. Wicklow.

Mr. Geo. Cliffe, for the last eight years Head Gardener to Lord Belmore, Castle Coole, Fermanagh, Ireland, has been appointed Head Gardener to H. B. Mildmay, Esq., Shoreham Place, Kent.

Mr. F. W. Russell, late Foreman to Mr. J. Willard, Holly Lodge Gardens, Highgate, N., has been engaged as Head Gardener to E. T. Doxet, Esq., Woodgreen Park, Cheshunt, Herts.

WANT PLACES.

POSTAL ORDERS.—To Advertisers, Subscribers, and Others.—It is very important in Remitting by Postal Order that it should be filled in payable at No. 42, DRURY LANE, to W. RICHARDS, as, unless the Number of a Postal Order is known, and it has been made payable at a particular office, and to a particular person, it is impossible to prevent any person into whose hands it may fall from negotiating it.

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JOURNEYMAN, or Second, in a good establishment.—Age 23; nine years' experience. Can be well recommended.—H. CROOKS, Holloway, near Cromford, Derby.

IMPROVER, in a large Garden.—Age 18; four years' experience. Good references.—T. J. DENNIS, 10, Wellington Street, Silverhill, St. Leonards-on-Sea.

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MANAGER, HEAD SHOPMAN, or TRAVELLER.—The Advertiser is open for an engagement as above, having had twenty years' first-class practical experience in every department of the Seed Trade. Well up in Vegetable, Flower, and Agricultural Seeds.—ALPHA, Mr. A. Fraser, 90, Queen Street, Exeter.

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Seed Trade.

SHOPMAN—also used to Plant and Flower Trade.—Age 27; good Penman and Accountant. Good references.—W. HARRIS, Hammerwood, East Grinstead, Sussex.

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Seed Trade.

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Seed Trade.

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Seed Trade.

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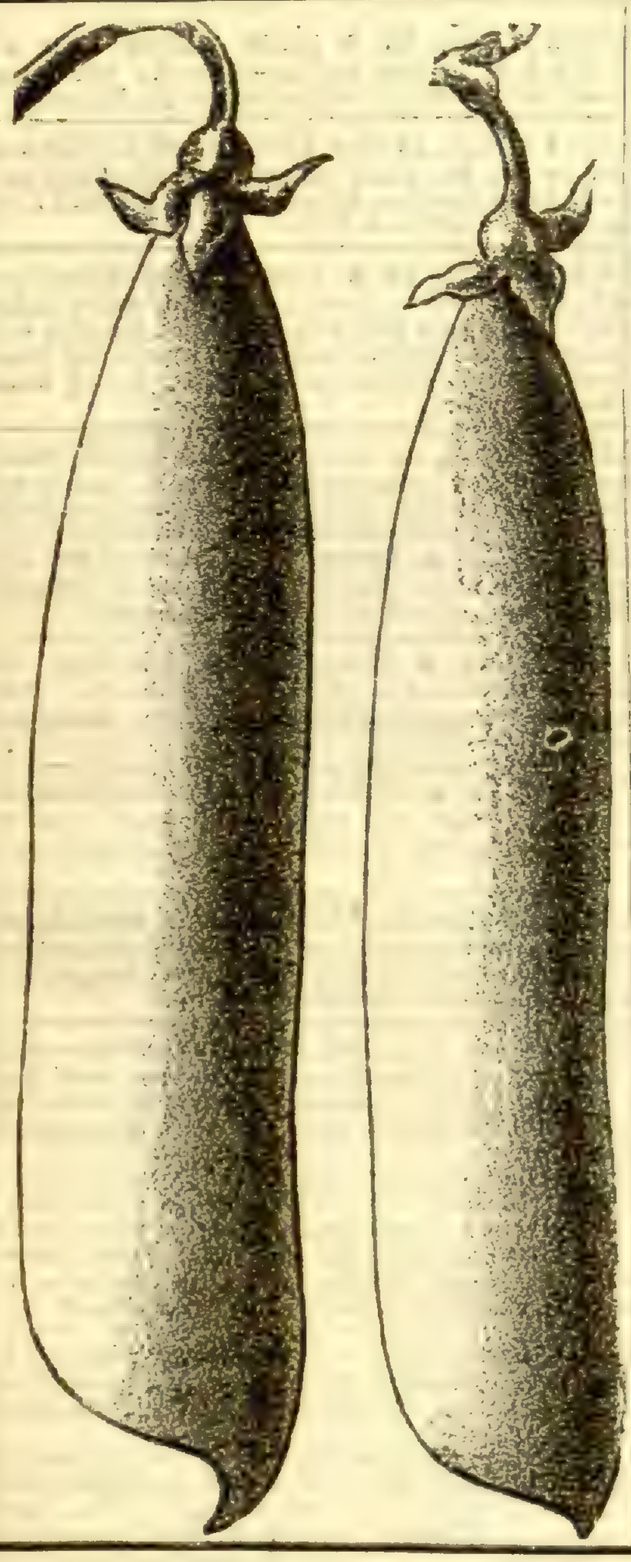

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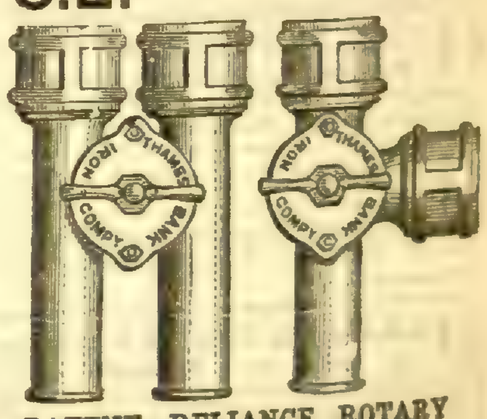

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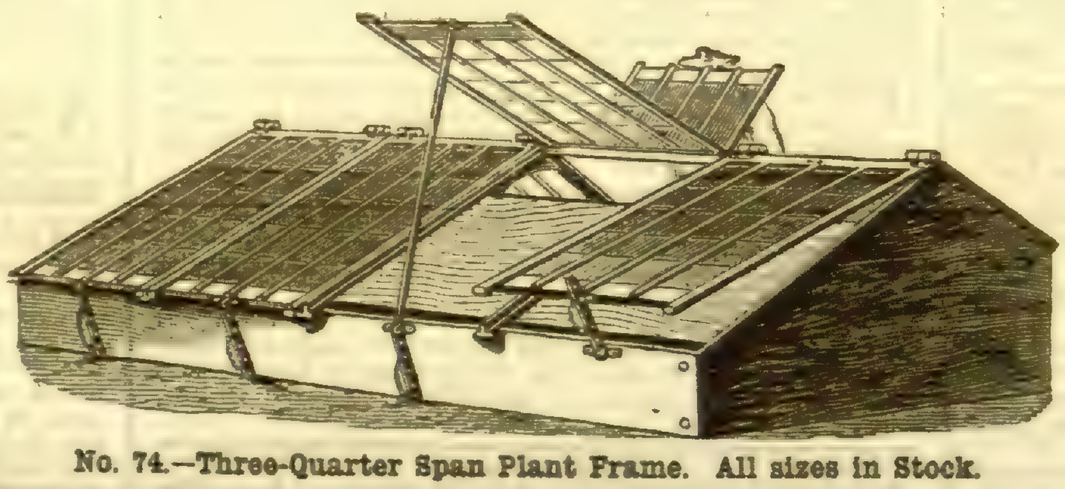

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Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
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CONTENTS.

Algæ, genetic affinities of 421
Cultural Memoranda ... 422
Daffodil Ard-Righ ... 416
Dendrobium chrysodiscus × × 414
,, melanodiscus × × 414
Devonhurst, Chiswick ... 422
Evergreens, planting ... 422
Fern reproduction, a curious fact in ... 422
Figs, Indian 421
Frost Report 420
Gardeners' Orphanage ... 420
Gardening appointments 434
Gladiolus, the 418
Gordon Castle, Apricot bloom at 422
Kitchen garden, the ... 419
Lælia anceps at home ... 413
,, ,, vars. Hilli and Dawsoni ... 424
Law :—
Little & Ballantyne *v.* Edinburgh Exhibition 423
Purser *v.* Worthing Local Board 422
Liverpool Exhibition ... 420
Narcissus Bulbocodium × Pseudo-Narcissus ... 414
Obituary :—
De Smet, M. L. ... 428
Leech, Mr. W.... ... 428
Milford, Mr. J. ... 428
Orchard-house, the ... 424
Orchid-houses, the ... 418
,, notes 419
Orchids at Fernside, Bickley 419
Phalænopsis at Heaton House, Cheshunt ... 422
Phlox, the 422
Plants and their culture 415
Prunus Pissardi 416
Rating of nurseries 421, 422
Roses 416
Royal trees 422
Smith & Co.'s Nursery, Worcester 415
Societies :—
Aberdeen Royal Horticultural 427
Preston and Fullwood 426
Royal Botanic 426
Royal Horticultural ... 424
Scottish Horticultural Association 427
Violets at Shardeloes ... 414
Weather, the ... ...
Wonderful plants ... 422

ILLUSTRATIONS.

Daffodil Ard-Righ 416
Phalænopsis at Heaton House. See Supplement.
Prunus Pissardi 416
Lælia anceps var, Dawsoni 424
,, ,, var. Hilli 425

NOTICE TO SUBSCRIBERS.—All Numbers of the "Gardeners' Chronicle" from January 1 of this year are still to be had.

GLASGOW and WEST of SCOTLAND HORTICULTURAL SOCIETY.
The SPRING FLOWER SHOW will be held within St. Andrew's Halls, Granville Street, Glasgow, on WEDNESDAY, March 30. Prize Schedules and Tickets of Admission to be had from the Treasurer, Mr. CHAS. MACDONALD WILLIAMSON, 194, West George Street, Glasgow; any of the Directors, or at my Office here. Members' Tickets, 2*s.* 6*d.* each.
THANE GIBB DOUGALL, Secretary.
167, Canning Street, Glasgow.

BATH and WEST of ENGLAND and SOUTHERN COUNTIES ASSOCIATION.
DORCHESTER SHOW, MONDAY, May 30, 1887.
Prizes will be given for ORCHIDS as usual this year. For further particulars apply to
Hon. and Rev. J. T. BOSCAWEN, Lamoran Probus, Cornwall.

PONTEFRACT, KNOTTINGLEY, and ACKWORTH CHRYSANTHEMUM SOCIETY. The FIRST EXHIBITION will be held in the Town Hall, Pontefract, NOVEMBER 25 and 26. Over SIXTY POUNDS offered in Prizes. Schedules from
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W. JACKSON, Blakedown, Kidderminster.

HENRY ORMSON AND CO., HORTICULTURAL BUILDERS and HOT-WATER ENGINEERS, Stanley Bridge, King's Road, London, S.W. Designs for Conservatories, Greenhouses, and Heating by Hot-water free on application. See large advertisement, March 12, page 344.

Wanted, Address.
FRANCIS AND CO., late of Eagle Telegraph Works, Hatton Garden, E.C.
PUBLISHER, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

To the Trade.
BEFORE Ordering PALM SEEDS
Write for Special Low Offer to
H. DAMMANN, Jr., Breslau, Germany.
Best references. Guarantee for germinating.

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PRUNUS MYROBALANA, or CHERRY PLUM.—The best stuff for Mending Old Fences or Making New Ones. Grows fast in poorest soils. Much stronger than Whitethorn. It is also an excellent Stock for the Plum. A sample hundred, 2 to 3 feet, sent on receipt of 6*s.*, 50 for 3*s.* Full further particulars of
EWING AND CO., Sea View Nurseries, Havant, Hants.

The Choicest Specimens of Evergreen TREES and SHRUBS.
RICHARD SMITH AND CO. beg to announce that they have just published a little LIST in which they offer the above at prices practically within the reach of all, and they will be happy to send same free by post.
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JOHN LAING AND CO. have a grand stock of Tubers, carefully and specially selected to colour for bedding from our outdoor beds last summer, three shades of crimson, orange-scarlet, magenta, pink, rose, scarlet, white, &c. Per dozen, post-free, 6*s.* Cultural Directions in CATALOGUE.
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Trade Price Current—Farm Seeds—1887.
PETER LAWSON AND SON (Limited), Edinburgh, have now Posted their ANNUAL CATALOGUE of AGRICULTURAL SEEDS to their customers, but should there be any not delivered, Copies will be sent upon application.

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LOVEL'S STRAWBERRY PLANTS, 100, 2*s.* 6*d.*; 500, 10*s.*; 1000, 15*s.*
Sample and Pamphlet, 3*d.* Select LIST free.
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SQUELCH AND BARNHAM, North Row, Covent Garden, W.C., are OPEN TO DISPOSE OF any quantity of MUSCATS and BLACK GRAPES, TOMATOS, FRENCH BEANS, STRAWBERRIES, CHOICE FLOWERS, &c. Highest Market Prices obtained; Account Sales daily, Cheques weekly or as preferred by Sender. Baskets and Labels supplied. References given.

MESSRS. GREGORY AND EVANS, NURSERYMEN, Sidcup, and 285, 286, 287, 288, Flower Market, Covent Garden, W.C., are open to RECEIVE CONSIGNMENTS of Choice CUT FLOWERS in any quantity for their Commission Department. Boxes and Labels supplied.
Telegraph Address—"COMMISSION, SIDCUP."

WANTED, Tall Feathery PALMS—Arecas, Seaforthias, and Kentias; DRACÆNAS and CYCAS REVOLUTA.—State size, number of leaves, &c., to
WILLIAM ICETON, Putney Park Lane, Putney, S.W.

WANTED, large PALMS, TREE FERNS, and other large ORNAMENTAL FOLIAGED PLANTS, in EXCHANGE for ORCHIDS or other PLANTS. Send full particulars.
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WANTED, tall PALMS, for cash. Particulars to
ROBERT GREEN, Floral Establishment, Crawford Street, W.

WANTED, Large Specimens of KENTIAS, SEAFORTHIAS, LATANIAS, and ARECAS. Good prices given for fine plants.
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WANTED, LOUDON'S *HORTUS BRITANNICUS*, New or Second-hand. State condition and price.—LEWIS AND INNES, 34, Great St. Helen's, City, E.C.

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NEW FUCHSIAS for 1887 are now ready for delivery.
They are of fine quality and habit, excellent growers and quite distinct from anything he has yet sent out. A Descriptive LIST sent on application. Liberal terms to the Trade.
The Gardens, Clyffe Hall, Market Lavington, Wilts.

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QUEEN OF WHITES IMPROVED.—It is without doubt the best White Zonal ever offered. It has been in flower all the winter at our Nurseries, and will be ready to send out May 1. £1 per dozen, strong plants. Certificate Royal Botanic Society, May 19, 1886.
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GEO. JACKMAN AND SON, Woking Nursery, Surrey.

Begonias a Specialty.
LAING'S BEGONIA SEED.—Awarded Two Gold Medals. From Prize Plants, in sealed packets. Choice mixed, from single varieties, 1*s.*, 2*s.* 6*d.*, and 5*s.* per packet; double varieties, 2*s.* 6*d.*, 3*s.* 6*d.*, and 5*s.* per packet. Collections—12 named varieties, separate, 5*s.* 6*d.*; 6 ditto, 3*s.* Order direct from us, to procure the genuine seed.
JOHN LAING AND CO., Seedsmen, Forest Hill, S.E.

Rhododendrons.
JOHN WATERER AND SONS, Bagshot, Surrey, are the Great Exhibitors of Hardy Scarlet and White RHODODENDRONS.
Their CATALOGUE is ready, and may be had on application.

FOR SALE, about Fifty well-grown compact Irish YEWS, 6 to 8 feet high. Have been transplanted two years. Price 5*s.* each, on rail at Leicester. Apply
J. PANTER, Stoneygate Road, Leicester.

AUGUSTE VAN GEERT, Continental Nursery, Ghent, Belgium, begs to inform Friends and Customers that his Special Spring Trade LIST is just out, and may be had on application. A splendid stock of PALMS, all sizes, now ready.

ORCHIDS A SPECIALTY. Stock immense in extent, fine in quality, moderate in price. Inspection invited.
HUGH LOW AND CO., Clapton Nursery, London.

PANSIES.—Scotch Prize Pansies, 50 best Exhibition varieties, 12*s.* 6*d.*, 26 for 6*s.* 6*d.*, 14 for 4*s.* 6*d.*, post-free, my selection of strong healthy plants.
Competitors please note—Cuthbertson's New CATALOGUE of Competition Flowers and Vegetables, with 30 Illustrations, free to all. Send for a copy.
M. CUTHBERTSON, Seed Grower, Seed Merchant, and Florist, Rothesay.

To the Trade
VEGETABLE and AGRICULTURAL SEEDS.
H. AND F. SHARPE will be pleased to give special quotations for all their fine selected stocks of the above-named Seeds of 1886 growth. Their prices will be found very advantageous to purchasers.
Seed-growing Establishment, Wisbech.

Notice to the Trade.
NUTTING AND SON'S Wholesale CATALOGUE of AGRICULTURAL SEEDS has now been posted to the Trade; please inform them if not duly received.
106, Southwark Street, London, S.E.
Telegraphic Address—"NUTTING, LONDON."

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PETER LAWSON AND SON (Limited), Edinburgh, are prepared to Book Orders for the "IMPERATOR" POTATO, as sent out by them, also other leading kinds. Prices upon application.

SALES BY AUCTION.

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CARNATIONS, PICOTEES and PINKS, a choice Collection of the best named sorts, 400 named Standard and Dwarf ROSES, selected FRUIT TREES, SHRUBS, and various other plants for the garden.

MESSRS. PROTHEROE AND MORRIS will SELL the above at the City Auction Rooms, 38 and 39, Gracechurch Street, E.C., on TUESDAY NEXT, March 29, at 12 o'Clock precisely,

On view morning of Sale. Catalogues at the Rooms, and at the Auctioneers' Offices, 67 and 68, Cheapside, E.C.

Tuesday Next.

ORCHIDS IN FLOWER. SPECIAL SALE,

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, March 29, at half-past 12 o'Clock precisely, nearly 400 Lots of ORCHIDS, in flower and bud, from various collections. Amongst them are :—

Cœlogyne cristata alba, very fine plant	Pescatoria Lehmanni
,, ,, Chatsworth variety	Cypripedium calurum Regnieri

Dendrobium Ainsworthii roseum, Odontoglossum Alexandræ, many fine varieties; Odontoglossums in variety; Lælia anceps var. Percivaliana, Sophronitis, Dendrobiums, Cypripediums, Masdevallias, Cattleyas, &c.

On view morning of Sale, and Catalogues had.

Wednesday Next.

3,000 LILIUM AURATUM, splendid bulbs.
10,000 FREESIA REFRACTA ALBA, from the Cape, very fine bulbs.
5,000 COCOS WEDDELLIANA SEEDS from Brazie.

MESSRS. PROTHEROE AND MORRIS will include the above in the SALE at their Rooms, on WEDNESDAY NEXT, March 30.

On view morning of Sale, and Catalogues had.

Every Wednesday and Saturday.

SALES of CAMELLIAS, AZALEAS, PALMS, and other PLANTS in variety, from Belgium, and elsewhere; LILIUM AURATUM and many rare LILIES, also a collection of beautiful IRIS from Japan (see native drawings), 500 choice named Dwarf ROSES, CARNATIONS, PICOTEES, English grown LILIES, and a great variety of hardy BULBS and PLANTS.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., every WEDNESDAY and SATURDAY, at half-past 12 o'Clock precisely each day.

On view mornings of Sale, and Catalogues had.

Teddington, S.W.

By order of the Executors of the late Mr. Robert Laing. Short Notice.—Clearance Sale, without reserve, the land being required to be cleared at once.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, the Nursery, Teddington, near Strawberry Hill Station, on THURSDAY, March 31, at 12 o'Clock precisely, the whole of the well-grown NURSERY STOCK, comprising large quantities of Coniferæ and Evergreens, including fine Cedrus Deodara, Green and Variegated Hollies, Yews, Piceas, Cupressus, Thuias, Laurels, &c.; 1000 Limes, 3 to 10 feet; Deciduous Shrubs in variety, Ornamental Trees, 3000 Standard, Dwarf-trained, and Pyramid Fruit Trees; 5000 Currants and Gooseberries, thousands of Dwarf Roses, &c.

May now be viewed. Catalogues may be had on the Premises, or at the Twickenham Nursery, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

N.B.—The important FREEHOLD ESTATE, comprising about 3½ acres of valuable Building Land, will be SOLD by AUCTION, by Messrs. PROTHEROE AND MORRIS, at the Mart, London, E.C., towards the end of April next, by order of the Executors. Plans and particulars are in course of preparation, and will be issued in due course.

Friday Next.

ESTABLISHED and IMPORTED ORCHIDS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, April 1, at half-past 12 o'Clock precisely, IMPORTED ORCHIDS from Brazil and elsewhere, SARRACENIAS from New Jersey, and a large quantity of ESTABLISHED ORCHIDS from various owners.

On view morning of Sale, and Catalogues had.

The Downside Collection of Orchids.

Highly IMPORTANT SALE of selected duplicate plants from this renowned Collection, consisting chiefly of plants matchless in point of rarity and culture.

By order of Wm. Lee, Esq., in consequence of the overcrowded state of the houses.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to SELL by AUCTION, on the Premises, Downside, Leatherhead, on TUESDAY and WEDNESDAY, May 3 and 4, at half-past 12 o'Clock precisely each day, selected duplicate and other ESTABLISHED ORCHIDS.

A list of the principal plants will be found in the *Gardeners' Chronicle* for Saturday March 19, 1887.

The Orchids may be viewed any day prior to the Sale on presentation of Catalogue or card to view, which are now ready, and may be obtained of Mr. WOOLFORD, the Head Gardener, on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Hampton, Middlesex.

At very low Reserve.—To Nurserymen and Florists, &c.

MR. J. EMBLETON will SELL by AUCTION, at the "Red Lion" Hotel, Hampton, on THURSDAY, April 7, at 6 o'Clock in the evening, 7A. 2R. 21P. well adapted for the above purposes, and situated close to Hampton Station, South-Western Railway.

Particulars and conditions of Sale may be obtained of Messrs. SANKEYES AND FLINT, Solicitors, Canterbury; and the Auctioneer, Suffolk House, New Hampton.

Tuesday Next.—(Sale No. 7385.)

15,000 grand Bulbs of LILIUM AURATUM, and a variety of LILIUM SPECIES, received from Japan in the finest possible condition.

10,000 PEARL TUBEROSES, in fine order, from America; a consignment of CYPRIPEDIUM SPECTABILE, SARRACENIAS, &c., from New Jersey; 300 good Bulbs of GLADIOLUS SAUNDERSII; Six Cases of ARAUCARIA EXCELSA as received, &c.

MR. J. C. STEVENS will SELL the above by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY NEXT, March 29, at half-past 12 o'Clock precisely.

On view morning of Sale, and Catalogues had.

Wednesday and Saturday Next.

Consignments of INDIAN AZALEAS, CAMELLIAS, PALMS, LAURUSTINUS, DRACÆNAS, and other PLANTS, from Ghent; Standard and Dwarf ROSES, Pyramid and Dwarf-trained FRUIT TREES, Ornamental SHRUBS and CONIFERS; a great variety of BORDER PLANTS, LILIUMS, GLADIOLI, &c.

MR. J. C. STEVENS will SELL the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY and SATURDAY NEXT, March 30 and April 2, at half-past 12 o'Clock precisely each day.

On view mornings of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7387.)

VALUABLE COLUMBIAN and BRAZILIAN ORCHIDS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, March 31, at half-past 12 o'Clock precisely, by order of Mr. F. Sander, a splendid importation of LÆLIA PURPURATA, just to hand in compact masses, well leaved, and in good order; a fine lot of L. ELEGANS, with large bulbs, some very distinct looking ONCIDIUM MARSHALLIANUM, in fine masses, CATTLEYA LEOPOLDII, in fine condition. Also a fine lot of a very distinct and broad-leaved CYPRIPEDE, which closely resembles C. Schlimii in growth, and produces stout spikes freely branched, probably a wonderful form of that species; ODONTOGLOSSUM PESCATOREI, in large plump bulbed pieces, collected in the best locality; O. TRIUMPHANS, ONCIDIUM CUCULLATUM MACROCHILUM, ADA AURANTIACA, ODONTOGLOSSUM BLANDUM, CŒLOGYNE SPECIES, STANHOPEA SPECIES, ZYGOPETALUM SPECIES, and a quantity of Burmese DENDROBES, and other fine ORCHIDS.

On view morning of Sale, and Catalogues had.

Special Sale of Orchids in Flower and Bud.

MR. J. C. STEVENS begs to announce that his next SALE of ORCHIDS in FLOWER and BUD will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY April 20, at half-past 12 o'Clock precisely, and he will be glad if gentlemen desirous of entering plants for this Sale will send particulars as soon as possible.

SALE OF THE "HARVEY" COLLECTION OF ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

Wish to state that all Orders for ORCHIDS from this fine Collection will now be executed as received.

The Collection includes fine Specimens of the most rare and choice kinds of CATTLEYAS, ODONTOGLOSSUMS, ONCIDIUMS, LÆLIAS, DENDROBIUMS, MASDEVALLIAS, PHALÆNOPSIS, VANDAS, AERIDES, CŒLOGYNES, &c., &c.—Mr. Harvey having devoted many years to collecting the very choicest varieties which he could obtain of these and the other species.

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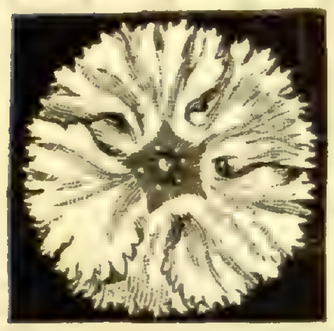

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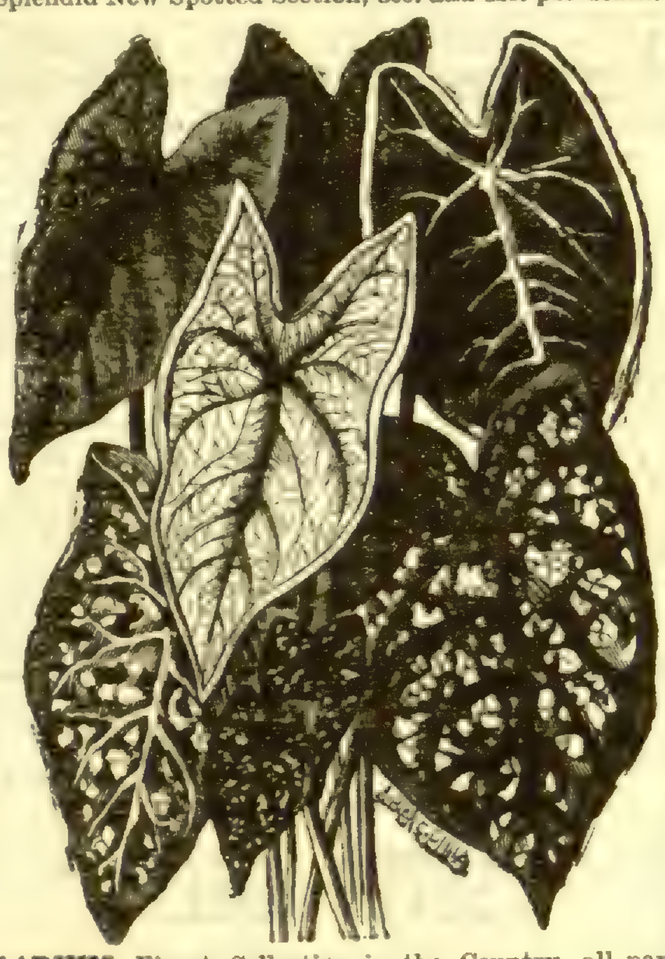

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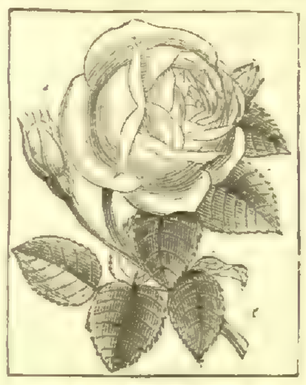

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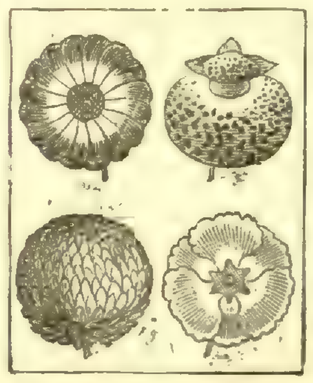

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TO THE
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FOR
Next Week, April 2,
WILL BE
Published an Ink-Photograph
OF
A GROUP OF DRACÆNAS
AT
Tresco Abbey, Scilly.

THE
Gardeners' Chronicle.

SATURDAY, MARCH 26, 1887.

LÆLIA ANCEPS AT HOME.

DURING my long residence in Mexico I have many a time found plants of Lælia anceps growing in my Coffee plantation in the neighbourhood of Cordova in the State of Vera Cruz. I always met with them on the borders of the virgin forests, growing on the trunks of trees and on the very slender branches exposed to a powerful sun and to strong winds, often also clinging to the rocks covered with the remains of leaves and moss under the same conditions. During the rainy season—from May to October—these plants are daily drenched by the torrents of rain of which they experience the full force, often for five consecutive hours, and are thoroughly wet throughout the night. About 6 o'clock in the morning a sharp and fresh wind coming from the highest peaks of the Cordilleras—many of which are capped with perpetual snow—begins to dry the plants—a work which the burning sun completes, pitilessly shining on them for several hours, until the daily storm drenches them afresh. Under these conditions Lælia anceps grows with extraordinary vigour, and flowers about the end of October or November, just at the time when the new bulbs arrive at their perfect development. The rainy season has been over some weeks, and the absence of water, combined with the strong winds, commences to produce an opposite effect; growth stops, the newest bulbs become firm, and ripened so as to prepare the plant for a thorough and necessary rest. About the end of February, from the base of the new bulbs are seen to appear from a small circle, six to ten or more new roots. It is at the time of the short rainy season—the *chipichipi* of the Indians, the Golden Rain of the Coffee planters—when very fine rain falls almost like a fog. These young roots eagerly seek the neighbouring *débris* and moss, but their tips are always in the air. The *chipichipi* does not saturate the plants as it is too weak, and hardly able to refresh them: thus the plants rest, getting plenty of repose until the new roots, nourished by the continually increasing dew, have

*

attained their full development. Then—in March—the new growth appears at the bases of these latter bulbs. It is the time of awakening.

Here is a fact which has often struck me: the bulbs of plants fully exposed to the sun are always large, hard, and of a reddish colour, the leaves leathery and broad; whilst those plants which, grow more in the shade have longer and thinner bulbs and leaves. This may be noticed even in the same clump when part of the bulbs are obliged to grow in the sun, and others in slight shade.

These indications are sufficient to show what is the proper mode of cultivation to be followed in our houses. My experience of eleven years has taught me that good cultivation depends chiefly on full exposure to light, copious daily syringings, and free ventilation. I have grown many varieties of Lælia anceps, both red and white, in pots with turf, on wooden blocks, in baskets, and on rafts, always with little planting material, and I have succeeded, except when I employed sphagnum, which retains moisture too long, and destroys the young roots.

As to the temperature, I have found that during winter, and when the houses must be artificially heated, the less heated and most arid part of the Cattleya-house suits them admirably; but these plants, and especially the red-flowered forms, are also satisfied with the Odontoglossum-house. In summer cultivation in the open offers no inconvenience when the plants are protected from the sun's rays between the hours of eleven in the morning and three in the afternoon, and if water be not spared.

It is advisable that L. anceps should have so far completed its growth about the end of August that the flower stems should then appear, as they will require three months to expand fully, as these plants will have a much better chance of flowering the following year than those which flower later on, as this species requires a decided rest and prefers to recommence growth later than March.

I have often heard great complaints concerning the unsuccessful culture of white varieties of L. anceps, but which I find unjustified, as there is nothing more easy than to grow these plants as well as the type; with the exception that the white-flowered forms need a temperature of 1° to 3° F. higher in winter as they come from the Pacific coast, which is warmer than that of the Gulf of Mexico.

L. anceps is widely distributed along the eastern side of the Cordilleras, from Jalapa southwards to Orizaba. There are many varieties to be met with there, such as L. a. Barkeri, and later on L. a. Dawsoni, found by M. Finck in the neighbourhood of Cordova, growing on a tree which was covered with it, but which was stripped in 1874 by an Indian collector, who sold the plants in Mexico, where they were all lost. In more recent times the new and chaste varieties known as Schrœderi, with very thick short bulbs, Percivaliana, Veitchii, Williamsi, vestita, rosea, Hilliana, &c., have been discovered. As far as I know nobody looks for Lælia anceps in other districts of Mexico, just as no one thinks of looking for Odontoglossum Rossi, Oncidium incurvum, O. ornithorhynchum, &c., on the western face, or, on the other hand, for Odontoglossum citrosmum, O. pulchellum, O. læve, O. Reichenheimi, Oncidium tigrinum, O. stelligerum, &c., on the eastern side. What was my surprise when, in 1883, one of my collectors announced that he had found on the Pacific coast, in the midst of a large virgin forest, on cold ground, an enormous rock covered with Lælia anceps with white flowers. These plants were sent off to me, the collector giving the following brief description:—1, a variety with flowers perfectly white with a little yellow in the centre; 2, white, with crimson (solferino) in the centre; 3, a plant with blush flowers and crimson in the centre.

After cultivating them for two years I sent flowers of these three types to Professor Reichenbach, who called them new varieties as follows:—1, Lælia anceps munda; 2, L. a. Dawsoni pallida; and 3, L. a. Kienastiana (see *Gardeners' Chronicle*, March 6, 1886). Since then other white varieties have been introduced from the Pacific coast, as L. a. var. Stella and L. a. var. Sanderiana, of equal beauty. *L. Kienast-Zölly, Zurich.*

PLANTS NEW OR NOTEWORTHY.

*** In order to distinguish between hybrids between two separate species the sign × is, in common use, sometimes placed before, sometimes after the specific name. To further indicate mongrels or the progeny of already crossed species, Professor Reichenbach proposes henceforth to adopt ×× or ×××, according to the number of crosses. In cases of crosses of unknown or uncertain degree, but which are believed not to be species, the Professor proposes to use the sign +.

Dendrobium chrysodiscus××, *nov. hyb., Angl.; educ. ab eq. Trevor Lawrence.*

This lovely thing was raised from Dendrobium Findleyanum and D. Ainsworthii. Being a hybrid, having one of the parents a hybrid, I give it the sign ××. I have to thank for it Sir Trevor Lawrence, Bart., M.P., P.R.H.S., who would appear not only to have splendid successes in the production of fresh hybrids, but also to select only species of clear colours to get elegant and brilliant products. It is a well known experience that there are hybrids of very sordid colour, which are only good to fill the houses, and which might be carefully prevented from offending the eye of the visitors by never being allowed to develope the negative charms of their flowers. I had a good sketch of the bulb prepared by the assiduous grower, Mr. Bickerstaff, who informs me that the seedlings are five years old. The tallest bulb is more than a foot in length, and may be stated to be intermediate between that of Dendrobium Findleyanum and D. Ainsworthii. It has the yellowish hue and the swollen and constricted parts of the numerous joints of the unbranched stems. The flowers are broader than those which we see in the remarkable plant of the Rev. C. S. P. Parish. The chin is blunt. Sepals ligulate, blunt-acute, whitish, with purple apicular parts. The first two-flowered inflorescence had dark purple margins to the sepals, but a larger flower, obtained in March, had no such ornaments. Petals broad, white, purple at the apex. The lip is of the lightest sulphur-white with a velvetty white thickened cushion at the base, a large orange area around, purple lines radiate from the cushion, and the acute apex is purple too. The second flower was whiter. The white column has purple lines in front, which were broader and less numerous in the last flower. That flower had developed no more pollen at all. It was larger than those I obtained in February. The plants are stated to be five years old.

This Dendrobium chrysodiscus is a lovely thing, and its system of growth with purple stems is far more promising than that branched system of Dendrobium Findleyanum. It is as if Sir Trevor had cut its flowers and glued them on to a delicate stem of Dendrobium Wardianum.

I may add, that I have never seen such flowers of Dendrobium Findleyanum as those I had in 1880 from Sir Trevor Lawrence. Mr. Spiers had added a label, "the largest I have ever seen." I have a very fine water-colour sketch of a plant of Dendrobium Findleyanum, prepared by Mrs. E. Parish, kindly given me by the Rev. C. S. P. Parish. The flowers are as we see them in the species named. Those of Sir Trevor in 1880 are comparable to the flowers of Dendrobium Wardianum itself. I may state at once that Captain Vipan has raised a similar fine thing. *H. G. Rchb. f.*

Dendrobium melanodiscus××, *n. hyb., Angl.; educ. ab eq. Trevor Lawrence.*

This is the inverted cross of Dendrobium chrysodiscus××, the pollen parent being Dendrobium Ainsworthii×. It is stated to have similar stems, which would appear to afford the best mark of distinction from some of the old species. The flowers are not very different from those of the genuine Dendrobium Ainsworthii×, the original production of Dr. Ainsworth himself, which I received from Mr. Harry Veitch. There is, however, a rich marking of purple on the top of the sepals and petals, and a poorer one at the top of the lip. The column is light greenish-white, with dark purple lines on the front parallel to the longitudinal axis. Those of my sketches of Dendrobium Ainsworthii show such a dark, almost blackish-purple spot on the disc of the lip as this does. It is also due to Sir Trevor Lawrence, Bart., M.P., P.R.H.S. *H. G. Rchb. f.*

Narcissus Bulbocodium × Pseudo-Narcissus.

Mr. Barr has lately sent me this from the neighbourhood of Oporto, where it was gathered by Mr. A. W. Tait and himself. I have no doubt it is a hybrid between some member of the sections Corbularia and Ajax, but what form of each I cannot undertake to say at present. For garden purposes Mr. Barr wishes it to be called Mrs. A. W. Tait.

Leaf linear, at the flowering time (middle of March) 5 inches long, $\frac{1}{6}$ inch broad, slightly glaucescent, channelled down the face. Peduncle slender, terete, green, one-flowered. Spathe an inch long, tubular in the lower half. Pedicel as long as the spathe. Flower horizontal, milk-white, both segments and corona, $1\frac{1}{2}$ inch long, ovary included. Tube narrowly funnel-shaped, much tinged with green, $\frac{5}{8}$ inch long, $\frac{1}{6}$ inch diameter at the throat. Segments linear, ascending, rather shorter than the corona. Corona $\frac{5}{8}$ inch long, faintly crenulate, $\frac{1}{3}$ inch diameter at the erect throat, $\frac{1}{4}$ inch diameter at the base. Stamens inserted low down in the perianth-tube; filaments straight. Anthers only just protruded from the tube. Style reaching half-way up the corona.

It differs from both Bulbocodium and Pseudo-Narcissus by the less obconical perianth-tube. The Pseudo-Narcissus element in it is indicated by the straight comparatively short stamens and by the shape of the corona; the Bulbocodium element by the stature, narrow leaf, and ascending linear perianth-segments. It is a very interesting addition to our rapidly-increasing list of natural hybrids. *J. G. Baker.* [This form was shown at the Scientific Committee by Mr. Wolley-Dod (see p. 358), and was figured by us at fig. 78, p. 390.—Ed.]

MARIE LOUISE VIOLETS.

On visiting my friend, Mr. Bailey of Shardeloes, who has so successfully conducted the management of the gardens for nearly half a century, I was much struck with the remarkably fine condition of his Marie Louise Violets. From him I gathered that these subjects were an especial feature of interest with his employer, and hence I understood the reason of Mr. Bailey bringing his vast practical knowledge and enthusiasm to bear on the cultivation of this particular subject. In this he has so unmistakably succeeded, as the early lot at the present time (March 14) are simply beautiful with large magnificent sweet-scented flowers well developed, of a very dark hue, and the foliage also. These, in my opinion, are far ahead at the present time of the Parma Violets, which are so abundant in the shops and markets in London. Mr. Bailey's course of cultivation is almost identical with the ordinary practice, excepting that he plants his rooted runners, which are very small, on south borders. His first batch, the early ones,

occupy eight lights of the old-fashioned ordinary wooden frames, like beds that are made up for summer Cucumbers, in these are those he uses for the Violets. Of course additional soil is used if required to bring them up near the glass. The only artificial heat they get is applied by means of fermenting linings placed around the beds and frames, and they are likewise well secured from the effects of frost by coverings ample for the purpose. The succeeding lot—as many more lights—are now coming into flower very profusely. These plants are placed on an east border in the kitchen garden, and merely protected by means of a surrounding wall made of turfs placed one on the other, and lights placed on the top. In addition to these it is usual now to have a batch of them openly in the kitchen garden for a late supply. Other kinds of Violets also come in for every care and attention. The Violets at this place form an interesting feature, and plainly indicate what can be achieved by means of skilful cultivation. *G. T. Miles. Wycombe Abbey.*

NURSERY NOTES.

MESSRS. SMITH & CO., OF WORCESTER.

Taking a tram-car at Worcester you cross the river, enter the suburb of St. John's, and in ten minutes may be set down at the gates of St. John's Nursery, where, in 1804—the year of Austerlitz and of the death of William Pitt and Charles James Fox, with eleven years of Napoleon and his wars still in prospect (a bad outlook for a trader) the father of the present head of the firm made a beginning on four acres of ground. To this small plot ten acres were added, and afterwards more and more, bringing up the size of the nursery to its present area of 200 acres. A former residence of one of the principals lies on the left on entering—a substantial house, containing spacious offices for a number of clerks, with a fruit-room containing, when we called, a collection of the best Apples and Pears, including, of course, that well known showy Apple and free cropper, Worcester Pearmain.

We shall notice things as we happened to overtake them, beginning with a weeping Beech, which Thomas Andrew Knight discovered here in a bed of seedlings—a novelty which at his suggestion was carefully preserved, and which became in due time the parent of a large family. Pitmaston House, which stands hard by the nursery, supplies another bit of history as the former residence of T. A. Knight's friend, Williams, and as having lent its name to several fruits, especially an Apple and a Nectarine, which originated here.

One of the oldest and largest Weeping Ashes that we have ever done obeisance to as a thing of beauty worthy of reverence caught our eye in the grounds immediately in front of the offices. A tree of this kind is far above the common order of created things of its kind, and the ancients for that reason would have worshipped it. It stands here secure from sale, being far too big for removal except as an engineering feat not likely to be attempted. The shrub beneath it is Cephalotaxus drupacea. Few things can stand such exhaustion of the soil's nutriment and moisture as the shallow rooting Ash inflicts, and we have here ocular demonstration, besides the assurance of experts, that this is one of the best of evergreens for shady places. It does not merely exist under the close shade of the great Ash and of the adjacent timber of a thick shrubbery, but it flourishes and looks as green and contented as if the position just suited it. It is said here to be the best shrub for shades—better than Holly, Laurel, Privet, or Mahonia.

The wide walk through the grounds, starting from the main entrance, is a mile and a quarter long, passing first through groups of greenhouses, and being dressed throughout with a broad border of evergreens, such as Hollies and Weeping Hollies, and the usual varied assortment of a nursery, including one shrub, which is abundant here, and not the less worthy to be named that it is common, Ivy (in its "tree" form). About forty species of English and foreign Ivies are named in Messrs. Smith's catalogue of trees and shrubs, and when seen growing together they form a very interesting as well as varied collection.

There are 32 miles of walks in the nursery, so that a day and a half would be required to walk through them, without stopping, at the rate of three miles an hour and for seven hours a day. We preferred the plan of stopping often and visiting only the points of greatest interest. One of these is the spot where a group of buildings includes, with stables and a carpenter's shop, a long packing-shed. In November this part of the business was in full work. Three hundred men are employed altogether in the nursery, and from 130 to 150 of them are constantly engaged in the season in executing orders—that is, in lifting and packing. The quantity of string here deftly wound in securing the packages amounts to about 1½ ton per annum. The straw used for the same purpose is in proportion, and boxes and crates for the things that require them are purchased by the thousand.

Resuming our walk and talk we reached some plantations of Plums, where we were told of the sorts in fashion that one-half the total quantity raised here consists of Victorias, one-half the number of Apples of the class to which Lord Suffield belongs; early sorts for cooking are of that early bearing kind, and one-half of the Vines are Black Hamburghs. The favourite Gooseberry is Whinham's Industry—40,000 sold last year. Other statistics worth quoting are that a propagating house 20 feet long seemed to the originator of the business something wonderful and too extravagant, whereas there are now many houses of 220 feet, and one of 365 feet. The number of pots of Ferns in one of the houses is 20,000. In a large house full of fruit trees in pots a Vine cordon, carried round just below the "plate" on which the roof rests, is 200 feet long. As such a cordon does not much obstruct the light it is well adapted to the production of Grapes in houses devoted to flowers. Other figures we noted down are that 300,000 grafts of plants under glass are worked every year. There are 80,000 Tea Roses in pots. The different sections of Clematis, including from seventy to eighty species and varieties, are represented by 80,000 specimens, one of which, the latest novelty, was raised here, and is rightly named the Beauty of Worcester. It produces flowers 5 inches in diameter, with six or eight handsome petals of a bluish-violet shade, and it owns the peculiarity of producing both single and double flowers on the same plant, and is claimed by its raisers as an abundant and continuous bloomer, vigorous in habit, and well suited for bedding.

There are, of course, houses for Camellias, houses for Heaths, for Chrysanthemums, foliage and stove plants, and they are all in capital order. The pit ground contains 4 acres, with 2½ acres of glass, and great as the space may be here and elsewhere, it has to be very carefully economised. Virgil speaks of "bursting barns" after a good harvest; here the harvests seem unfailing, and the houses are kept cramful in spite of continual sales.

During our ramble, which occurred later in autumn than we could have wished, we observed nothing more remarkable in appearance out-of-doors than a bed of silver-leaved Poplars, with late hanging leaves and bark as white as snow or whitewash. Other trees of striking foliage which we saw in their undress are the Fern-leaved Limes and Birches, and the Scarlet Oaks, with leaves a foot long, and as good for autumn decoration as the Virginian Creeper itself.

There are about twenty-four Elms here, including the handsome silver variegated variety; the graceful Japanese species Ulmus, Kaki; the Weeping Camperdown; and, if another of note may be named, U. plumosa, whose shoots are arranged in a plume-like form—a tree one could not pass without pausing to admire. It is time to mention the irrepressible Brambles, which seem determined to win favour by their fruit, as they have always done for the colours and markings of their leaves. The Wilson Junior Bramble has delicious flavour, and is productive, with large jet-black berries of characteristic flavour, and melting. It is quite hardy; the berries are as large as Mulberries. It is a sport from Williams' Early. As a large number of the fruiting Brambles have been sent out from this nursery to the trade and the public, their value cannot fail to be thoroughly well tested at an early date.

We are compelled to pass over for the present several departments, including the herbaceous and alpine plants, which fill with their names a catalogue of no less than sixty-four pages, each department having a catalogue to itself, as for instance Rose list, plant list, bedding plants, forest trees, Conifers, seeds, bulbs, and several others, all well arranged and reliable in regard to cultural hints and other matters.

Camellias at the Royal Nursery, Slough.

The house of these at Slough, containing as it does many fine specimens in pots in the best condition, is now to be seen to excellent advantage. Prominent are the white varieties, alba plena and fimbriata, two fine old favourites that will not be beaten for years to come. Cup of Beauty, Lady Hume's Blush, L'Avenir, pink, very fine; Reine des Fleurs, Maria Theresa, Isabelle de Boiard, Imbricata, and others, are laden with fine blooms. The Camellia-house is also an aviary, and the cheerful chirp of canaries and other song birds impart a pleasing foretaste of the springtime that appears so slow to come.

PLANTS AND THEIR CULTURE.

HARDWOODED GREENHOUSE PLANTS.

The commonly designated New Holland and Cape plants are not so generally cultivated as formerly, and it is a rare treat to meet with a well grown collection in a private garden. This, doubtless, in a measure arises from the fact that there is at the present time a greater demand than formerly, and a still growing one, for plants for room decoration and for cutting from, and the glass space once devoted to the cultivation of hardwooded greenhouse plants has consequently to be utilised for subjects more easily grown and which afford quicker returns. Watering—an important matter in the cultivation of these plants—will now require great attention, and the plants should be closely examined; those which are found to be dry should be given enough rain-water (if it can be had) to wet the soil through, and be left until again in need. No class of plants are more susceptible of injury by haphazard watering than are these, and frequent surface wettings, instead of a thorough soaking when wanted, means death to them. Many are now nearing their blossoming period, and the ventilating of the structures containing them will demand care so that no check occurs from the injudicious admission of cold draughts, for although a stuffy atmosphere is by all means to be avoided, these plants are also sensitive to chills resulting from currents of cold air, and their blossoms will not remain in good condition for so long a time as they otherwise would do if subjected to them. The flowers will also last longer if the plants are placed out of the reach of direct sunshine, heavy shading would, however, be hurtful.

The potting of young plants that require increased root-space should no longer be delayed; efficient drainage should be ensured by layers of clean crocks, the upper portion being finely broken and covered to keep this part clean with some of the most rough and fibry of the compost, which for Boronias, Correas, Eriostemons, Dracophyllums, Sollyas, Eutaxias, Genetyllis, Phœnocomas, and Leschenaultias, should be formed of peat of the best quality finely broken up and freely mixed with silver-sand, and in potting should be made firm by ramming. Pimeleas and Chorozemas grow most freely in a mixture of peat

loam, and sand, while Acacias and Desfontaineas succeed without peat. Care should be taken that the plants are moist at their roots when turned out of their pots, and after the operation is completed a light position, free from draught, where they can be placed upon a damp surface of spar clear of worms, should be found for them. *Thomas Coomber, Hendre Gardens, Monmouth.*

PRUNUS PISSARDI.

In the year 1881 the *Revue Horticole* first made known the existence of this very beautiful purple-leaved Plum. It was introduced into France by M. Pissard, the gardener to the Shah of Persia, and soon made its way in this country on account of the beauty of its rich claret-coloured foliage (fig. 80). As time went on it was found that its fruits ,though not of first-rate quality, were by no means to be despised, while only quite recently Messrs. Paul & Son, of Cheshunt, have shown us that the plant has no mean qualifications as a plant for forcing purposes in early spring, as may also be inferred from our figure. A full description of the plant is given in the *Revue Horticole*, 1881, p. 191, by M. Carrière. The plant has an assured future.

ROSES.

SNOW AND ROSES.

The snow has been a good protector of these and many another not perfectly hardy subject this winter. With the great amount of frost our losses this winter would be far heavier than they are had snow been absent from the earth. Here we trust too much to what the weather may bring us in the way of protection for Roses and other things, and if we get this we rejoice overmuch, and bewail our losses unceasingly if hard frost come without the snow. We should act more in accordance with the dictates of common sense if we every year protected the Roses in our gardens, and not only the dwarf plants, but the standards. Neither the one nor the other can be claimed as objects of beauty, even by the most enthusiastic rosarian ; therefore let us for the future cover them up in November, before hard frosts set in, and keep them under cover till April, except in those winters that turn out exceptionally and unmistakably mild. We need not bring into the Rose garden any extraneous littery material unless we choose, but we can use the soil of the Rose-beds to mould over the plants to the depth of a foot, each plant having its own pyramid of soil, and the shoots may be cut back to that height or left, according to fancy. Standards may be bent down and kept in position by a strong peg, so that the head lies in a shallow excavation made with the spade, and be covered over with the soil taken out of the hole. Another way of protecting is not to dig a hole, but to peg down and cover with Fern or Spruce Fir branches. Even this method of doing it is more sightly than the usually recommended one of stuffing the still erect head with Fern or hay, which look like so many nests of a gigantic hedge-sparrow scattered about the garden, and which are strongly acted on by the wind, thereby making a funnel-shaped hole at the base of the stem, which in heavy soil becomes a receptacle for holding water to the detriment of the Rose-stock. *Protection.*

ARD-RIGH DAFFODIL.

In the time of Daffodils we are glad to be able, thanks to a niece of Mr. Hartland, of Cork, to present to our readers an illustration of one of the most striking and early of the Daffodils, being earlier even than pallidus præcox. It is so beautiful, forces so well, and is so useful a variety, that we hope to be excused from the attempt to give a detailed description of a variety whose characteristics are better shown by the accompanying illustration (fig. 81, p. 417) than by any form of words. We do not suppose that the most ardent Unionist will fail in loyalty to this particular Irish king.

A GRAND OLD GARDENER.

(Concluded from p. 380.)

Amaryllids.—Hippeastrums are grown in Mr. Kelway's nursery to a great extent, and with remarkable success. Of course most growers know that there is only one true Amaryllis, and that is A. Belladonna, which has a solid stem, whereas the Hippeastrums and most Amaryllids have tubular scapes, besides being different in their seeds. Having seeded Belladonna blanda I think I remember that, though it very closely resembles Belladonna, it is really a Crinum, bearing a fleshy, Potato-like excrescence it calls a seed. A. Belladonna comes from the Cape, and the Hippeastrums from America and the West Indies. While here I found out the reason why A. Belladonna so seldom does well in English gardens. Here, in this nursery, are two sorts in quantity. One is the usual kind grown, which is injured by the frost and much smaller than the totally uninjured large variety called major. A word is enough to the wise.

If Hippeastrums come from tropical America and the West Indies why do gardeners dry them off? When do they get their drying off there? Who originated this fatal custom? Do they dry off at Veitch's nursery at Chelsea, or at Weston Birt, or at Hildenley, in Sir Charles Strickland's wonderful collection? Here they are grown in a remarkable way They are grown in deep soil, in unheated frames; any cottager could grow them with a little glass to keep out wind and weather, and mats to keep out the cold in winter. Most of the winter thousands and thousands here passed in total darkness ; their leaf-growth was made, they wanted no light. This method will revolutionise the usual mode of growing, and the sale of Hippeastrums. Any one can grow them now. Many of Souchet's are quite hardy, and at Calke Abbey, in Derbyshire, there is an open border, 200 feet long, filled with Ackermani pulcherrima, only a few brackens being put over them in winter. I am trying many rare Amaryllids in a greenhouse border at Sunnyhill, Shirehampton, unprotected. Curious Ismenes flowered in the open last summer, and the blue Hippeastrum procerum, the Brazilian species, is there ; Crinum Powelli, loveliest of all Amaryllids, is as hardy as a Potato, and would grow in a ploughed field or kitchen garden, unprotected by any wall. Why, then, are the Hippeastrums dried off? They love to let their roots run on the surface. Is it to get them more manageable that most people withhold water? The result is that they flower a little earlier, but without the luscious leaf-growth which makes moister-grown plants far prettier objects. I have not seen this glorious collection in bloom, but if it comes anywhere near Veitch's it will do. I expect here again the introduction of such kinds as Solandriflorum, equestre album, or rutilans would impart novelty. Of other Amaryllids out-of-doors a large batch of Zephyranthes candida show how hardy many of the tribe are. Here due credit must be given to Drummond, the able propagator in these nurseries. There are few things that cannot be increased under his hands.

Fig. 80.—Prunus Pissardi, the purple-leaved plum: flowers pale rose colour.

If he does not dominate the nursery, he is the Dominy of cultivation.

In another journal I have lately given an account of the 2000 named herbaceous Pæonies (mostly the Chinese varieties, chinensis, syn. edulis, syn. albiflora), and of the 200 Tree Pæonies (moutan, syn. arborea), with the peculiar methods of propagation so successfully practiced by Mr. Drummond. If there are now in the nursery 20 acres devoted to Gladioli, I feel sure that sooner or later there will be more than twenty devoted to Pæonies. Literally, both kinds are being raised here by tens of thousands.

Of Christmas Roses good varieties will be found here eventually, though the old gentleman only acknowledges two sorts of niger—itself and altifolius, like the unmusical man who only knew two tunes; one was "God Save the Queen," and the other was not. Immense quantities of seed is sown about an inch deep, with a curious method of keeping it free from weeds. The soil is covered an inch deep with chaff of straw cut fine. The seedlings come up the second year as a rule, and the chaff is removed, and the seedlings are safe. I have always associated and practised with Hellebores and Hepaticas the following method:—Get your seed from the plant before it is quite ripe, cover it with fine soil and a piece of slate. In November look under the slate. It will have come up like Mustard and Cress. Then you must protect it from slugs with ashes.

Plants also grown here are Dahlias, and the old gentleman groans to think what our taste has come to that we like things like picta formosissima, Cactus, or single Dahlias, more than the old Turnip and Parsnip productions of the florist. However, he has the best new varieties, and James Kelway, a striped one, should be in every garden. In Pyrethrums an equal surprise was in store for him, for though the double Pyrethrums raised by the firm are most beautiful a lot of singles sown by Mr. Kelway, jun., have become famous all over England.

Could any one raise a true crimson Cineraria what a fortune it would be. The objectionable colour—it is the only word for that vulgar violet—overrides

Fig. 81.—Ard-righ (Irish king) daffodil: bright golden-yellow. (see p. 416.)

all those fine spring plants: some of white and violet here are very large, 2½ inches across the bloom, measured without stretching, as a gentleman would, or 3 inches as a tailor would. The leaves are a foot across each way; they are grown in soil with heat underneath—a method practised to a great extent here. When too thick in spring the plants are thinned out. In a few days this house of Cinerarias will be a marvellous sight, and to my eyes a terrible spectacle. Fancy, if they were all of the colour of Melton Pyrethrum, what a noble sight!

The labels used are simply long pieces of flat zinc with chemical writing-ink, and these would be improved by bending up the sides, so that they could be easily pushed into the ground. Watering over the Gladiolus beds is made easier by pipes laid all over the ground, but it has to be completed with water-cans.

Delphiniums and Gaillardias are here in vogue, and the best English hybrids have come from here. There is no time when there is not some gigantic bed of flowers in bloom, and these plants excite admiration when the Pæonies are over. Iris reticulata is going to be the great thing in a few days. There must be thousands and thousands just coming into bloom. Herbaceous plants are now being pulled in pieces, and potted and placed in the frames here-before-mentioned, and cuttings of Roses, 5 inches long, are being dug in by the piece.

So now I have told you all about the Kelway nursery. All this is the work of one man's lifetime. Is it not a splendid result? Where will it end? This old man, beginning in middle life to hybridise and select Gladioli, has sent them all over the world, and given delight to millions of people. He is still in vigour, and I hope will live to give us many more glorious things. It is not too late for him to paint with his magical wand the dark blotches of purpureo-auratus on his most delicate varieties, or to put the white spot of Saundersi on his Swords of Fire. My best hope is, that his work, so nobly begun, shall continue to increase and enlarge his fame. He pretends all was done for money. We believe that as much as we like, but any way we are bound to return thanks to James Kelway. *Frank Miles, Shirehampton, Bristol.*

P.S.—I must add a postcript, because since writing this letter much important information has turned up. In answer to questions wisely suggested by Mr. Burbidge, Mr. Kelway has raked out of his infallible memory the following facts.

He read at Manchester Museum a tract of Dean Herbert on hybrid vegetables in which was an account of his crossing the Gladiolus. The extracts he made have got stored away, and he will be able to find them: some one may meantime search and extract the passages relative to Gladioli.

Now we have got completely at the origin of Gladiolus gandavensis, and Dean Herbert must have new laurels added to his brow.

In his *Amaryllidaceæ*, published in 1837, he says:—"He was not certain he had succeeded in crossing the varieties he had with natalensis (syn. psittacina)." Probably among his seedlings was gandavensis, which he had not then seen in bloom.

What does he do with them? Here is the whole story. In August, 1875, Mr. Kelway met at the Plymouth show the Rev. G. W. Manning, rector of Little Petherick, and of St. Peter Minor, St. Issy, a first-rate gardener, and enthusiast on the Gladioli, and was told by him that he had grown gandavensis hybrids over fifteen years; that gandavensis was raised by Dean Herbert, who grew it for two years, and failed to bloom it. He then sent it to Van Houtte, who, having tried to flower it at Ghent, sent it to the Cape, where it flowered. It was sent back to this country by Van Houtte, who put it into commerce and named the seedling gandavensis, from the Latin for Ghent.

In 1874 Mr. Kelway visited M. Souchet at Fontainebleau, and he told him he had commenced fertilising the Gladioli, cardinalis, blandus, and other varieties, in 1834; with pollen from the hybrids he thus obtained he impregnated G. gandavensis, and produced seedlings which flowered in 1845. Mr. Kelway cannot speak French nor M. Souchet English, so they wrote down questions to each other, and these bits of paper are luckily preserved here. Mr. Kelway proceeded to say that the first put in commerce of his production was named M. Blouet, which flowered in 1847. So this clearly proves the history of gandavensis, and shows that to Dean Herbert we owe an unacknowledged debt. I lately proved to my own satisfaction, if to no one else's, that Dean Herbert raised the superb Daffodil, Sir Watkin.

Gladiolus cardinalis was introduced in 1789, blandus in 1774, and natalensis (psittacinus) in 1830, so not much time was lost by Herbert. Now the only thing we do not know for certain is what was the one parent of gandavensis, psittacinus being the other. I presume it was not a species, but one of his own hybrids.

Mr. Kelway has always been averse from using the pollen of such species as G. communis, by which, to my thinking, good and hardy varieties might be raised. However, the old gentleman always thinks this would be a degradation, so it remains for other people to raise hybrids from G. communis, which might be easier grown by humbler minds. Mr. Kelway is strongly of opinion that the Lemoinei strain has nothing to do with G. gandavensis, but is G. purpureo-auratus crossed with G. cardinalis or some other species. This we know, having not succeeded in raising seedlings from gandavensis varieties crossed with purpureo-auratus, though he was the first to make the effort. I think Dr. Hogg once showed me at the Royal Horticultural a lot of Gladioli half gandavensis and half either communis or byzantinus. *F. M.*

THE ORCHID HOUSES.

GENERAL DIRECTIONS.

Thunias, if starting to grow, should be shaken out and repotted, the pots should be well drained by placing a layer of moss above the crocks; the plants grow well in a compost of two parts loam and one of peat with an addition of a few half-rotten Oak leaves and coarse sand; do not overfill the pots, as Thunias require plenty of water when the pot is filled with roots: at that period a little weak manure water, given once a week, will help them on quickly. In potting strong bulbs should be selected and placed on the surface about 3 inches apart, each one being made secure to a stake; water should not be allowed to lodge in it. This Orchid likes as much sunlight and heat as do many of the Dendrobiums.

Lælia anceps is starting to grow and must receive attention; if potting or top-dressing is necessary, a compost of about equal parts of peat-fibre and sphagnum will be suitable. In repotting, the pots should be almost filled with new crocks and the plants potted in the same way as Cattleyas are. I find this Lælia grows best on the east side of the Cattleya-house. L. a. Dawsoni and other white varieties flower more freely when suspended from the roof. I fancy the new white varieties require a more liberal treatment as regards heat, moisture, and air, in order to produce flowering bulbs.

Deciduous Calanthes are starting their new growths now, and should be repotted. No doubt many gardeners have their own favourite compost for these plants, and put great value on it; but I think success greatly depends upon the house and position they are in when growing. I have potted Calanthes in different ways, and grown them all together, when their appearance did not show any difference. The following mixture will be sufficient for them:—Two parts loam and one of fine peat, and add to this a little coarse sand and leaf-mould.

Temperature.

The following temperatures should be maintained at this period of the year:—Cool Odontoglossum-house, 50°—60° F.; Cattleya-house, 60°—70° F.; East Indian-house, 65°—75° F. The two latter will not suffer any harm if allowed to rise 10° with sun-heat provided that ventilation be given. *C. Woolford, Downside, Leatherhead.*

THE GLADIOLUS.

Planting time is here, but hitherto the weather has not permitted of planting, and in this connection I was interested in reading the remarks by Mr. Frank Miles last week. Mr. Kelway's system of planting cannot be done so carefully as we are able to do it on a small scale in our gardens. He has always shut his eyes and ears to the evidence of other growers; but this will not dispose of the fact that disease and degeneration exist. Why should Mr. Kelway complain of the fuss made about disease, which we are first told does not exist, and subsequently that there will be none if we do as Mr. Kelway does? I have written about the disease and degeneration of the highly-bred garden varieties of G. gandavensis, and every word of it has been written as the result of my own experience. Further, we are told that "Turnips and Cabbages are equally affected by bad seasons, and the Gladiolus is as manageable as these;" and yet in the face of this statement we are informed that old garden soil is to be avoided if it fails, and new loam or turf to be brought in by the cartload. Why all this trouble for a plant as easily grown as Cabbages? I may say that I have carted in new soil, and treated the bulbs exactly as stated at p. 380, and yet in our garden near London disease and degeneration cannot be avoided. It is now seventeen years since I received from the Floral Committee of the Royal Horticultural Society a First-class Certificate for a seedling Gladiolus. It was named John Standish, and is figured in the *Florist and Pomologist* for 1872, p. 169. Mr. Standish had the stock of it, but it degenerated with him, and was never sent out. Subsequently to this I had fourteen First-class Certificates for new varieties, but could make nothing of them, and the whole stock has been destroyed. I could always keep up a good stock of strong flowering plants by raising seedlings, and those who have any difficulty in growing these handsome autumn-flowering plants need only purchase a few of the very best kinds, and save seeds from them. I have, in the pages of the *Gardeners' Chronicle*, recommended this, and also remarked on the fund of pleasurable excitement there is in watching the flowering of them. A very large proportion of the seedlings will be as good, and a few superior to the parents; for, be it understood, I advocate the crossing of well chosen parents: without this the chances of improved varieties would be rather problematical.

One remark made by Mr. Miles should not pass unnoticed. He says:—"Mr. Kelway is that almost extinct personage—a florist." Why? Because he will not cross his fine garden varieties of G. gandavensis with namaquensis, cruentus, or Saundersii. Now, it may be very amusing to write about so-called florists as "extinct personages," but what I want to point out in this connection is this—that in the matter of seedling raising, the almost extinct personage is right from a popular point of view; even Mr. Miles makes this admission. He states that Max Leichtlin's seedlings from Saundersii were rejected by the English growers, and are now in America. Mr. Kelway and others, who grow plants for sale, know what their customers want, and will not purchase stocks of bulbs that they cannot sell. It may be that the taste in America is different to what it is here. I have seen and admired Mr. Kelway's exhibitions of the Gladiolus in London for twenty years. Many of the varieties are new seedlings; every year some advance has been made, and those varieties which Mr. Kelway selects as the best are usually selected as the best by the Floral Committee; and not only so, but if an appeal be made from Mr. Kelway and the Floral Committee to the general public, nine out of every ten of those who love to grow these flowers in their own garden will be of the same opinion. The artists and the minority may find quite as much enjoyment from the flowers

they believe to be the best; but I can assure Mr. Miles that the "florists," so called, are not anything like extinct personages. References to rhomboids, Catherine-wheels, pops and dobs, spots and blobs, may be amusing to some people, but I cannot see the fun. We have now in our garden many seedling Amaryllises, and a much larger number may be seen in Messrs. Veitch's nursery at Chelsea. How is it, may I inquire, that Messrs. Veitch select their seedlings on the same lines as Mr. Kelway, and, what is more astonishing, the Floral Committee and the general public approve the choice? Mr. Miles is evidently not aware that the Orchid amateurs value their Odontoglossums the more the nearer they approach the standard of the florists. The narrow petalled, wavy, crisped-edged varieties of O. crispum from the Pacho district are avoided, while the broad petalled, round, massive flowers from Fusagasugâ are valued highly, and so much the more if the petals are stout in substance, and arranged to form a well-rounded flower, and if there are numerous "spots" on the petals so much the more is the flower valued. It does no harm for artists to rave about this; but it is an error to say that the florists' principles are extinct: as a matter of fact they are progressing. *J. Douglas.*

Orchid Notes and Gleanings.

ORCHIDS AT MESSRS. BACKHOUSE'S, YORK NURSERIES.

There is a very fine display of Cattleya Trianæ in the large Cattleya-house at the above nurseries just now. The best were C. T. insigne, aurora, and Empress, though all were good. This first-named variety was a very fine specimen. Aurora, as its name indicates, was noticeable for its deep orange throat, and Empress for the pure white frilled margin round a splendid dark crimson lip. One or two plants were very similar to C. a. Backhousiana, but scarcely so good, the purplish-crimson markings on the petals being not so feathery as in the typical variety. It may be necessary to say that no shading is used at all in the summer, and ventilation is given whenever feasible. *H. J. C.*

Hybrid Cypripedium.

The last number of the *Moniteur d'Horticulture* contains a coloured plate of a hybrid, raised by M. Bauer, the Curator of the Municipal Gardens of the City of Paris (*fleuriste*), between C. venustum and C. Veitchii. The upper sepal is broadly ovate, white, with green stripes, the lateral petals narrow, oblong, dilated at the extremities, green at the base, pink at the tips with a few purplish blotches and with occasional tufts of purplish bristles at the upper margin near the base. The lip is shining, pinkish, with a network of green veins. No name is given to the plant.

Ponthieva maculata.

This striking and handsome terrestrial Orchid is just now one of the objects of interest in the Kew collection. The leaves have a certain resemblance to those of Arnica montana, and the flowers, which are nearly an inch across, are borne in compact erect spikes about a foot high. They have this peculiarity, that the lip is uppermost and very small, while the petals, which are pendent from the top of the column, have their straight inner edges applied to each other, or even overlapping, so as to closely simulate a lip. The lateral sepals, which are uppermost, are white, and beautifully marked with numerous dark green spots, and in the centre of each spot is situated a perfectly transparent and glossy club-shaped hair, which is scarcely perceptible without the aid of a pocket lens. The median sepal is light brown with darker longitudinal streaks, and the curious clawed and semi-ovate petals are bright buff, with three green nerves on the basal half of each. It is a native of Venezuela and of the United States of Columbia, growing at an altitude of 6000—7000 feet in the former, and 7500 feet in the latter locality, and is one of the somewhat limited class of terrestrial Orchids which succeed well under cultivation.

Orchids at Pickering Lodge.

In Mr. Hardy's wonderful collection at Pickering Lodge there is a magnificent plant of Cattleya Trianæ in bloom; it has sixteen spikes, bearing fifty-three large deep flowers of a superb form. There are also in bloom several good forms of C. Percivaliana; also a nice piece of the beautiful C. Backhousiana, a striking feature in which is the feather-like blotch in each petal. There is a treat in store to visitors when the host of Cattleyas come into bloom at a later date—indeed, a visit here cannot be ill-timed, for there are always some good things in flower. In addition to the above-named plants there are at present large numbers of Phalænopsis, and among them P. Stuartiana, in robust health, and loaded with bloom. Cœlogynes and Dendrobiums are also well represented, and a good sprinkling of Odontoglossums. One house is nearly filled with O. vexillarium, in splendid health and vigour, such as is very rarely seen. These, when in flower, will be a fine display. Large quantities of Dendrobium Wardianum, D. Devonianum, &c., at rest, also promise by their condition to be very gay. Indeed, everything here is thoroughly well done, and bears testimony to Mr. Hill's skill as a gardener. *T. L.*

Fernside, Bickley, Kent.

In Mr. Pollett's select collection of Orchids there were to be seen recently some choice varieties of Lælia anceps now approaching the end of their season. The ordinary form, with the varieties Williamsii and Stella, yet remain. When done flowering the plants are placed on a shelf near the glass in the cool-house, well exposed to the light, and kept rather dry at the roots. The varieties of Cattleya Percivaliana are in full flower. Mr. Pollett possesses two remarkably fine varieties of this species in his small group of plants, one has well-formed flowers, with broad rosy-purple sepals and petals; the lip 1½ inch broad, of very dark maroon-crimson, with deep yellow throat; the other form has the lip quite as dark, with a transverse line of gold at the base of it. The flowers are 5¾ inches by 5 inches. Cattleya Trianæ is just coming into flower, but the best varieties are not yet fully out. Lycaste Skinneri has made wonderful progress; the plants are healthy, vigorous, and well flowered. One plant was producing no less than twelve flowers from one bulb. The pure white variety has five flowers to a bulb. Another has two fully developed flowers on one spike. The system of culture pursued by Mr. Pollett's gardener is to pot the plants in leaf-mould, and the potting stuff is kept lower than the rim. When visiting Mr. Borwick's collection of Orchids at Higham Hill, I found the Lycastes potted in the same way, in the same material (leaf-mould), and doing equally well. Some of the best Orchid growers have not been quite so successful in growing L. Skinneri, so that those who have not tried the system of potting in leaf-mould should do so. I used leaf-mould and peat in equal parts this year, and the plants grew and flowered better than usual.

Cypripedium calurum is perhaps the darkest coloured of the C. Sedeni group. It was flowering well in the Cattleya-house with C. Sedeni candidulum. This last is a lovely hybrid from the Veitchian establishment, the result of crossing the white form of C. Schlimii with C. longifolium; the sepals and petals white, with just the faintest suffusion of rose; the lip reddish-purple. Mr. Pollett also grows these with a very choice collection of Orchids in the warmest house, where they are doing very well. There are good plants of such choice Cypripediums as C. Morganæ, C. Schrœderæ, C. Arthurianum, C. Sanderianum, C. Leeanum superbum, C. œnanthum superbum, C. Spicerianum, &c.

The cool-house contained some very choice specimens in flower, and many others throwing up their spikes. Odontoglossums are Mr. Pollett's favourites, To begin with the smallest, O. blandum: of this there is a nice plant, with two charming spikes—a fine variety. O. pardinum had a spike of its rich golden flowers; O. crispum Stevensi is also in flower—not the original form, but one of the same type; it opens with a yellow ground at first, changing to whitish. O. Ruckerianum had two spikes from one bulb, with thirty-three flowers on the two. There is another form of O. Ruckerianum named insigne, also very beautiful. O. Wilckeanum, a supposed natural hybrid between O. crispum and O. luteo-purpureum, had no less than thirty-eight flower-buds about to open on a branched spike. The vigour of these Odontoglossums has been well maintained during the past season, their healthy, vigorous condition doing their cultivator considerable credit. *J. D.*

The Kitchen Garden.

SOWING THE MAIN CROP OF CELERY.

The principal sowing of this we prefer to make on a spent hotbed, about the end of March or beginning of April, in light rich soil; the seed should be thinly sown and covered, and the frame kept moist and shaded until germination takes place. After-treatment should be so regulated as to rear the young plants strong and sturdy, thinning out surplus and weakly ones, and pricking out the most forward when large enough into other frames; throughout, anything in the way of a check should be carefully guarded against, and attacks of green aphis, to which the plants in a young state are subject, should be kept in check by applications of weak tobacco-water. Some rotten manure should be prepared in readiness for planting-out time, soot and salt being added at the rate of one bushel of each to the ton, and the whole well mixed and incorporated together by being occasionally turned over. For general purposes we find nothing better than Sandringham Dwarf White and Leicester Red.

Broccoli, Borecole, &c.

From the middle to the end of the month the main crops of these should be sown on prepared borders outside, and afterwards made secure from birds by being hooped over and netted; dustings of fine lime, wood-ashes, or soot should be given occasionally from the time the young plants make their appearance onwards, in order that fly may be kept in check, and also to act as a stimulant. Successional sowings, to meet requirements must also be made from time to time, and under similar conditions, of Radishes, Lettuce, small salad, and Turnips.

Mushroom-beds.

The present time is a good one to collect material for making up beds to produce a supply during the hottest of the summer months; a cool shed or underground cellar is well adapted for this purpose. In making up the beds it is advisable to construct them deeper than in an ordinary way, and also after spawning to well cover them, so as to retain the heat as long as possible, and thus ensure the spawn running freely.

Hotbeds

containing young Carrots, Radishes, &c., should be carefully attended to in the way of watering and airing, sprinkling overhead with tepid water on bright afternoons, and closing early. Potatos, on the other hand, should be kept comparatively dry, and the frames closed early with sun-heat. Water must be very sparingly given until tubers have formed and are swelling, after which one or two copious waterings can be given in the early part of the day with advantage. *John Austen, Witley Court.*

Linnean Society.—On Thursday, April 7, at 8 p.m., the following papers will be read:—1. "The Gentians: Notes and Queries," by Professor Huxley; 2. "Gephyreans of Mergui Achipelago," by Professor E. Selenka; 3. "British Heterœcious Uredines," by C. B. Plowright,

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APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

WEDNESDAY, Mar. 30—Society of Arts, at 8 P.M.

SHOWS.

WEDNESDAY, Mar. 30 — Glasgow and West of Scotland Spring Show.

THURSDAY, Mar. 31 — Paisley Horticultural Spring Show (two days).

SALES.

TUESDAY, Mar. 29 — 16,000 Liliums from Japan, 10,000 Pearl Tuberoses, Araucarias, &c., at Stevens' Rooms. 400 lots of Orchids in Flower, at Protheroe & Morris' Rooms. Roses, Carnations, Picotees, &c., at the City Auction Rooms, by Protheroe & Morris.

WEDNESDAY, Mar. 30 — Plants from Ghent, Roses, Fruit Trees, Shrubs, Border Plants, &c., at Stevens' Rooms. Lilium auratum, Freesias, Roses, Bulbs, and Plants, at Protheroe & Morris' Rooms.

THURSDAY, Mar. 31 — Importations of Orchids from Mr. F. Sander, at Stevens' Rooms. Clearance of Nursery Stock at Laing's Nursery, Teddington, by Protheroe & Morris.

FRIDAY, Apr. 1 — Imported and Established Orchids, at Protheroe & Morris' Rooms.

SATURDAY, Apr. 2 — Plants from Ghent, and Roses, Fruit Trees, Shrubs, Border Plants, &c., at Stevens' Rooms. Bulbs, Roses, and other Plants, at Protheroe & Morris' Rooms.

Gardeners' Orphan Fund.

Letters pour in from various correspondents with reference to this proposal. Our correspondents will readily understand that it is from no want of sympathy with the causes they advocate, and from no lack of courtesy to themselves, that we do not insert their communications. The simple reason is that we have not room to do so. The proposals hitherto made resolve themselves into three:—

1. The establishment of a fund for the benefit of the orphan children of gardeners.
2. A benefit society for gardeners, or for gardeners out of employ.
3. A contribution towards the funds of the Royal Horticultural Society.

Of these proposals (setting aside mere differences of detail) the Orphan Fund is the one in most favour with the majority of our correspondents, and Mr. Penny himself sends us a list of nearly a hundred supporters of his scheme, comprising many of the best known names in horticulture. A good many are in favour of a benefit society in some form or another. The third proposal finds next to no supporters. The meeting held on Tuesday at the Royal Horticultural Society was unmistakably—indeed, we believe, quite unanimously—in favour of the foundation of a fund for the benefit of orphans, any attempt to dabble with bricks and mortar being deprecated. A further meeting to consider this subject was held at the *Gardeners' Chronicle* office on Friday to settle preliminaries. So far, then, as we can read the signs of the times, the establishment of an Orphan Fund is the way in which the gardeners of the kingdom at large prefer to celebrate the Jubilee year—and a very noble way too. God speed the efforts of those who are engaged in such an enterprise! No objection has been raised by any one as to the main principle of the establishment of an Orphan Fund—indeed, the only hesitation expressed by our correspondents is as to some possible injury to the funds of the Gardeners' Benevolent. We know what continual "pegging away" it required to get the amount of the pensions augmented, but it was done; we know what labour and importunate begging are required to secure the annual income for the Society, but it is done. That Society has now in consequence a fair amount invested in the Funds, not so large as it should be, but still there it is, and there it would not have been but for these continuous efforts. Mr. Cutler, the evergreen Secretary, had told us before now that at the beginning of the Society the resources of the Institute were so small that only one pensioner could derive benefit from it—now there are a hundred. Is not this history one of good omen for the Orphan Fund?

Suppose we are only able to come to the aid of one orphan in the first year, we shall then be in no way worse off than the Gardeners' Benevolent was, which, as we have seen, began with one pensioner, and now has a hundred, besides a good store in the Funds. The limited possibilities of the present are therefore by no means detrimental to the prospects of the future of the Orphan Fund. Nor do we altogether share the dread lest the funds of the Gardeners' Benevolent should suffer by the new calls on the support of the fraternity. Many of us will support both as far as we can, and as long as we can; others, able to help one institution only, will contribute to that which they prefer. The stream of charity will not be lessened, it will be probably increased, certainly more widely diffused. We should not be surprised if eventually, so far from suffering, the Gardeners' Benevolent would actually profit by the quickening of that sense of duty which will arise as a consequence of the appeal now made on behalf of the orphans.

We append the resolutions which were passed at the meeting on Tuesday, and we trust, now that these Jubilee proposals have so far crystallised into one scheme with a definite object, that sympathy, loyalty, patriotism—all and every of the agencies which influence men for good—will be exerted in favour of the Gardeners' Orphan Fund.

At the meeting at the Royal Horticultural Society, Mr. George Deal (Weeks & Co.) presided, among those present being Dr. M. T. Masters, F.R.S., Messrs. A. F. Barron, Secretary *pro tem.*, B. S. Williams, C. Penny, J. Smith, J. Matthews, J. Wright, W. Richards, J. Roberts, G. Stevens, R. Dean, J. Hudson, J. Woodbridge, W. Denning, B. Wynne, E. Hill, J. Burnett, W. G. Head, S. Ford, W. Holmes, G. Bunyard, &c. The Chairman, having set forth the object of the meeting, remarked that he thought the erection of a building was, for the present at least, quite out of the question, and suggested that, in the event of a sufficient fund being obtained, the boarding-out system should be adopted as far as practicable, as more economical and satisfactory, and narrated some interesting experiences of a favourable character of the working of the boarding-out system. Mr. C. Penny laid on the table a large number of letters he had received from various persons in favour of the scheme, and reported that the sum of £100 had already been promised. Mr. A. F. Barron also produced a number of letters of a like favourable character, and intimated that he thought the proposal would be liberally supported by horticulturists generally. Amongst the suggestions thrown out was one to the effect that the movement should be of an entirely independent character, altogether dissociated from any existing institution. It was further suggested that it should not in any way clash with the Gardeners' Royal Benevolent Institution. It was proposed by Mr. J. Wright (*Journal of Horticulture*), and seconded by Mr. J. Roberts (Gunnersbury Park), "That a fund be opened, to be called the Gardeners' Children Orphanage Fund." Carried unanimously. It was moved by Mr. R. Dean, and seconded by Mr. J. Smith (Mentmore), "That a preliminary committee be appointed to prepare a scheme, and lay the same before a future meeting, such committee to consist of Dr. Masters, Messrs. G. Deal, Shirley Hibberd, J. Fraser, H. J. Veitch, C. Penny, B. S. Williams, J. Wright, C. W. Sharman, R. Dean, J. Douglas, A. F. Barron, and W. Richards, with power to add to their number." Carried unanimously. Mr. William Richards, 41, Wellington Street, Covent Garden, was appointed Treasurer to the fund; and Messrs. A. F. Barron, J. Wright and B. Wynnne, were appointed Hon. Secretaries. The meeting, which throughout was of a hopeful and satisfactory character, then closed with a cordial vote of thanks to the Chairman.

Liverpool Exhibition.—An Imperial Jubilee Exhibition will be established at Liverpool this summer. The Exhibition will be general, but will also have a local character; thus the erection of an old Lancashire village to typify the old style of building in the county, and also a collection of relics of the County Palatine, will be features. The Exhibition building itself is, the management states, to be the "finest that has been erected in this country since the Great Exhibition of 1851;" the grounds will also be of great beauty and extent. Some idea will be gained by those acquainted with the buildings used for South Kensington Exhibitions during the last four years by the following illustration:—The main gallery at South Kensington, better known last year as the Indian Courts, is about 800 feet long, 50 feet wide, and 50 feet high. The main gallery at Liverpool is to be 1200 feet long, 83 feet wide in the first third of its extent, and 150 feet wide in the remaining two-thirds, and 80 feet high throughout. A series of flower and fruit shows will be held during the term of the Exhibition, and thus an additional attraction will be given. The promenade in which these shows will be held will be 480 feet long and 82 feet broad, running right and left from the centre of the main avenue inside the building, and in wet or cold weather will be utilised for promenade concerts.

The Frost Report.—Time flies so rapidly that the Arctic winters of 1879-80, 1880-81 are well nigh forgotten. Nevertheless, the facts now recorded will be of use for all time, and it is only fair to the Editor of the Report just issued by the Royal Horti-

THE PHALÆNOPSIS HOUSE, AT HEATON HALL, CHESHUNT.

cultural Society to say that the delay in the publication is not to be laid to his charge. The horticultural world, in any case, has now at its command the fullest and most complete record of the effects of frost on vegetation in the British Isles that has ever been issued. The Report was prepared at the instance of a sub-committee of the Scientific Committee of the Royal Horticultural Society, and forms a record of the effects of the two most disastrous winters that have occurred in our generation. The result is in no sense light reading, but for future reference as to the effects of abnormally severe winters it will be invaluable. We heartily congratulate the Rev. George Henslow on the completion of his laborious task, and we may equally congratulate the Royal Horticultural Society on this very solid addition to the literature of horticulture. It is noteworthy that, at a period of unparalleled depression, the Society has yet been able to put at the service of the public such records of permanent value as the reports of the Apple Congress, the Orchid Conference, the Primula Conference, and now the Frost Report. If these several reports do not make good a claim for the Society to be considered as one of disinterested, public utility, we do not know what better claims the old Society has. We may add that the report of the Pear Congress is also completed and in type. These reports do honour to the Society, and furnish striking evidence of the energetic vitality that still exists among its well-wishers. The reports in question may be had by Fellows on application to the Assistant-Secretary, and those who are not Fellows will get their money's-worth, if they are inclined to purchase them.

Indian Figs.—A paper by Dr. George King, of Calcutta, on "The Genus Ficus, with special reference to the Indo-Chinese species," was read at the Linnean Society on March 17, in which it was shown that insects play a considerable part in the fertilisation of certain forms. Dealing with the structural peculiarities of the flowers in the genus Ficus, he specifies—1, male; 2, pseudo-hermaphrodite; 3, neuter; and, 4, female fertile flowers. Besides these there occurs a set of flowers originally named by himself "Insect-attacked females," but for which he has adopted Count Solms Laubach's term, "Gall Flowers" (see *Gardeners' Chronicle*, vol. xix., p. 530; vol. xx. p. 22, 1885)—the latter botanist having anticipated him in publication, though King's researches had commenced earlier. As to the question of these gall flowers, Dr. King states that the pupa of an insect can usually be seen through the coats of the ovary. The pupa, when perfected, escapes into the cavity of the receptacle by cutting its way through, and fully developed winged insects are often to be found in considerable numbers in the cavity of the Fig. The pupa of the insect must become encysted in the ovary of the gall flower at a very early period, for about the time at which the imago is escaping from the ovary the pollen of the anthers of the male flower is only beginning to shed. Thus Dr. King holds that through the interposition of insects the malformed flowers doubtless become functionally important in the life history of the Fig trees. From the peculiarities in the structure and arrangement of the flowers Dr. King is of opinion that the evolutionary history of the genus Ficus may be traced. On data derived therefrom he arranges the Indo-Malayan species into two great groups, the second of these being again divided into three subsidiary sub-groups as follows:—

Ficus, *Linn.*

Group I. Pseudo-hermaphrodite ...			... Galæomorphe.
Group II. Unisexual.	Sect. I. ...		... Urostigma.
	Sect. II. ...		... Synœcia.
	Sect. III.	A.	Sycidium.
			Corwellia.
		B.	Eusyce.
			Neomorphe.

List of Seeds of Hardy Plants.—A very full list of seeds of herbaceous and perennial plants has been issued by the authorities of the Royal Gardens, Kew, for purposes of exchange. A similar list has reached us from the Royal Gardens, Glasnevin, Dublin, the Botanic Gardens of Klausenburg (Hungary), of which Professor Kanitz is Director, and from that of Montpellier, over which Professor Planchon presides.

Helianthemum algarvense.—The *Garden* is doing good service by the publication of coloured figures of the very beautiful but greatly neglected plants, the Rock-Roses (Cistus and Helianthemum). The present species is figured in the *Garden* for March 12, and is a dwarf shrub, with oblong-acute leaves and linear cymes of yellow flowers with a crimson or purplish eye. It is not quite hardy, but amply repays a little attention. We find most of the species do well on a rock border a little raised and well exposed to the sun.

Hooker's "Icones Plantarum."—The last-issued part contains numerous lithographic illustrations taken from dried plants preserved in the Kew herbarium. Among them is one of Cotyledon viscidus, a Californian species, with tufts of linear leaves, and a branching cyme bearing numerous flesh-coloured flowers. The plant flowered in the Royal Botanic Gardens in 1886. Vitis humilis, a new species from Natal, described by Mr. N. E. Brown, is as unlike a Vine as can well be, except in the flowers. It is a decumbent shrub, with cordate, oblong acute, deeply toothed leaves. A yellow-flowered Hepatica, from the mountains of Central China (Hepatica Henryi), is also figured.

Anæctochilus Lansbergiæ.—A very beautiful foliage plant, with ovate acute leaves, of which the central portions are dark green with lighter veins, the marginal portions golden-bronze edged with cream colour. It is a Malayan species recently introduced by the Compagnie Continentale, and figured in th January number of the *Illustration Horticole*, t. 1. The plant is grown in a pot three-parts filled with drainage, the remaining portion filled with peat, sand, and broken brick. This pot is placed within another much larger one, the space between the two pots being filled with sphagum which is kept wet, the plant itself not being watered.

Tunbridge Wells Horticultural Society.—Mr. E. T. Loot, who has for the past twenty-eight years filled the office of Secretary to the above Society, has just retired, and is succeeded by Mr. Cornwell. Probably, excepting Mr. John Wilson, Secretary of the York Floral Fête, this is one of the longest official careers in connection with any horticultural society of the present day.

The Burridge Relief Fund.—Mr. Burridge thankfully acknowledges the receipt of the following:—From Mr. Thomas Taylor, Bocking, Braintree, 10*s.*; and Mr. G. B. Scott, Seed Grounds, Langley, Bucks, 8*s.*

Rating of Nurseries, etc.—We desire to call special attention of those concerned to the decision cited at p. 422, upholding the general rule that market gardens, nurseries, &c., should be rated at one-fourth the ordinary scale. It must, however, be remembered, that local circumstances sometimes modify the rule.

Schizocasia? Regnieri.—Under this name Messrs. Lucien Linden and Rodigas describe and figure, in the February number of the *Illustration Horticole*, t. 6, a new Aroid introduced from Siam by M. Regnier. The plant has not yet flowered, hence its name must be considered as provisional. The leafstalks are about 20 inches long, erect, cream-coloured with purplish spots, the blades about 2 feet long, hastate, oblong-lanceolate, pinnately lobed; lobes narrow, dark green, the terminal one longest. It must be a very striking stove plant.

"Revue Agricole."—The President of the Acclimatisation Society of Mauritius has issued the first number of a journal devoted to agriculture and horticulture. The journal is established with a view to furnish means for meeting the depression in the sugar trade. Seeing the folly of relying on one article only, the conductors of the journal devote attention to fruit culture, flower farming for perfume, Tea culture, and other matters.

"Chambre Syndicale" of Ghent.—At a meeting held on Monday, the 14th inst., the following awards were made:—

First-class Certificates.—To Messrs. Blancquaert & Vermeiren, for Clivea miniata var. Chevalier Heynderick; to M. B. Spae, for Clivea miniata var. Mme. Bernard Spae; to M. Jules Hye-Leysen, for Cypripedium insigne Förstermanni (?); to Messrs. Vervaet & Co., for Odontoglossum Schillerianum; to Messrs. Vervaet & Co., for Cattleya Trianæ var. Popayan.

The following Commendations were also given:—

For Merit:—To M. Isidore Denovette, for seedling Clivea; to M. B. Spae, for Clivea miniata var. Perfection; to Messrs. Vervaet & Co., for Odontoglossum Andersoni; to Mr. James Bray, for Cattleya Trianæ; to Mr. Ed. Delanghe, for seedling hybrid Rhododendron.

For Culture:—To M. B. Spae, for Clivea Juliani.

Cornish Early Potato Crop.—The *Cornishman* states that the crop around the cliffs between Lamorna and Penberth (the south-west frontier of Mount's Bay), which was so forward and looked so promising before the frosts of the last few days, has been completely destroyed in several places. The leafage was 4 or 5 inches above the ground. Messrs. G. Berryman, of St. Loy, and S. Jacka, of Tregiffian, had over an acre each in this state of Potato promise. We are sorry to add that the same news applies to many places at the islands of Scilly, and to less forward patches in Gulval, Ludgvan.

"Rosen Zeitung."—Germany as well as France has its *Journal des Roses*. The above-named journal is the organ of the German Society of Rose-lovers. It is published at Frankfurt-on-the-Main by Jaeger. The number before us contains articles on the Polyantha Rose to accompany a coloured plate illustrative of several varieties, reports on various German Rose nurseries, on pedigree Roses, with details of the results of various crosses, and many other matters of interest to rosarians.

Genetic Affinities of the Algæ.—The familiar terms, green, red, and brown algæ, so appropriate and easily remembered, were rudely disturbed, especially when Sachs in his *Morphological and Physiological Text-Book*, shook up the older classification and intertwined Fungi and Algæ. Mr. Bennett, in a paper read before the Linnean Society, March 3, avers that arrest of development has had an important influence in many presumed deviations among the groups in question. According to him retrogression may take the form of suppression of either the vegetative or the reproductive organs, and whichever predominates or progresses leaves the other degenerate. At an early period in the development of the simplest form of vegetative life, colourless, blue-green, and pure green cell contents were manifested. Thus, Mr. Bennett gives three great divisions:—1, Schizomycetes—forms entirely destitute of chlorophyll, and adapted to carry on a parasitic existence; 2, Chroococcaceæ—unicellular organisms with cell contents composed of watery blue-green endochrome diffused through the protoplasm, without distinct chlorophyll grains, starch grains, or nucleus; 3, Protococcaceæ—characterised by cells possessing a nucleus, starch grains, pure chlorophyll, identical with that of higher plants, and in certain states a true cell wall of cellulose. The first lead to the Fungi, the second pass through the Oscillariæ to the Nostocs, and the third is the great derivative of the Algal group. Of the latter third division there are a number of subdivisions, the Diatoms being low in the scale, and of remote

origin. The Desmids are a retrograde group. The brown seaweeds adapted to a deep sea life terminate in the Fuci. The Confervs lead to the Florideæ, or red seaweeds, a natural group of great variety in the development of their sexual organs. From these, it is conjectured, were derived the Charas, the mosses, the gymnosperms, and, lastly, the higher angiosperms, or flowering plants. Mr. Bennett's views will doubtless hereafter receive much critical comments, but should he carry the day it will certainly relieve the student of much of the difficulties attendant on a study of the lower vegetable forms, which at present are in a very complicated state.

Fruit Bloom at Gordon Castle.—Our correspondent, Mr. Coomber, Monmouth, in giving an account in our last issue of the recent weather in his district, mentioned the fact that the bloom of Apricots on walls was at that date unopened. To-day (March 23) another correspondent, Mr. Webster, of Gordon Castle Gardens, sends us spurs of Apricots from trees under Spruce branches on open walls covered with fully open flowers, and embryo fruits quite uninjured by frost, of which there had been from 8° to 10°, the lowest point being reached on March 12. This difference in the state of vegetation is the more remarkable, the two places being rather more than 5° of latitude apart, but the proximity of Gordon Castle to the sea may account for its comparative immunity from severe cold.

PHALÆNOPSIS AT HEATON HOUSE, CHESHUNT.

[See Supplementary Sheet.]

The Moth Orchids are not generally well grown, even now that Orchid culture is much better understood than formerly; indeed, out of the many collections it has been our privilege to inspect but few seem to attain anything like perfection with the Phalænopsis. Among the few successful cultivators of them may be noted F. A. Philbrick, Esq., at Bickley; Mr. E. Hill, who has such grand specimens in his care in the gardens of Lord Rothschild at Tring Park; and certainly in the front rank must be placed the collection of C. J. Partington, Esq., of Heaton House, Cheshunt, of whose Phalænopsis-house we give an illustration. In this house the plants grow to very large proportions, some of the plants of P. grandiflora having twelve or thirteen leaves, the length, breadth, and stout substance of which would place it almost beyond the recognition of those who only know these plants as they are usually found. Let us see if we can find out anything in the culture and surroundings of these plants which may be useful to those who are less successful. The house, which is a lean-to, faces south, and that is rather against the preconceived proper aspect of a Phalænopsis-house; it is, however, built in a sheltered angle, and every care is taken to protect the plants from sun. For that purpose a roller-blind is now in use, and soon a permanent shading of something like Williams' "Eureka Shading" will be painted on the glass to give shade in addition to that provided for by the roller-blind. The plants are all in Teak baskets, their roots being rather loosely filled in between with sphagnum moss, so that the air is not so excluded as when tightly packed. The house is kept between 60° and 70° Fahr. in winter, but now as the sun gets power, and the plants are actively commencing to grow, the thermometer is allowed to range over 80° in the day, the floor, staging, and walls (the end one covered with Ficus repens) being at the same time kept moist, but the plants themselves are not syringed overhead, neither are any of the other Orchids here, and to that Mr. Benjamin Searing, the gardener, attributes a good part of his success. Certainly his plants are in grand condition, and great credit is due to him for the manner in which he grows all things in his charge. This culture seems to suit all the Phalænopsis equally well, the plants of P. violacea and others of that section being of equal vigour with the P. amabilis and P. Stuartiana, which are usually thought to be better growers. For the show of flowers on all the species, and especially on the P. grandiflora, P. amabilis, and P. Schilleriana, reference to our illustration will serve to give some idea.

The Odontoglossums are also grown to a great size by Mr. Searing, and many of them are sending up spikes as thick as an ordinary cedar-pencil, while some are already in great beauty. Among these we noted some fine O. Alexandræ, O. triumphans, O. hystrix, O. odoratum, and many varieties of luteo-purpureum, and O. Rossii. Other well-bloomed Orchids here just now are Odontoglossum cariniferum, Oncidium serratum, Pilumna fragrans, some good Lycastes and Masdevallias, some grandly-flowered Dendrobium nobile and other Dendrobes; and in the Cattleya-house, which has no less than six fine specimens of the rare pure white Cattleya Gaskelliana alba, there are some exceptionally good forms of Lælia harpophylla, Cattleya Trianæ, C. amethystoglossa, C. citrina, Vanda gigantea, V. tricolor, Calanthe Stevensi, C. Regnieri, and some Aërides, and other Orchids, the whole being very healthy, and free from insects of any kind.

CULTURAL MEMORANDA.

CINERARIAS.

These contribute not a little to the floral display of the spring months. The Cineraria being a fresh-air loving plant, abundance of air must be admitted to the plants on all favourable occasions, otherwise weak growth will ensue, and the plants fall a prey to the attacks of aphis; should these appear, fumigate lightly. In the matter of giving water at the roots, great care, at every stage, should be exercised, for if kept too wet at the roots they speedily collapse, and under the reverse conditions the plants become stunted and lose their lower leaves. It is therefore advisable before giving water to ascertain if the soil has become moderately dry, and then give sufficient water to thoroughly moisten the ball of earth.

Maidenhair Fern.

This is a good time to pot up a good stock of young plants of Adiantum cuneatum. If sufficient seedling plants cannot be picked up in the plant stove a few of the old plants in being repotted should be divided and potted into 3-inch or 4-inch pots, using peat and light loam in equal parts, with a sprinkling of sharp sand added. These plants, if put into a warm, moist, shady situation, such as that afforded on the bed underneath Cucumber and Melon plants, or an early vinery, will soon start into growth, and make nice useful plants for decorative purposes during the summer and autumn months.

Richardia æthiopica.

The large white trumpet-shaped flowers, borne on stout stems well above the large dark green leaves, make this an effective plant for the greenhouse or dwelling-room, and it associates well with plants of Azalea, Camellia, Deutzia, Cineraria, &c. The plant, being of vigorous growth when healthy, should be watered with diluted liquid manure almost daily, otherwise the flowers will not reach large dimensions. A temperature ranging from 45°—50° at night, and 10° or 15° higher by day, with sun-heat, giving air freely, suits the plants admirably; but if they are subjected to warmer temperatures than these the flowers will lack size and substance, and the plants be liable to the attacks of aphis. Should these insects appear the house should be fumigated lightly two evenings in succession with tobacco-paper. *H. W. Ward.*

Ada aurantiaca.

This beautiful Orchid is now in bloom in the stove, where its spikes of orange-scarlet flowers are very conspicuous at this season of the year. It is a free grower and flowerer, and easily managed where there is a hothouse kept at a temperature of 60°—70°; and placed near the glass on the north side of the house. It should have air given freely on bright days. The night temperature should range about 55°, and during the summer the plants should be syringed with tepid water daily. The best compost is good peat, charcoal, broken fine and well mixed with a little sand, and the pots must be clean and well drained, and should be mossed over.

Dendrobium densiflorum.

A specimen of this fine Orchid commenced flowering here early in February, lasting in full beauty over a month. This lovely orange and yellow-flowered Dendrobe can be accommodated when in bloom in the stove or conservatory, if warmed up to 60°, and is well adapted for placing in vases. When the plants have done flowering they are examined to see if any require repotting or merely surfacing. The compost I use is good peat, broken crocks, and moss, with a little sand added. Carefully pot the plants, and keep them well up above the rim of the pot. The plants are then placed in a strong heat, and syringed every day; and as soon as they begin to grow, plenty of water is given to them. When the growth is finished and the flower-buds are formed, which is about the end of August or beginning of September, I remove them to a cool house where plenty of air, but very little water—just sufficient to keep them from shrivelling—are given. I place them in the stove or Orchid-house towards the end of October. *W. Smith, Basing Park, Alton.*

LAW.

PURSER *v.* THE WORTHING LOCAL BOARD.

This case (Queen's Bench Division, March 19, before Mr. Justice Day and Mr. Justice Wills) raised the question whether glasshouses and greenhouses in which fruit, flowers, and vegetables are grown for market are to be rated at their full rateable value, or only at one-fourth value by virtue of sub-sec. 1 (b) of sec. 211 of the Public Health Act, 1875, which provides, *inter alia*, that "market gardens or nursery grounds" shall be assessed in respect of one-fourth part only of the nett annual value. The special case found that George Purser, the appellant, was a grower of fruit, vegetables, and flowers, carrying on business at Worthing, and describing himself as a "market gardener and nurseryman," and that he was the occupier of a piece of land of about 1 acre 1 rood, upon which were sixteen glasshouses or greenhouses of various sizes, used by the appellant for the purpose growing Tomatos, Cucumbers, Grapes, flowers, &c., in the course of his business. The appellant had been rated at the full rateable value in respect of this property under the description of "greenhouses."

Mr. Lumley Smith, Q.C. (with him Mr. English Harrison and Mr. Bartley Dennies), for the Local Board, contended that this was in no sense either a market garden or a nursery ground. This was a new industry which was developed extensively on the South Coast, where in many places acres of ground were covered with glasshouse in which plants were not grown in the ordinary sense, but merely put in to be forced. The appellant's premises were covered in this way, with the exception of a few yards of ground, for which he was not rated. All the greenhouses rated had brick walls, and were attached to the soil as much as any other house is. The plants, though in some cases they drew part of their nourishment from the ground, were mainly nourished within the houses by artificial water and artificial heat, and in three of the houses the entire soil was artificial.

Mr. Justice Wills.—There may be artificial soil in an open market garden.

Mr. Justice Day.—Is a mere forcing frame rateable?

Yes, if it rests on brickwork. [Mr. Smith cited

as analogous cases, "South Wales Railway Company *v.* Swansea Local Board" (4 E. and B., 189), "Newport Dock Company *v.* Newport Local Board" (2 B. and S., 708), and "The Queen *v.* Midland Railway Company" (L. R. 10, Q. B., 789.)]

Mr. Justice Day said he did not doubt for a moment that this ground was within the exemption, and should be properly rated on the one-fourth scale. His Lordship considered this a market garden. It was a place used to garden in, and gardening was a term commonly applied to agricultural production of any kind on a small scale. His Lordship could not see that the garden was less a garden because it was wholly or partly under glass, or otherwise protected from the weather, or because it had walls or a roof. It was still a garden, and in this case it was a market garden, because it was used for producing fruit, flowers, and vegetables for market.

Mr. Justice Wills was of the same opinion, and the rate was ordered to be amended accordingly. "*Times*," *March* 21.

Little & Ballantyne, Carlisle *v.* The International Exhibition Association of Industry, Science and Art, Edinburgh, 1886 (Limited).

Judgment in this case, which has been looked forward to with much interest by the trade in Edinburgh, was given on Saturday, the 19th inst., by Lord Fraser in the Court of Session, Edinburgh.

The facts of the case are as follows:—The pursuers sued defenders for payment of £100 18*s.* 6*d.*, being loss or damage sustained by their exhibits at the Exhibition of last year through the alleged fault of the defenders. Pursuers sent a collection of trees and shrubs of the above value to form an exhibit, as well as to adorn the grounds of the Exhibition. The trees and shrubs were planted, and all went well till September, when the defenders determined to have Highland games and other sports within the Exhibition grounds. In making arrangements for these games, defenders required a portion of the ground occupied by pursuer's exhibit, and requested permission of the latter to remove as many of the plants as were necessary to enable them to erect a barricade along one side of the exhibit. Pursuers stated that this request was granted, on the distinct understanding that it was temporary, and that the plants should meantime be properly cared for and returned to their places, and be again planted. Pursuers also averred that defenders, without any warrant or permission, went beyond the limits of the above request, and also erected a stand for the public, and which covered the whole remaining portion of the exhibit, excluding light, heat, and moisture; that this stand was allowed to remain till the close of the Exhibition (six weeks); that in the erection of the stand, or in consequence of it, many plants were broken and crushed, and that those which had been removed had been so carelessly attended to as to render the collection worthless and unsaleable. On receiving from defenders official notice to remove their exhibits at the close of the Exhibition, pursuers, after inspecting them, declined to do so, and made a demand on defenders for the sum sued for, and which they refused to pay.

The defenders averred that they obtained permission from pursuer's representative for the erection of the stand, as well as the barricade; that the plants removed were carefully attended to, and had suffered no injury; that those that remained had been uninjured, with the exception of a few accidentally broken in the course of the construction of the stand. The defenders also averred that they had the damage sustained by the plants assessed by competent valuators, who put the total loss sustained by pursuers at £5 11*s.* 6*d.*, and had tendered £7 7*s.* and expenses to date of tender in full of all claims.

Lord Fraser, in giving judgment, said there was some controversy as to whether pursuers were invited to send plants to the Exhibition, or whether they did so without being invited; but the point was immaterial. The plants were there as a loan on hire without charge, and the defenders were liable to the amount of all preventible damage while the exhibits remained in the Exhibition. His Lordship was of opinion that defenders were in fault. In "sheuching" the plants removed the defenders did not use ordinary care or skill; the result was that they suffered very materially; and it was only on the footing that they would be sheuched during the time of the games (four days) that the pursuers' representative agreed to their temporary removal to a sheuch. As regards the erection of the stand there was some discrepancy, but the Lord Ordinary preferred the evidence of the pursuers' representative. It was obvious enough that the effect of the erection would be injurious to the plants. It excluded air, prevented rain from getting to them, and the sun would not operate beneficially upon them. His Lordship did not think the sums stated in the account of pursuers were overcharges; but as in February the plants had to be removed in some way, he remitted to Mr. Mitchell to value them, which he did at £12 10*s.* 1*d.*, at which price they were taken over by the pursuers. They afterwards realised by auction £12 8*s.* 6*d.* Deducting this latter sum and the sum of £13 entered in the account for Japanese Maples which had been removed by the pursuers, along with discount at the rate of one-third the usual discount in the trade from the amount claimed, his Lordship found pursuers entitled to the balance, £46 2*s.* 4*d.*, as damages, with expenses. *Correspondent.*

Home Correspondence.

ROYAL TREES.—If a column or two in the *Gardeners' Chronicle* could be devoted to a short summary of the history of the many trees planted by Her Majesty in different places throughout the United Kingdom and Ireland, it would afford pleasant information to the readers at this time, and I may also add, be an interesting bit of history for those who may come after. Correspondents throughout the country would no doubt gladly come forward with the desired information, giving details of height, proportions, dates, and variety of tree. We should then know who might be the happy possessor of the finest of the many trees planted by Her Majesty during her long and beneficent reign. May I further suggest that the information should be published as a whole and not in fragments? This would necessitate the fixing of a date for the information to be at the *Gardeners' Chronicle* office. *Correspondent.*

PLANTING EVERGREENS.—When is the best time to plant? is a question that was addressed to me a few days ago, and great was the surprise when I recommended that it should be done in April. My questioner thought that to transplant evergreens then was something akin to madness. That excellent authority, the late Mr. Charles Lee, of Hammersmith, once told me that the spring and summer months are the best in which to plant evergreens. He stated that his practice was to begin, say, on April 1, and to continue until June, and leave off while the plants were making their strong growth, and to commence again for about a fortnight at the end of July; but if the weather were hot in July to defer the resumption of planting till early in September. Mr. Lee further said that it was his practice to break away all the young shoots, and that the plants would instantly almost burst into wood again. But in the case of the latest attempts at planting the first growth must not be broken away, as that will, to some extent, have become matured, but only the young shoots of the second growth. *R. D.*

WONDERFUL PLANTS.—Mr. J. R. Jackson, in his interesting paper on "Wonderful Plants," in *Gardeners' Chronicle*, March 5, mentions a distillatory plant as one of the "wonders our forefathers rejoiced in," and gives a quotation from a description of it by "Hermannus Nicolaus," under the heading "Dripping Trees," adding, "Whether or not this tree is identical with that which is known as the Rain-tree . . . . is a question that cannot be decided." To set Mr. Jackson's mind at rest on this point, and for the sake of accuracy, I may mention, that what Hermann Nicolaus Grimm (not "Hermannus Nicolaus") described in 1682 in the *Ephemerid. Acad. Nat. Curios.*, ann. i., dec. ii., is a plant of the genus Nepenthes, therefore one of the "Carnivorous plants of our day," which, had they attracted the attention of the old herbalists, they would have been made so much more capital out of, according to Mr. Jackson. Mr. Jackson may convince himself that the quotation he gives refers to a Nepenthes, by reading H. N. Grimm's own description in the book I quoted, or E. Wunschmann's *Ueber die Gattung Nepenthes*, or by simply stepping over from his museum into the house where the Pitcher plants are kept at Kew. *J. Guardia, F.R.M.S.*

THE PHLOX.—I read at p. 381 that "the old stools of Phloxes may require division. It is best to have those so that they will throw from six to eight good shoots," &c. I beg to say that chopping up the old stools of Phloxes into pieces with a spade is a not unusual but a clumsy way to propagate them. The way to get good strong healthy young plants is to take cuttings now. Plenty of them can be obtained by nipping off the superfluous growths with the fingers. This is the only way to obtain strong vigorous growths and handsome spikes. *J. D.*

DEVONHURST.—At this place, once part of the Royal Horticultural Society's garden at Chiswick, and now the residence of E. W. Watts, Esq., we are pleased to find that an enthusiastic horticultural spirit is dominant, fostered by Mr. Watts' zealous gardener, Mr. A. Wright. A good collection of Orchids is being formed, a large consignment being now on their way from Mexico. One house we entered was a glow of colour. Cattleyas in variety—we noted especially a fine form of C. Skinneri—Odontoglossums, Dendrobiums, Cypripediums, the useful Cœlogyne cristata, the now somewhat scarce Oncidium cebolleta, yellowish-red flowers, spotted. It is figured in *Bot. Mag.*, t. 3568. Some capitally well managed Cyclamen persicum in flower, dotted here and there about this house, had a very bright and pleasing effect, as also handsome small specimens of "Obadiah" Oranges in fruit. The well-known greenhouse climber, Cestrum elegans, was very noticeable with its numerous purplish-red flowers produced in dense terminal cymes. A hint here as to its successful management — Mr. Wright's course of procedure being to prune back at the end of June or beginning of July for winter flowering. Sparmannia africana, another useful decorative subject, was also well in flower—a cool treatment being the course pursued during the summer months, to get it in perfection. In winter Azalea narcissiflora forms a capital free-blooming subject—a specimen here being literally clothed with flowers. Rhododendron Countess of Haddington is an object of beauty, 120 flowers being counted upon it. The winter's storms of 1887 have left their marks on the pleasure ground. Prunus mahaleb, said to be one of the finest specimens in the country, has been much damaged. The evergreen Oaks have fared badly likewise, as also a fine example of Quercus suber (the Cork tree). *B.*

HUGE CINERARIAS.—I have just flowered three very fine Cinerarias measuring respectively 5½ feet, 5 feet 4 inches, and 4 feet 5 inches round the head (of blooms, not foliage), very compact habit, and some of the individual flowers close on 3 inches across them. *P. Hussey, Cherry Burton, Hull.*

A CURIOUS FACT IN FERN REPRODUCTION.—Amongst those who have made Ferns a special study it is a well recognised fact that the spores of abnormal forms, though generally quite true to the type of their immediate parents, possess now and then a great aptitude for further variation; this is, however, generally in the same direction, *i.e.*, spores of crested forms may yield plants of denser cresting; finely divided forms, plants of still finer division; and so on. The case, however, of which I give particulars is so much differentiated from these that I think it merits record. About two years ago I received a frond of an extremely finely divided form of Athyrium filix-fœmina of purely normal outline (viz., A. f.-f. plumosum elegans, Parsons), raised from spores of a wild frond known as A. f.-f. plumosum, Axminster. Upon the said frond I found numerous sori intermingled with bulbils capable of producing plants, the spores, which, as I have indicated, were taken from a frond without a trace of cresting, produced a plentiful crop of plants, all of which, with but one

or two exceptions, were finely though somewhat irregularly crested both at the tips of the fronds and of the pinnæ—a result so unexpected that had I not carefully registered the sowing and equally carefully kept it isolated, I could not have believed but that some error had crept in to mislead me; later on, however, the plumose character of the parent became too manifest to admit of doubt; and besides, I ascertained that I had sown nothing the offspring of which could be confounded with the crop produced. Still, the fact was so strange that I have hesitated to place it upon record until now, when, having mentioned the circumstance to Mr. Fitt, of the Frythe Gardens, Welwyn, Herts, from whom I received the parent frond, he writes me that his experience of sowing spores from the same plant exactly coincides with mine; he also, without having seen my plants, gives me an entirely independent description of his seedlings, which are identical in character with mine, and as in my case, form an overwhelming majority, very few being raised like the parent. We have here, then, I take it, a well authenticated case of an entirely non-crested Fern, characterised solely by finer divisions than the normal form, producing through its spores a vast majority of offspring in which all the terminal points are multiplied exceedingly. It would be interesting to know whether any of your Fern-loving readers can mention analogous cases, which might give a clue to some law governing the power of variation, which, though common to more—probably all—plants, seems to have greatest scope in the Ferns. *Chas. T. Druery, Fernholme, Forest Gate.*

VIOLET WELLSIANA.—Again would I call the attention of your readers to this most magificent Violet. Its lovely colour, excellent constitution, large-sized flowers, and fine long stalk, pronounce it at once the king of single Violets. Being so large, it perhaps will not stand rough spring weather out-of-doors so well as some varieties, but give it the shelter of a frame in which to pass the winter months and in March it is most useful and most acceptable. One day this kind will be largely grown for bouquets, and those who grow for market will do well to look after it. In some places I often hear Violets will not grow: let any one who has thus complained try again, and with this variety, and I believe they will succeed. Give every encouragement to the plants in summer, and they will not disappoint you when called upon for their blossoms. *J. Rust, Eridge Castle.*

LÆLIA ANCEPS HILLI AND L. A. DAWSONI.

These two beautiful varieties of Lælias should be in all choice collections of Orchids, affording their flowers, as they do, during a season of the year when the Orchid-house is the most bare of bloom. The first-named is a variety with comparatively narrow white lanceolate sepals and oblong petals. The labellum is marked inside with yellow, with lilac veins, and stained with pink on the front portion. It is a comparatively small-flowered variety.

L. a. Dawsoni is a flower of great excellence, the ovate lanceolate petals and the lanceolate sepals being of the purest white, and great substance, and symmetrically arranged. The labellum is of purplish-crimson, with a yellow crest in the centre. For further particulars about these and other fine varieties of Lælia anceps see our issue for February 26 last.

The flowers figured in our present illustrations (figs. 82 and 83) grew in the Orchid-houses of Baron Schröder, The Dell, Egham, and to whose kindness we are indebted for the opportunity afforded us of engraving them.

Fig. 82.—Lælia anceps var. Dawsoni.

THE ORCHARD HOUSE.

Owing to the continued cold weather the trees are not yet in blossom in the late house. As I write this the weather is as stormy and cold as any we have had yet—no sunshine, snow falling, and the wind blowing keen from the east. Where houses are not heated it is much better that the buds should not be forward. We will not take any steps to hasten their development. In the earliest house the fruit has arrived at that stage when thinning it out becomes necessary, and at the same time the superfluous growths must be pinched out. In thinning out the fruits on Peach and Nectarine trees many persons leave a very large margin for what may be expected to drop off at stoning time. Why should fruit drop off at that time? Fruit that has been fertilised will not drop off at any stage of its growth, unless the trees may be overladen, when Nature may do what the skill of the cultivator should have done at an earlier stage. It may be taken for granted that if the trees are well managed, whether they are in pots or planted out, not 5 per cent. of the fruit will drop off when it is passing through the stoning process, and only that portion of it that has not been fertilised; but any one with some little knowledge of the work can tell such fruits at thinning time, and would remove them—they are smaller and not such plump specimens as the others. The roots are now pushing freely, and plants in pots require plenty of water. Insect pests are also on the trees, and must be destroyed by tobacco-smoke before the leaves curl up. The blossoms in the early house have set very freely. The weather at the time the trees were in flower was very unfavourable, but we kept up a continuous circulation of air, with a dry atmosphere and the temperature sufficiently high. *J. Douglas.*

Exhibition Fixtures.—The Aylesbury Horticultural Society's summer show will take place on July 14. That of the Glamorgan Horticultural Society will take place at Cardiff on August 11, and probably, by way of a Jubilee celebration, on the 12th also. The show of the Maidenhead Horticultural Society will be held on August 18.

SOCIETIES.

ROYAL HORTICULTURAL.

March 22.—This gathering of spring subjects was held in the conservatory at South Kensington. The tables were bright with pot Roses, Cyclamen, Narcissus, Hyacinths, and Amaryllis.

Scientific Committee.

Present: Dr. Maxwell T. Masters, F.R.S., in the chair; Messrs. G. Murray, H. N. Ridley, W. G. Smith, G. Maw, J. O'Brien, A. H. Smee, A. W. Bennett, A. D. Michael, G. F. Wilson, F.R.S., Dr. Lowe, Hon. and Rev. J. T. Boscawen, and Rev. G. Henslow, Secretary.

Spathoglottis Levaes.

Mr. Worthington G. Smith reported that he had been unable to detect either fungus or insect upon the leaves which he was requested to report upon.

Epidendrum cochleatum, &c.

The Hon. and Rev. J. T. Boscawen exhibited living plants of this in flower from British Honduras. He also exhibited sundry Daffodils, cultivated and naturalised in Cornwall. Both the single and the double form of Telamonius were naturalised at Roseland, on the south coast of Cornwall.

Richardia æthiopica.

From Miss Sullivan came a specimen with the uppermost true leaf partially developed as a spathe.

Japanese Dwarfed Pine.

Mr. George Maw exhibited a specimen of a Pine supposed to be about thirty years old, obtained from Japan and growing in a small oblong glazed pot.

The little tree was about 2 feet high, its branches, tied down in various directions, were curiously contorted, and its gnarled trunk as it were propped up by numerous snake-like roots, upraised beyond the level of the soil. The tree bore a small cone, from which it was identified as Pinus parviflora.

Narcissus Notes.

Mr. Maw also showed various species of Narcissus, such as N. rupicola, which has a sessile ovary and keeled leaves, by which it may be distinguished from the nearly allied species, N. juncifolius, in which the leaves are not keeled, and in which the ovary is shortly stalked. N. juncifolius occurs in the Pyrenees, while N. rupicola is confined to the central Sierras of Spain. Mr. Maw also showed the only wild white Daffodil, N. moschatus var. cernuus, gathered in the Spanish Pyrenees. In allusion to N. viridiflorus and N. serotinus, Mr. Maw said that one object of his recent visit to Spain and Tangier was to procure information as to the vernal condition of these plants, which in the autumn produce only flower-scapes without leaves. Mr. Maw has now ascertained that in the seminal bulb, up to the period of flowering, true leaves are produced, but at the time of flowering the flowering bulb has no true leaf.

Fig. 83.—Lælia anceps var. hilli. (see p. 424.)

Xiphion Tingitanum.

Mr. Maw showed flowers of this lovely species, which he described as covering acres of ground near Tangier, though flowering specimens were thinly scattered—a circumstance which may throw some light upon the rarity in which the plant flowers in cultivation.

Economic Products of Morocco.

Mr. Maw showed specimens of Kief, apparently a dwarf form of Hemp (Cannabis), smoked by the natives of Morocco in contravention of the Sultan's edict; he also exhibited numerous articles, such as matting, brushes, card-cases, &c., made from the leaves of Chamærops humilis. The matting was superior to that produced from the Cocoa-nut Palm.

Alleged Hybrid Narcissus.

Specimens were sent from J. J. Smythe, Esq., Co. Cork, and purporting to be those of a hybrid between the Hoop Petticoat Narcissus and the Tenby Daffodil (obvallaris). The committee requested to see further specimens before expressing an opinion on the subject.

Buds on Roots of Fern.

Dr. Masters showed for Professor Oudemans, of Amsterdam, roots of Diplazium malabaricum with leaf-buds growing from them, thus adding another to the small number of Ferns observed to have this peculiarity. Mr. O'Brien stated that the occurrence was well known to him in this plant.

The Frost Report.

Dr. Masters alluded to the great value of the work which the Rev. Geo. Henslow had that day laid on the table in a completed state. The report was more copious, and afforded more information than any similar report of the kind yet published. A hearty vote of thanks was passed to Mr. Henslow, who was warmly congratulated at the termination of his laborious report.

Floral Committee.

Present: G. F. Wilson, Esq., F.R.S., in the chair; and Messrs. W. Wilks, S. Hibberd, G. Maw, H. Bennett, W. Goldring, J. Walker, H. Herbst, G. Paul, A. Bradshaw, J. Fraser, T. Baines, R. Dean, B. Wynne, C. Noble, J. Dominy, C. Pilcher, H. Ballantine, J. O'Brien, A. F. Lendy, E. Hill, H. Turner, W. Holmes.

From the Veitchian establishment came Rhododendron balsaminiflorum carneum, the flowers, of sulphur-yellow and pale pink, being nicely doubled, the corymb being composed of eight to ten of them. This should prove a useful plant for the bouquet-maker, as well as for greenhouse decoration. Another pretty addition to greenhouse plants was observed in Boronia heterophylla, a native of West Australia. The flowers are similar in shape to the well-known B. megastigma, of a rosy-purple colour, and sweetly scented. It is a free flowerer, and should become a general favourite. Zygopetalum Veitchii × = Z. crinitum × Colax jugosus; the flower partakes of the characteristics of the Zygopetalums, and is remarkable for the large, smooth lip of bluish-white. Several Amaryllis of recent raising came likewise from Messrs. J. Veitch & Sons, but none were considered to be good enough for Certificates. The Bride, a small flower, of almost pure white; and Her Majesty, white flamed with red, were distinct varieties.

A plant of Angræcum citratum came from the collection of F. A. Philbrick, Esq.; the two flower-spikes were well developed, and a Cultural Certificate was awarded to Mr. Heims, the gardener, for the same. Another plant from the same collection was Cypripedium Bartetti × C. barbatum × C. Chantini; the flower was of a port-wine colour excepting the dorsal sepal which possessed blue-purple blotches on a white ground, and stripes of the predominant colour.

H. A. Mangles, Esq., Vale Wood, Haslemere, sent a flowering plant of Rhododendron Falconeri, 2 feet in height, capped with one large truss of bloom. This plant has doubtless been grown out-of-doors, under the peculiar protection afforded the tender species of Rhododendrons at this treasury of the genus.

A fine group of plants in pots of Violet Wellsiana, came from Mr. C. Turner, Slough; the flowers of this desirable sort were very freely produced.

Helleborus colchicus and H. guttatus, as cut flowers, were exhibited by G. F. Wilson, Esq.

Mr. Todman, Rose Park Nurseries, Upper Tooting, showed some few varieties of Indian Azaleas, with small flowers, but we fail to see what useful purpose such poor flowers serve.

A very fine Odontoglossum triumphans, Rosefield variety, came from the garden of De B. Crawshay, Esq., Rosefield, Sevenoaks (Mr. Cook, gr.) This eminently fine variety had two long spikes, well set with the dark brown varnished flowers, orange tipped and marbled. A good form of O. Rossi majus and several other species of Odontoglossum came from the same garden.

Mr. K. Drost, Kew Nurseries, Richmond, assisted the floral display greatly by a group of Spiræa japonica of about 12 feet in diameter, and another of Lily of the Valley. These occupied a good place for observation on the floor of the conservatory. Other items from this nursery consisted of cut Lilac, white and purple, and a new single Tulip. Mr. Drost received a Bronze Medal for his Spiræas.

The fresh-looking Roses in pots from the nurseries of Messrs. Paul & Son, Cheshunt, were much admired. These mainly consisted of Teas and hybrid perpetuals, with a few miniature species, as Pacquerette and Mignonette. A Silver Banksian Medal was awarded for this display. The same nursery supplied flowering plants of Saxifraga Fredrici Augusti; and Lilac Marie Lemoine, a white variety with a dense risp of bloom.

Cyclamens were shown by the St. George's Nursery Company, Hanwell (Mr. Smith, manager). The plants were of the giganteum section, and were full of flower, and well varied, making a showy exhibit. A Silver Banksian Medal was awarded.

Hyacinths were shown by Messrs. J. Veitch & Sons, Chelsea (Silver-gilt Banksian Medal), and Messrs. W. Cutbush, Highgate (Silver Banksian Medal). With the exception of the variety La Belle in the former collection there was nothing that calls for special remark. La Belle as seen on this occasion had a densely set large spike; the bells single, of a pale flesh tint, and the whole plant of a very robust character—a desirable variety.

Narcissus were exhibited by Messrs. Collins Bros. & Gabriel, and Messrs. Barr & Son, in quantity. The flowers in the first-named collection were elegantly shown in Tye's Hyacinth glasses, and bunches of Allium album were interspersed amongst them that told well by their purity of white. A Silver Banksian Medal was awarded.

Messrs. Barr & Sons showed abundantly of Narcissus, Helleborus, small groups of Iris reticulata. Scilla bifolia, Bulbocodium vernum, Galanthus Elwesi, and Anemone fulgens. A Silver-gilt Banksian Medal was awarded.

The exhibits from Mr. T. S. Ware were equally varied, and contained, besides Narcissi, Megasea speciosa, Lachenalia Nelsoni, Freesia refracta alba, Moutan Pæonies, Chionodoxa Luciliæ, Anemones, &c. A Silver Banksian Medal was awarded.

Mr. B. Hartland, Cork, showed a small collection of Narcissus, consisting of the Irish varieties, Ard Righ and N. nanus, the giant form of this species; with these were flowers of N. Tradescanti (the Dutch variety); a pale form of N. nanus, princeps, cernuus, &c.

First-class Certificates.

For Hyacinth La Belle, to Messrs. J. Veitch & Sons.

For Boronia heterophylla, to Messrs. J. Veitch & Sons.

For Zygopetalum Veitchii ×, to Messrs. J. Veitch & Sons.

For Rhododendron balsaminiflorum carneum, to Messrs. J. Veitch & Sons.

For Odontoglossum triumphans, Rosefield variety, to De B. Crawshay, Esq.

Narcissus Committee.

The first meeting this season of the Narcissus Committee was held at South Kensington on Tuesday last, when the chief objects of interest submitted were very good specimens of flowers from roots collected at various times from their native habitats, chiefly in Spain and Portugal, including many forms of Pseudo-Narcissus, triandrus, Corbularia, and natural hybrids. Many of these had been sent home by Mr. George Maw, who also brought some of his own collecting, and described the situations in which they were found growing.

An interesting communication was made by Mr. Threlfall on the rudimentary forms of some organs found in certain varieties, by the presence or absence of which he hoped it might be possible in some cases to distinguish one species from another, and which might prove of assistance in bearing on the question of doubtful hybrids, but as he was still at work on the subject he promised a further communication later on.

Some fine flowers were sent from Ireland, but owing to the severe weather almost all the English ones had been opened under glass, and so could not be reported on. It was determined to hold a meeting on May 10 as well as the two in April (12th and 26th) already advertised.

Fruit Committee.

Present: Arthur Sutton, Esq., in the chair; and Messrs. S. Ford, J. Smith, W. Denning, J. Roberts, G. T. Miles, W. Warren, W. Paul, R. D. Blackmore, P. Crowley, G. Bunyard, J. Woodbridge, J. Burnett, T. B. Heywood, J. Fitt, and Harrison Weir.

Some well-kept Apples came from Mr. S. Ford, gr. to L. A. Wallace, Esq., Leonardslee, Horsham; these varieties were Mère de Ménage, Royal Pearmain, Duck's Bill, Golden Noble, Golden Reinette, Yorkshire Greening, Adams' Pearmain, Lord Burleigh, and a few others.

From W. Roupell, Esq., Harvey Lodge, Brixton Hill, came also Apples grown on bushes, not so large or so bright as Mr. Ford's, but yet sound, of the following kinds:—Annie Elizabeth, North Greening, Cornish Gilliflower, Wellington, London Five Crown Pippin, Lane's Prince Albert, Beauty of Kent, and Bedfordshire Foundling.

Mr. G. Allis, gr. to Major Shuttleworth, Old Warden Park, Biggleswade, showed Lemon Blenheim, Wyken, Sturmer, Orange, and Ribston Pippins. New Hawthornden was a good instance of an early kind keeping till late in the year.

Miscellanea.

A collection of table-glass ornaments from the works of Messrs. J. Green & Nephew, of the Victoria Pottery Galleries, 107, Queen Victoria Street, E.C., contained some novelties in tazzas, bowls, and flower-glasses of great beauty in design, colour, and decoration, especially noticeable being those after the Egyptian style, and named Osiris; and the so-called Burmese, which is coloured rose-red and primrose-yellow,

ROYAL BOTANIC.

March 23.—This first spring show of the Royal Botanic Society, which took place at Regent's Park, was of larger proportions than it has been on many previous occasions. Bulbous plants were well represented, and a generally interesting show was made.

For twelve pots of Narcissi, Mr. J. Douglas, Great Gearies Gardens, Ilford, received the highest award, for pots of fine sturdy plants with clear large flowers —Gloriosa, Her Majesty, and Jaune Suprême being especially fine; Mr. H. R. Wright, Turner Road, Lee, Kent, was 2d; and Messrs. H. Williams & Sons, Fortis Green, Finchley, were 3d, following closely.

Messrs. H. Williams & Sons and Mr. H. R. Wright were the 1st and 2d prizetakers in the nurseryman's class for twelve pots of Tulips, in the order of their names, both showing plants of good substance and with large flowers.

Mr. J. Douglas was the leader in the amateur's class, with a fine lot; 2d being Mr. H. Eason, gr. to B. Noakes, Esq., Hope Cottage, Highgate, with small flowers of good quality.

The same order was observed in the amateur's class for Hyacinths, where a fine show was made, and a close competition.

Mr. Wright and Messrs. H. Williams & Sons respectively received 1st and 2d prizes in the nurseryman's division. Both showed plants with fine spikes and of clear bright colours.

A good show of Lily of the Valley was made by Messrs. H. Williams & Sons, who carried off the 1st prize in this class with well-flowered plants, having the flowers well above the leaves, and evenly opened.

The only exhibitor of pots of Crocuses was Mr. J. Douglas, who, however, staged a representative group, and justly received the 1st prize for them. The same exhibitor was to the fore with Amaryllis, staging fine plants with brilliant flowers, several varieties being very striking; Messrs. Paul & Son, The Old Nurseries, Cheshunt, were 2d, also showing a good collection, which included several new seedlings.

In the class for twelve pots of bulbous plants Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, was the sole exhibitor, and staged an interesting group, including a remarkable looking plant, Scoliopis Bigelowi and Chionodoxas, Narcissi, &c., also Korolkowia (Fritillaria) Sewerzowi.

Mr. J. Douglas staged six very fine plants of Deutzia gracilis, masses of flower, and was awarded the 1st prize in the class for them; while Mr. H. Eason received the 2d for plants which were not such masses of flower. The 3d prize was granted to Mr. G. Wheeler, gr. to Louisa, Lady Goldsmid, St. John's Lodge, Regent's Park, for altogether smaller plants and bearing fewer flowers.

Cyclamens in the amateur's class were best shown by Mr. F. J. Hill, gr. to H. Little, Esq., The Barons, Twickenham, who received the 1st prize for large plants with large flowers of good substance and colour.

Mr. J. Wiggins, gr. to W. Clay, Esq., Grove Road, Kingston, was 2d with evenly flowered smaller plants; he also took 3d in the open class where the 1st and 2d places were respectively taken by Mr. J. Odell, Gould's Green, Hillingdon, and the St. George's Nursery Co., Hanwell, both exhibitors showing well.

The best exhibition of Azaleas was in the amateur class, when Mr. R. Butler, gr. to H. H. Gibbs, Esq., St. Dunstan's, Regent's Park, took 1st honours with largish plants, generally well flowered; Mr. H. Eason was 2d with more evenly trained plants, but bearing fewer flowers.

Mr. H. James, Castle Nursery, Norwood, was 1st in the nurseryman's class, where the 2d place was occupied by Mr. R. Wells, Langton Nursery, Sydenham; 3d, Messrs. J. Todman & Sons, Rose Park Nursery, Upper Tooting, all these groups running closely over each other.

The 1st prize for hardy herbaceous plants was given to Mr. J. Douglas for a collection containing Primula obconica, Fritillarias, Solomon's Seal, and Narcissi; Messrs. Paul & Son, Cheshunt, were 2d, with a group composed of alpines.

Chinese Primulas were well shown, and the 1st prize lot was that of Messrs. H. Williams & Sons, whose large plants were masses of bloom, and very attractive; Mr. J. James, Woodside, Farnham Royal, was 2d, also with good plants, but smaller; 3d, Mr. J. Douglas, who was also 1st for hardy Primulas, with a collection including many types, and was followed by Mr. J. Clement, gr. to L. H. Hicks, Esq., Springfield House, Muswell Hill.

Messrs. Paul & Son, Cheshunt, showed the best lot of forced Roses in pots, staging neat and elegant plants, which bore fine blooms; Mr. W. Rumsey, Joyning's Nursery, Waltham Cross, N., staged smaller plants, and was placed 2d.

Miscellaneous.

Representative groups of Narcissi, Daffodils, &c., were, as usual, staged by Messrs. Barr & Son, King Street, Covent Garden, who received a Large Bronze Medal; Messrs. Collins Bros. & Gabriel, 39, Waterloo Road, London (Bronze Medal); and Mr. T. S. Ware.

Mr. Hill, gr. to H. Little, Esq., was awarded a Bronze Medal for an interesting group of varieties of Lycaste Skinneri, embracing great variety and range of colour.

Good groups of Roses in pots were sent from Messrs. Paul & Son, Old Nurseries, Cheshunt, and Mr. W. Rumsey, both being extensive and of good quality. Large Bronze Medals were awarded in both cases.

An extensive group of Lily of the Valley and Spiræa was exhibited by Mr. Drost, Kew Nursery, Richmond, Surrey, and he was awarded a Certificate.

A large collection of Hyacinths came from Mr. H. R. Wright, and included the leading varieties; it comprised about 150 pots: the spikes were uniformly good and strong. (Large Bronze Medal.)

Messrs. H. Williams & Sons contributed a group of spring flowers, comprising various bulbous plants and Azaleas, &c., very comprehensive and interesting. (Small Silver Medal.) A similar but more extensive group was that of Mr. B. S. Williams, who had Cyclamens, Amaryllis, Hyacinths, &c., in great quantity, and received a Large Silver Medal.

A Large Bronze Medal was granted to Messrs. J. Veitch & Son for a fine collection of Hyacinths with heavily flowered spikes.

Hyacinths and Tulips were also well and extensively shown by Messrs. W. Cutbush & Son, Highgate, who were awarded a Small Silver Medal.

A very interesting and representative group of alpine plants was exhibited by Messrs. Paul & Son, Cheshunt.

Mr. W. May, gr. to F. C. Jacomb, Esq., Stamford Hill, staged a pretty and neat group of Odontoglossums and other Orchids, relieved by Ferns, for which a Bronze Medal was given.

Cyclamens were extremely well shown, groups coming from Mr. Odell and from the St. George's Nursery Co., for which a Bronze Medals was awarded in both cases.

Messrs. W. Paul & Son, Waltham Cross, had a very good collection of the leading varieties of Camellias, both trees in pots and cut flowers, and several plants of Clematis indivisa lobata.

Cinerarias of fine colour and substance were staged in quantity by Mr. J. James, Slough, the plants being masses of clear coloured blooms.

Messrs. J. Cheal & Son, Sussex, staged a good collection of Apples (forty dishes) in good condition.

Certificates.

The following Botanical Certificates were given:—

For Boronia heterophylla (see Royal Horticultural Society's report), to Messrs. J. Veitch & Son.

For Selaginella gracilis, to Messrs. J. Veitch & Sons; resembling a small form of S. Wallichii.

For Oncidium Brunleesianum, to R. B. Lemon, Esq., Sevenoaks; a curious Oncidium, with sepals and petals pale yellow with brownish shading, lip bright yellow with a deep brown blotch in the middle lobe.

Floral Certificates.

For Amaryllis Her Majesty, to Messrs. J. Veitch & Son; large flowers, white with red flushes.

For Amaryllis Hon. and Rev. J. T. Boscawen, to Messrs. J. Veitch & Sons; salmon, with white nerves, medium-sized flowers.

For Amaryllis Titiana, to Messrs. J. Veitch & Sons; palish crimson-red, with white nerve and base; medium size.

For Rhododendron Balsaminiflorum carneum, to Messrs. J. Veitch & Sons. (See Royal Horticultural Society's report.)

For Cineraria Blue Bonnet, to Mr. J. James; dark blue with white centre.

For Cineraria Illuminator, to Mr. J. James; dark purple.

For Cineraria Stella, to Mr. J. James; dark maroon.

For Amaryllis Oriflamme, to Mr. J. Douglas.

For Cyclamen Royal Jubilee, to Mr. J. Odell.

PRESTON and FULWOOD.

March 17 and 18.—The ninth annual exhibition of bulbs and spring-flowering plants took place on the above dates, and was in every way a complete success. The show was held in the New Public Hall, and the display of flowering plants of all descriptions—Azaleas both Indian and Ghent, Cinerarias, Primulas, Spiræas, Dielytras, and bulbs was exceptionally fine—and though a slight diminution

in the number of bulbs shown was observed, the quality was satisfactory.

The treasurer of the Society, J. B. Dixon, Esq., is a thorough lover of spring bulbs, and evidently understands their culture, since he secured, amongst other prizes, premier honours in the following classes:—Twenty-four, twelve, and six single Hyacinths, also the best single Hyacinth in either of the above classes; twenty-four, twelve, and six double Hyacinths, the best spike in these classes; twenty pots of bulbs, corms, tubers, and rhizomes; six and three single Tulips, six and three double Tulips; also several classes of Narcissus—a most meritorious lot of plants. Mr. R. Smith, Mr. W. H. Wilding, and the Misses ffarington showed in some of the above classes, but in no class could they wrest 1st honours from Mr. Dixon.

Mr. E. Payne, Fulwood, and Mr. H. Winwood, Ashton, showed twenty-four singles and twenty-four doubles, and were placed in the order of their names. The trusses on the plants of the first-named exhibitor were very close and compact.

Mr. Payne and Mr. Winwood showed capital groups of plants, and were placed 1st and 2d.

Mr. Payne was 1st for six Azaleas, showing some well-bloomed standards; Mr. H. Winwood, 2d, having, amongst others, A. Borsig, Empress of India, Emperor of Brazil, and Deutsche Perle among his best.

Mr. H. Winwood was 1st with six Roses, having Souvenir d'Elise, John Hopper, Etoile de Lyon, Madame Lambard, and others.

Mr. J. Clark, gr. to Mrs. Birchall, was 1st among the amateurs with Roses, having amongst others A. Colomb, devoniensis, and La France, in good order.

Mr. H. Waters, gr. to J. Eccles, Esq., Farrington House, staged a capital group, and was 1st, beating three other competitors. This was well done—a good back of Palms, Ferns, &c., with some small Crotons, Ferns, Dracænas, relieved with Amaryllis, Anthuriums, and Callas, raised above the lower foliage, was effective and noticeable. Mr. J. B. Dixon was 2d; 3d, Misses ffarington. The last-named was, however, to the fore with miscellaneous foliage and flowering plants, staging six capital specimens, among them being a fine Kentia Förstermanni, which was also awarded the Jubilee Medal, given by Messrs. W. Wood & Son, Wood Green, London.

Some good baskets of cut flowers, stand of flowers, and hand bouquets were shown.

Orchids were numerous and good. The 1st prize for three fell to Mr. C. Parker, who had a good plant of Odontoglossum Rossi majus, Cœlogyne cristata, and Cypripedium villosum.

For a single specimen Mr. H. Waters was 1st, with a good Cœlogyne.

Mr. Swan, gr. to E. G. Wrigley, Howick, staged about three dozen blooms of Cattleya Trianæ, in beautiful varieties.

Mr. W. Troughton, nurseryman, staged a fine group of miscellaneous plants; and Mr. J. Atherton, the Hon. Secretary, also brought a nice group of Cacti and other succulents.

The show was well attended each day, the weather being all that could have been desired.

SCOTLAND.

ROYAL HORTICULTURAL SOCIETY OF ABERDEEN.

The prize schedule of this Society for 1887 has just been issued. The chief feature is the series of Jubilee Prizes to be competed for at the Society's summer show, to be held in Aberdeen in the end of July. There are four prizes for the best table of horticultural produce, 13 × 9 feet, arranged for effect, and the latitude thus allowed ought to secure a large competition. The autumn show is fixed for September, when it is hoped Her Majesty the Queen may patronise the exhibition.

Scottish Horticultural Association.

The tenth annual meeting of this Association was held at 5, St. Andrew Square, on the 1st inst., Mr. Alex. Milne, President, in the chair. There was a very large muster of members. The Secretary's report was a favourable one; the aims and objects of the Association having been furthered by the reading of many instructive papers on important and interesting subjects, and by numerous exhibits of great merit and interest. The Association had also carried to a successful issue a Chrysanthemum show, the best that had yet been held in Scotland. Twenty-seven members had been added to list of the membership, and only two had been lost through death during the year. The Treasurer's report was less satisfactory than could be desired, yet there was no reason for being discouraged. If all the members paid up regularly there would be no lack of funds for every purpose of the Association. The long-cherished desire of the Council that a library should be established in connection with the Association was as far from being realised as ever, owing to the low state of the funds at the disposal of the Council. During the last two or three years a considerable increase of expenditure had been incurred in printing and circulating the *Transactions* of the Association in a more comprehensive form. This had been done chiefly in the interests of members residing at such a distance from Edinburgh as to render their regular attendance at the monthly meetings inconvenient or impossible; but it was a question with the Council whether the funds would continue to bear the strain of such extra expenditure, and the Treasurer earnestly hoped that all members in arrears with their subscriptions would promptly pay them up, so that they might be enabled, not only to continue the issue of the *Transactions* in their present useful form, but also to lay the foundation of a library fund. The income for the year was £27 4*s*., and the expenditure £25 10*s*. The following office-bears for the ensuing year were then elected:—Hon. President, James Buchanan, Esq., Oswald House, Oswald Road; President, Mr. D. P. Laird; Vice-Presidents, Mr. Alexander Milne, and Mr. Malcolm Dunn. Mr. Robertson Munro, Secretary; and Mr. Alexander McKenzie, Treasurer, were each re-elected to their respective offices.

Exhibits on the table were of considerable interest. Mr. Grossart, gardener, Oswald House, exhibited a remarkably well-flowered plant of Lycaste Skinneri alba, showing seven fine flowers from one pseudobulbs. He also showed a fine-coloured form of Odontoglossum triumphans, the pretty and rare O. blandum, several superior forms of O. Pescatorei, and a very handsome Cattleya Trianæ. Mr. McHattie, New Battle Abbey, exhibited a small plant of Pleurothallis scapha with two fine spikes of flower. Mr. R. B. Ferguson, of the Lawson Nursery Company, exhibited a beautiful truss of flower of Rhododendron Campbelliæ, which was justly admired for its brilliant colour, and was new to members present. *W. S.*

THE WEATHER.

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING APRIL 2. (AVERAGE OF THIRTY-THREE YEARS.)

March 27	... ... 44°.4	March 31	... ... 45°.3
„ 28	... ... 44°.5	April 1	... ... 45°.5
„ 29	... ... 44°.7	„ 2	... ... 45°.7
„ 30	... ... 44°.9	Mean for the week	... 45°.0

THE PAST WEEK.

The following summary record of the weather for the week ending March 21, is furnished from the Meteorological Office:—

"The *weather* has continued cold and unseasonable in all parts of the kingdom. Heavy falls of snow were experienced at most of our more southern stations as the period commenced, and slight snow or sleet showers were subsequently of frequent occurrence at nearly all our stations.

The *temperature* has continued below the mean in all districts, the deficit ranging from 4° to 5° in Scotland and in 'Ireland, N.,' and to 7° in 'England, N.E.,' to as much as 10° over eastern, south-eastern, and south-western England. In some parts of the south and south-west of England the thermometer has been lower during this period than it was during any week in the winter. At Stowell the average for the week was only 28°·9, being 13°·4 below the mean for the season. The highest of the maxima, which were registered on the 21st at most of the English and Irish stations and on various dates in Scotland, ranged from 46° in the 'Midland Counties,' 'England, S.,' and 'England, N.W.,' to 53° in 'England, E.,' and 'Ireland, N.' The lowest of the minima, which were recorded on irregular dates, varied from 10° in 'Scotland, N.,' 14° in 'England, S.W.,' and 16° in 'England, S.,' and 'Scotland, E.,' to 22° in 'Scotland, W.,' and 28° in the 'Channel Islands.'

"The *rainfall* has been less than the mean in all districts.

"*Bright sunshine* shows an increase on that reported of late, the percentage of the possible amount of duration ranging from 31 in the 'Midland Counties' to 49 in 'Scotland, N.,' and 'England, S.W.,' and to 54 in the 'Channel Islands.'"

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 42° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature.				
		Accumulated.			
	Above or below the Mean for the week ending March 21.	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 4, 1887.	Below 42° difference from Mean since Jan. 4, 1887.
Principal Wheat-producing Districts.		Day-deg.	Day-deg.	Day-deg.	Day-deg.
0. Scotland, N. ...	4 below	3	45	+ 25	+ 12
1. Scotland, E. ...	5 below	3	53	+ 20	+ 22
2. England, N.E. ...	7 below	0	57	— 22	+ 87
3. England, E. ...	10 below	0	71	— 49	+ 172
4. Midland Cos. ...	9 below	0	71	— 69	+ 156
5. England, S. ...	10 below	0	63	— 28	+ 142
Principal Grazing, &c., Districts.					
6. Scotland, W. ...	5 below	0	44	— 20	+ 37
7. England, N.W. ...	9 below	0	57	— 43	+ 113
8. England, S.W. ...	10 below	0	59	— 97	+ 150
9. Ireland, N. ...	5 below	6	42	— 3	+ 23
10. Ireland, S. ...	8 below	5	47	— 30	+ 70
— Channel Islands	8 below	0	36	— 116	+ 83

Districts.	Rainfall.			Bright Sunshine.	
	More or less than the Mean for the Week.	No. of Rainy Days since Jan. 4, 1887.	Total Fall since Jan. 4, 1887.	Percentage of possible duration for the Week.	Percentage of possible Duration since Jan. 4, 1887.
Principal Wheat-producing Districts.	Tenths of Inch.		Ins.		
0. Scotland, N. ...	5 less	49	10.2	49	22
1. Scotland, E. ...	3 less	34	4.6	47	31
2. England, N.E. ...	1 less	30	2.9	41	30
3. England, E. ...	1 less	25	2.5	42	33
4. Midland Cos. ...	2 less	27	3.1	31	27
5. England, S. ...	1 less	26	3.3	33	26
Principal Grazing, &c., Districts.					
6. Scotland, W. ...	4 less	38	8.5	39	24
7. England, N.W. ...	4 less	30	4.5	44	28
8. England, S.W. ...	2 less	31	4.5	49	33
9. Ireland, N. ...	4 less	38	6.0	34	26
10. Ireland, S. ...	3 less	33	6.7	42	31
— Channel Islands	2 less	34	3.9	54	40

Obituary.

JAMES MILFORD.—The death of Mr. James Milford at Alphington, on Saturday, March 19, carries off in "the fulness of years" a notable landscape gardener. His connection with the nursery of Messrs. Lucombe, Pince & Co., Exeter, extends over a period of nearly forty years, and many who remember that enthusiastic horticulturist, the late Mr. Pince, will recall this hale and hearty old gardener. He was Mr. Pince's right hand, so to speak, in all matters relating to landscape gardening, and two men never better understood each other. A number of the parks and gardens of the western counties, especially along the south coast, owe their beauty in a great measure to their taste and judgment. The ornamental grounds and plantations surrounding Marley Hall, near Exmouth, and the grand old rock garden at the Exeter Nursery are among their best achievements.

LOUIS DE SMET.—We regret to have to announce the death, on March 16, after a short but painful illness, of Charles Louis De Smet, Treasurer of the Syndical Chamber of Belgian Nurserymen, in his seventy-fifth year.

WILLIAM LEECH.—We have also to announce the death, on Tuesday, March 8, at 20, Palace Gardens, Kensington, London, after one day's illness, of William Leech, Esq., in his fiftieth year. The deceased gentleman, who had lived in London for the past three years, will best be remembered for his residence at Oakley, Fallowfield, Manchester. The gardens there were entirely remodelled during his stay; a number of glass ranges were put up, and a good collection of Orchids and other plants were soon gathered together.

Notices to Correspondents.

Intelligent Readers, do please Note *that letters relating to* Advertisements, *or to the supply of the Paper, should be addressed to the* Publisher, and that all communications intended for publication should be addressed to the "*Editor*." Such communications should be *written on one side only of the paper*, and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Beetle: *C. M.* One of the many kinds of weevil. They are most destructive. Trap them with slices of Carrot, or otherwise, at night, and destroy them.

Carpet Bedding: *Handsworth.* Some of the nurserymen's catalogues give plans, *e.g.*, Carter's and Cannell's. See also Thompson's *Gardeners' Assistant*, last edition.

Correction: Cypripedium Gardineri.—In our last issue this name was wrongly spelt. It should be spelt as now given, as the plant was named in honour of Mr. Walter Gardiner, one of our most rising physiological botanists.

French Beans: *C. I.* Many thanks. It is not uncommon for these to have two pods. In your specimens one has become abortive, and acts as a check to the growth of the other, causing it to be curved. The Nepenthes feeds on the juices of the insects it captures.

Hyacinths Rotting: *T. V., Holloway.* The white thread-worms are Anguillula terrestris, very common in moist earth, &c. They would not cause the bulbs to rot, but would assist rotting them when it had once started. Rotting is often started by bruising and sweating; various fungi then grow on and in the injured places. You will see many articles on rotting of bulbs in past numbers of the *Gardeners' Chronicle.*

Icthemic Guano: *W. C.* We will give the substance a trial, and state results.

Ilang Ilang: *C. W. S.* Anonaceæ. Treat it as a stove shrub, and give it bottom-heat.

Leaf of Stove Plant: *W. H. M.* We believe your plant is Passiflora tiliæfolia, but should be glad of a flower in due season. It is certainly not the Tree Tomato.

Names of Fruits: *W. M. P. & Co. Apple:* Yorkshire Greening.

Names of Plants: *T. W.* We cannot undertake to name florists' flowers. You should send them to some large grower.—*H. H.* Impatiens Sultani.—*J. L.* 1, Darwinia tulipifera; 2, Eriostemon pulchellum; 3, Darwinia fuchsioides.—*R. T. H.* 1, Trichopilia suavis; 2, Dendrobium Pierardi; 3, Maxillaria. We do not recognise the species—perhaps it is a variety of M. tenuifolia.—*W. A.* Calanthe Turneri.

Polyanthus: *J. J. Keen.* Other than Douglas' *Florists' Flowers*, there is *Hardy Flowers*, by W. Robinson (Macmillan & Co., London). Apply to any potter in a large way for the glazed ware you want.

Seedling Firs: *E. C. B.* The samples show excellent root-growth and healthy tops. A letter will follow.

Tuberous Begonias from Cuttings: *A. B.* Take the stems as soon as they have grown 2½—3 inches. A thin slice of the root taken with the cutting will facilitate the rooting process. Insert the cuttings singly in thumbs, and place the pots in a case or propagating frame till the cuttings begin to grow, when they must be put in a less warm place and potted on.

White Cattleyas: *E. C.* C. Blunti is entirely white except for a yellow stain in throat; C. crispa delicatissima is nearly pure in colour; C. Percivaliana alba, C. Trianæ Corningii, C. virginalis, a white form of C. Eldorado—these are a few of the many white species and varieties met with in gardens.

Work on Growing Cyclamen: *J. Margottin fils.* There is no special work dealing with the subject, but what has been published is scattered through the whole of the gardening journals of the last twenty years.

Worms in Pots: *L. G. P.* Lime-water, applied in a clear state, will cause the worms to come to the surface. For the patent material sold for the same purpose apply to Corry, Soper, Fowler & Co., 18, Finsbury Street, London, E.C., or to Rutley & Silverlock, Strand.

Communications Received:—W. Sutherland (notes to hand, but delay unavoidable and space not extensible).—De Mar (with thanks).—*Le Moniteur d'Horticulture.*—W. G.—Professor Reichenbach.—Professor MacOwan, Cape Town.—Sir J. D. H.—M. Ch. Joly, Paris.—D. Morris.—W. B. H.—Dr. Watney.—W. Engelmann, Leipsig.—D. C., Orleans.—C. A. J. O., Amsterdam.—R. A. R.—E. J. C. B. Salbris.—G. P.—D. T. F.—W. H.—G. W. W.—E. G. T.—T. C.—T. H. B.—J. R.—A. D.—G. B.—C. R.—H. D.—M. B.—P. G.—W. H. D.—W. M.—H. J. C.—W. H. C.—T. R.—J. B.—J. H. P.—W. W.—J. P.—One not Out of Employment.—C. P.—C. S.—North Berks.—C. R. and Three Under Gardeners.—W. Crump.—J. P.—T. H. B.—Gardeners' Orphanage, various.—W. J. M.—J. G. B.—W. M. B.—G. N.—W. A.—A. B.—J. A.—Wild Rose.—W. B. H.—T. S.—A. H.—P. C.—T. S.—E. G. O. & Co.

Markets.

COVENT GARDEN, March 24.

Prices remain as last week. Business very quiet, with good supplies. *James Webber, Wholesale Apple Market.*

Fruit.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Apple, ½-sieve	1 6– 5 0	Pears, per dozen	2 0– 4 0
— Nova Scotia, brl.	8 0–12 0	Pine-apples, Eng., lb.	1 0– 1 6
Grapes, per lb.	3 0– 8 0	— St. Michael, each	1 6– 6 0
Kent Cobs, 100 lb.	65 0 70 0	Strawberries, per oz.	0 9– 1 0
Lemons, per case	12 0–21 0		

Vegetables—Average Retail Prices.

	s. d. s. d.		s. d. s. d.
Artichokes, per doz.	6 0– ...	Lettuce, Cos., Fr., each	0 8– ...
Asparagus, French, per bundle	30 0– ...	Mushrooms, punnet	1 6– 2 6
— English, per 100	18 0– ...	Mustard and Cress, punnet	0 4– ...
Beans, Kidney, lb.	4 0– ...	Onions, per bushel	4 0– ...
Beet, red, per dozen	1 0– 2 0	Parsley, dozen bunch	8 0– ...
Brussels Sprouts, lb.	0 4– ...	Peas, per quart	6 0– ...
Carrots, per bunch	0 6– ...	Potatos, per cwt.	4 0– 5 0
Cauliflowers, per dozen	3 0– ...	,, kidney, per cwt.	4 0– 5 0
Celery, per bundle	1 6– 2 0	Rhubarb, per bundle	0 6– ...
Cucumbers, each	0 9– 1 6	Seakale, per punnet	2 6– ...
Endive, per dozen	1 0– 2 0	Shallots, per lb.	0 3– ...
Green Mint, bunch	0 9– ...	Spinach, per bushel	5 0– ...
Herbs, per bunch	0 4– ...	Sprue, bundle	1 0– ...
Leeks, per bunch	0 3– ...	Tomatos, per lb.	2 6– ...
Lettuce, per dozen	1 6– 2 0	Turnips, bunch	0 4– ...

Plants in Pots.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz.	6 0–18 0	Ferns, in variety, per dozen	4 0–18 0
Arum Lilies, dozen	18 0–24 0	Foliage plants, various, each	2 0–10 0
Azaleas, per dozen	24 0–42 0	Genistas, per doz.	10 0–12 0
Cinerarias, per doz.	9 0–12 0	Hyacinths, 12 pots	6 0– 9 0
Cyclamens, dozen	12 0–24 0	Lily-of-Val., 12 pots	12 0–24 0
Cyperus, per dozen	4 0–12 0	Marguerite Daisy, per dozen	6 0–12 0
Daffodils, 12 pots	9 0–10 0	Myrtles, per dozen	6 0–12 0
Dracæna terminalis, per dozen	30 0–60 0	Palms, in var., each	2 6–21 0
— viridis, per doz.	12 0–24 0	Pelargoniums, scarlet, per doz.	6 0– 9 0
Epiphyllum, dozen	18 0–30 0	Primula sinensis, per dozen	4 0– 6 0
Erica hyemalis, per dozen	12 0–24 0	Solanums, per dozen	9 0–12 0
— various, dozen	9 0–24 0	Spiræa, per dozen	12 0–24 0
Euonymus, in var., per dozen	6 0–18 0	Tulips, 12 pots	6 0– 8 0
Evergreens, in var., per dozen	6 0–24 0		
Ficus elastica, each	1 6– 7 0		

Cut Flowers.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Arum Lilies, 12 blms.	3 0– 5 0	Mignonette, 12 bun.	3 0– 6 0
Azaleas, 12 sprays	0 6– 1 0	Pelargoniums, scarlet, 12 sprays	0 9– 1 0
Bouvardias, per bun.	0 6– 1 0	Primulas, single, 12 bunches	4 0– 6 0
Camellias, 12 blooms	2 0– 4 0	— double, 12 sprays	1 0– 1 6
Carnations, 12 blms.	1 0– 3 0	Roses, Tea, per doz.	2 0– 4 0
Cyclamen, 12 blooms	0 4– 0 9	— coloured, dozen.	3 0– 6 0
Daffodils, 12 blooms	0 6– 1 6	— red, French, doz.	1 6– 2 0
Eucharis, per dozen	3 0– 6 0	— Saffrano, Fr. doz.	1 0– 1 6
Gardenias, 12 blooms	12 0–30 0	Tropæolums, 12 bun.	1 0– 2 0
Hellebores, or Christmas Roses, 12 bls.	0 4– 1 0	Tuberoses, 12 blms.	2 6– 4 0
Heliotropes, 12 spr.	0 6– 1 0	Violets, 12 bunches	1 6– 2 0
Jasmine, white, bun.	0 6– 0 9	— Parme, French, per bunch	3 0– 4 6
Lilies of the Valley, 12 sprays	0 9– 1 6	— Czar, Fr., bunch	1 6– 2 0
Marguerites, per 12 bunches	3 0– 6 0		

SEEDS.

London: *March* 23.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., report that the attendance of buyers on to-day's market was rather thin. For Clover and grass seeds there is a steady consumptive demand, and prices all round continue at the remarkably low level previously noted. Of home-grown red Clover seed the supply has been falling off, and choice samples of some are consequently held for somewhat higher prices. Foreign parcels, however, are still unusually cheap. There is no change this week in either Alsike, white or Trefoil. Spring Tares sell freely on former terms. For bird seeds the inquiry is meagre. Rape seed keeps firm. There is more doing in blue Peas.

FRUIT AND VEGETABLES.

Columbia (East London): *March* 23.—There have been fairly good supplies of all kinds of vegetables, the demand, however, was rather languid. Prices:—Savoys, 6*s.* to 10*s.* per tally; Turnip-tops, 1*s.* 6*d.* to 2*s.* 6*d.* per sieve; Brussels Sprouts, 2*s.* 6*d.* to 4*s.* do.; Sprouting Broccoli, 2*s.* to 2*s.* 6*d.* do.; Cauliflowers, 1*s.* to 2*s.* 6*d.* per dozen; Greens, 2*s.* to 2*s.* 6*d.* per dozen bunches; Carrots, 1*s.* 6*d.* to 2*s.* do.; Turnips, 1*s.* 6*d.* to 2*s.* do.; Celery, 6*d.* to 8*d.* per bundle; Beetroots, 4*d.* to 6*d.* per dozen; Onions (English), 5*s.* to 5*s.* 6*d.* per cwt.; foreign do., 3*s.* 6*d.* to 4*s.* 6*d.* per bag; Carrots, 13*s.* to 24*s.* per ton; Mangels, 11*s.* 6*d.* to 13*s.* 6*d.* do.; and Apples, 12*s.* to 20*s.* per barrel.

POTATOS.

King's Cross Station: *March* 21.—The following are the ruling prices of the yard for the week ending March 19:—Magnum Bonums, good samples:—Bedfords, 65*s.* to 75*s.*; do. Blackland, 60*s.*; do. Lincolns, 60*s.* to 67*s.* 6*d.*; do. Kents, 70*s.* to 75*s.*; do. Yorks, 80*s.* to 85*s.*; do. Scotch, grey soil, 70*s.* to 85*s.*; do. do., red soil, 90*s.* to 100*s.* per ton. Regents, good samples:—Lincolns, 70*s.*; do. Kents, 80*s.* to 90*s.*; do. Yorks, 75*s.* to 80*s.*; do. Scotch, grey soil, 70*s.* to 75*s.*; do. do., red soil, 80*s.* to 90*s.* per ton. Beauty of Hebron, good samples:—Lincolns, 100*s.* to 110*s.* per ton. Champions, good samples:—Lincolns, 60*s.* to 65*s.*; do., Kents, 65*s.* to 70*s.*; do., Scotch, grey soil, 60*s.*; do. do., red soil, 65*s.* to 70*s.* per ton.

During last week 523 trucks arrived at King's Cross, and 502 were emptied; 94 arrived to-day, and 704 trucks are in stock. There is a short supply of the following:—Magnums, Blackland, and bright red soil. There is a good supply of Regents, but they do not appear to be wanted.

I would advise covering the tops of all waggons with a thick layer of straw, to prevent frost, &c., from touching the Potatos, because if they get even slightly chilled, it makes a great alteration in the price they fetch. *F. W. Foord.*

Borough and Spitalfields: *March* 22.—Moderate supplies and quiet trade. Quotations:—Regents, 70*s.* to 110*s.*; Magnum Bonums, 60*s.* to 90*s.*; and Champions, 50*s.* to 80*s.* per ton.

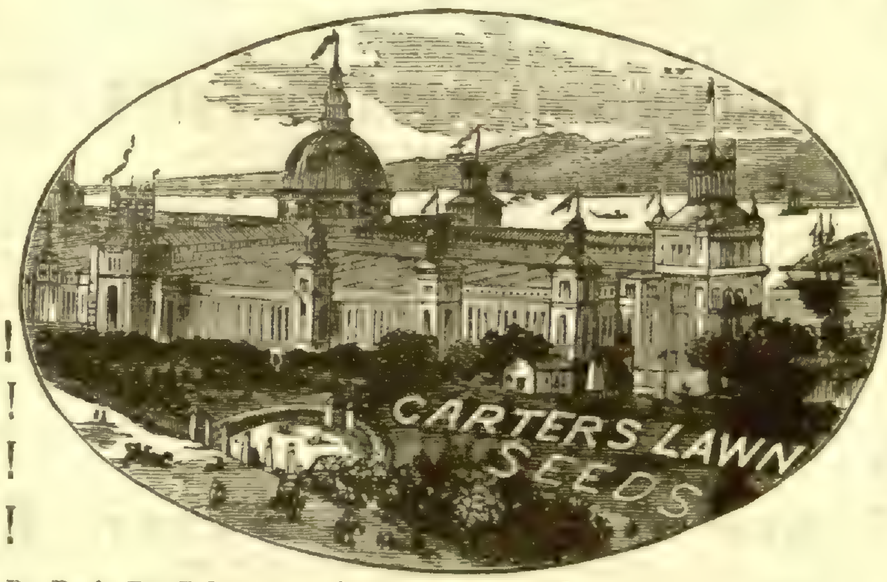
SOW DURING
MARCH AND APRIL,
DAMP AND SHOWERY WEATHER
BEING PREFERABLE.

CARTERS' PERMANENT AND BEAUTIFUL LAWNS

TO FORM A
CLOSE, VELVETY,
AND
ELASTIC TURF.

CARTERS'
INVICTA
LAWN SEEDS.

Used at all the LEADING EXHIBITIONS!
USED BY ALL THE LEADING CLUBS!
USED FOR ALL THE BEST LAWNS!
SHOULD BE SOWN BY EVERYBODY!



CARTERS'
GRASS SEEDS *for*
TENNIS GROUNDS.

CARTERS' LAWN SEEDS HAVE NEVER BEEN BEATEN in OPEN COMPETITION.
At the Great Paris Exhibition Carters' Gold Medal Lawns beat Thirteen Competitors.

	Per Bush. of 25 lb. s.	d.	Per Gal. of 3 lb. s.	d.	Per lb. s.	d.
CARTERS' Invicta LAWN SEEDS (with Clover) ...	25	0	3	3	1	3
CARTERS' Invicta LAWN SEEDS (without Clover)	22	6	3	0	1	3
ORDINARY LAWN GRASS SEEDS (with Clover) ...	20	0	2	9	1	0

ALL PARCELS ARE SENT Carriage Free.

	Per Bush. of 25 lb. s.	d.	Per Gal. of 3 lb. s.	d.	Per lb. s.	d.
CARTERS' GRASS SEEDS for TENNIS GROUNDS...	20	0	2	9	1	0
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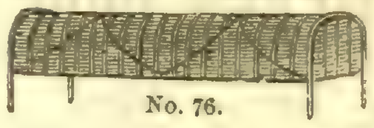
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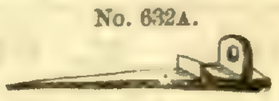

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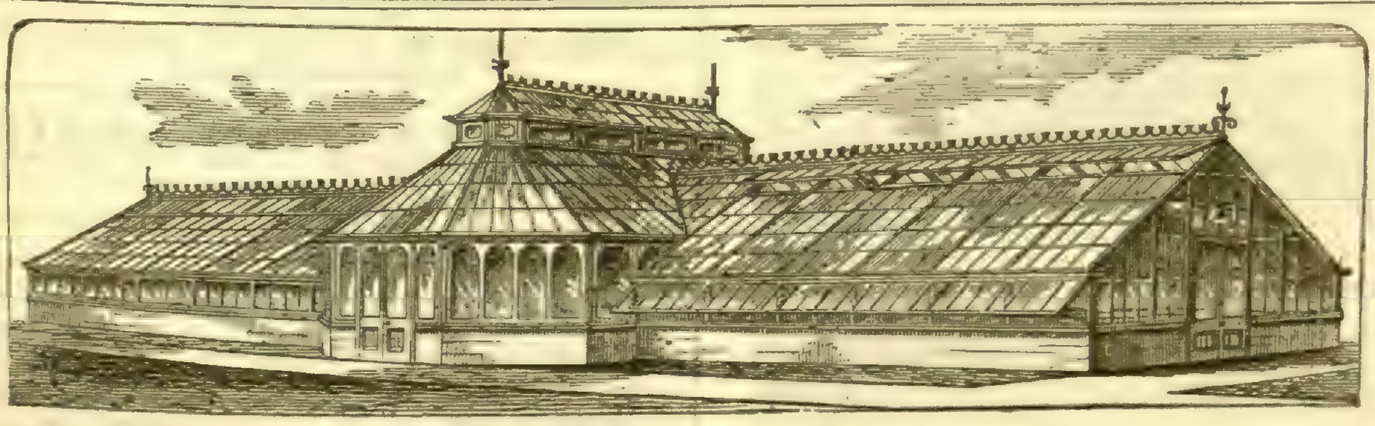

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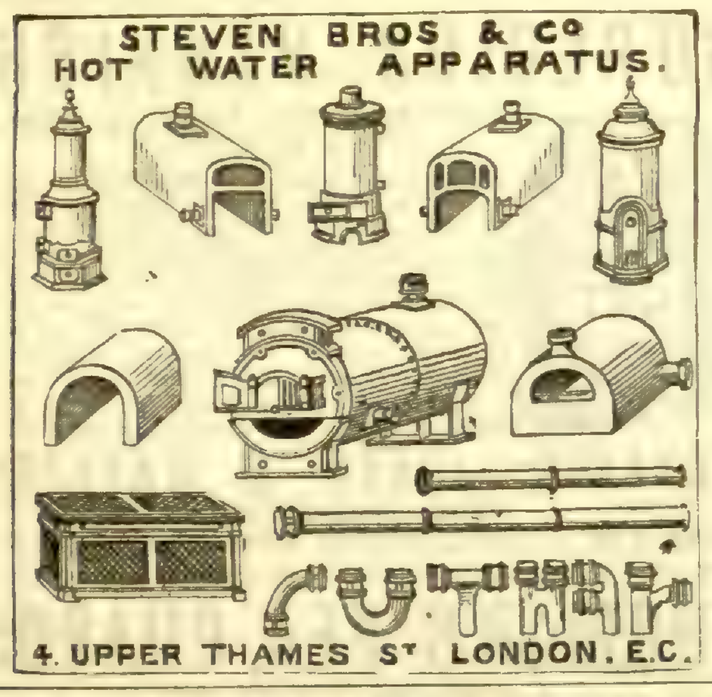

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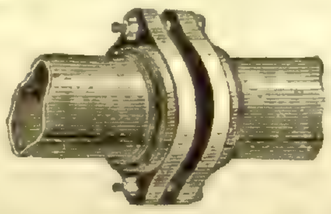

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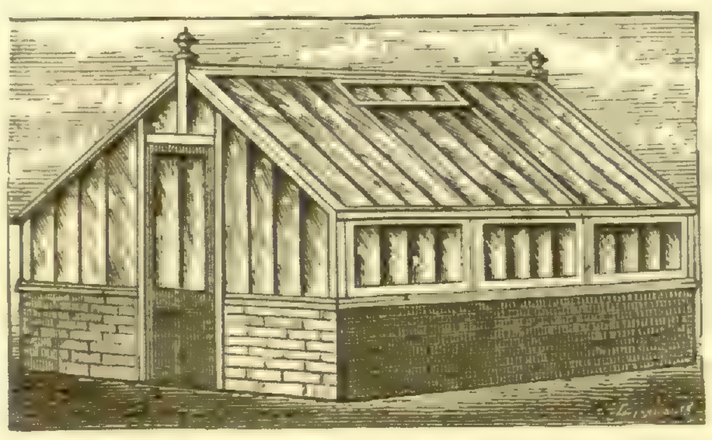

Length.	Width.			Length.	Width.		
10 by	8 ft.	£7	7 0	30 by	12 ft.	£23	19 6
15 by	10 ft.	11	15 0	40 by	14 ft.	34	9 0
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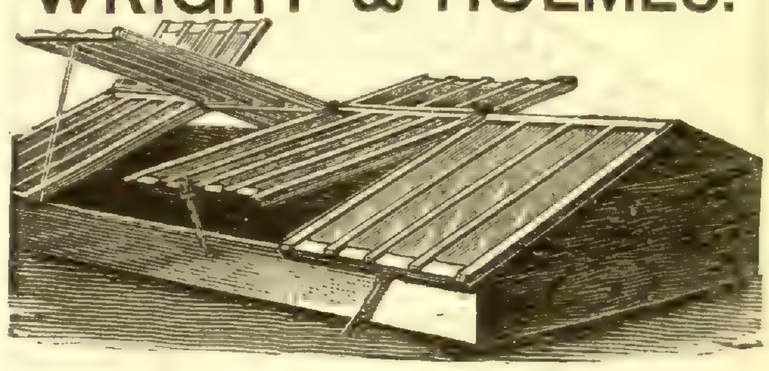

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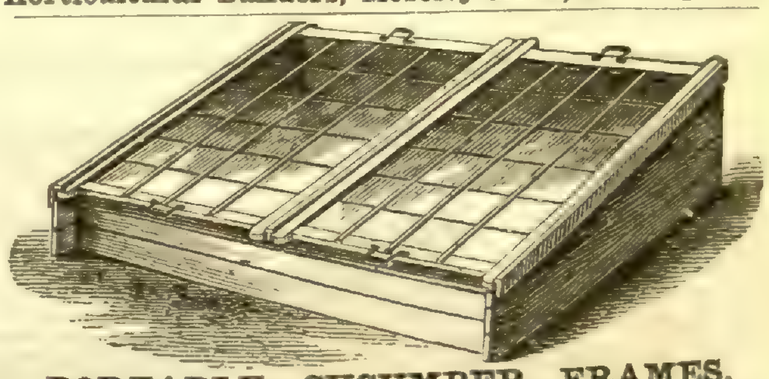

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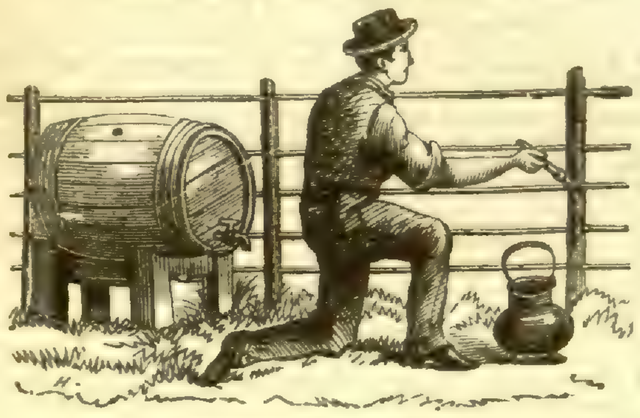

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GARDENER (Head); age 29.—H. W. Ward, Gardener to the Right Hon. the Earl of Radnor, Longford Castle, Salisbury, can with confidence of his giving satisfaction, recommend his Foreman, Henry Dunkin, to any Lady, Nobleman, or Gentleman requiring the services of a thoroughly practical man in every branch of Gardening. He is a very energetic and highly respectable man, and quite competent to Manage a First-class Gardening Establishment.

GARDENER (Head); age 29.—Mr. Vinden, Harlaxton Hall, Grantham, Lincolnshire, can with confidence recommend a good practical, trustworthy man as above. Competent to Manage a good place. Fifteen years' practice in Early and Late Forcing, Fruit and Plant Growing, Flower and Kitchen Gardens, and the general requirements of a good establishment.—For full particulars please address as above.

GARDENER (Head); age 32, married, one daughter.—T. Griffin, three years Gardener to Sir A. J. Adderley, K.C.M.G., is open to treat with any Nobleman or Gentleman requiring the services of a First-class Gardener, who thoroughly understands his business, and is not afraid of exerting himself. Has been a successful Exhibitor, is thoroughly energetic and persevering. Leaving present situation at own request. Character of the highest order.—Davenport House Gardens, Bridgnorth, Shropshire.

GARDENER (Head); age 27.—Mr. J. Ireland can with the utmost confidence recommend his late Foreman (E. Orpet) to any Nobleman or Gentleman requiring a thoroughly practical Gardener. Well experienced in the Cultivation of Orchid, Stove and Greenhouse Plants and Fruit; equally efficient at Flower and Kitchen Gardening, and the requirements of a large establishment.—Nostell Priory, Wakefield.

GARDENER (Head Working), where three or more are kept; for April.—Age 26, practical; well recommended.—W. SPEED, St. Ives, Bingley, Yorks.

GARDENER (Head Working).—Age 42; thoroughly practical in all branches. Nine years' character. Highly recommended.—W. J. W., 3, Fern Cottages, Feltham, Middlesex.

GARDENER (Head Working).—Married, no family; thoroughly practical. Wife good Plain Cook or Cook and Housekeeper. Good references.—G., 6, Percy Terrace, Ravenswood Road, Balham, S.W.

GARDENER (Head Working), where two or more are kept.—Age 28; fifteen years' good practical experience in all branches. Two and a half years' character. —H. KENTEN, 34, Adelphi Road, Epsom, Surrey.

GARDENER (Head Working).—Robert Bass, for the last twelve years Foreman and Head Gardener to Robt. Heath, Esq., Biddulph Grange, Congleton, is at liberty to engage with any Lady or Gentleman requiring the services of a good practical all-round Gardener.—Address as above.

GARDENER (Head Working), in some Lady's or Gentleman's establishment, where two or three more are kept.—Thoroughly competent in all branches of the profession. Nineteen years' experience. Five years' first-class character from present situation.—BENTLEY, The Wild Garden, Furze Hill, Brighton.

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GARDENER (Head Working), married, no family.—The Advertiser is at liberty to engage with any Lady or Gentleman requiring the services of a good practical man. Well up in the profession. Twenty years' experience. Four years' good character.—J. C., 2, Henley Cottage, Battersea Rise, S.W.

GARDENER (Head Working), age 31, married, one child.—A Gentleman can highly recommend his late Head Gardener, J. Gore, to any Lady or Gentleman requiring the services of a man thoroughly experienced in Stove and Greenhouse Plants, Fruit, Flower, and Kitchen Gardening, and the Management of a good Garden.—69, Ashford Road, Eastbourne.

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GARDENER; married.—Thomas Perkins & Sons, 34, Drapery, Northampton, would be pleased to recommend a thorough good all-round Gardener; highly respectable, with twenty years' experience. Good references.

GARDENER, where one or two are kept.—Has had good experience in large first-class establishments. Good reference.—J. WILLIS, The Gardens, Knightshayes Court, Tiverton, Devon.

GARDENER.—Age, 40, married four children; thoroughly understands his business. Fifteen years' last situation. Personal character. Left through death.—A. MOBBS, Gardener, Northcote, Tunbridge Wells.

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GARDENER (good Single-handed), or where help is given.—Age 26; married when suited. Thoroughly experienced in all branches. Good references from present and previous employers.—W. SMITHERS, 2, Burma Road, Green Lanes, Stoke Newington, N.

GARDENER (Single-handed).—Age 24; thoroughly understands Fruit, Flowers, and Vegetables. Nine years experience and good character.—R. H. L., Poulton House, Hampton, Middlesex.

GARDENER (Single-handed, or under good man).—Age 37, married, one child; eleven years' experience in present situation. Highly recommended by a Lady.—MILNS, Welton, South Lincolnshire.

GARDENER (Single-handed, or Second). Age 28; fifteen months' character from last place; two and a half years from former.—F. K., 2, Norfolk Place, Child's Hill, London, N.W.

GARDENER (Single-handed, or Second, where three or four are kept).—Age 23; good knowledge of both Inside and Out. Good character. Abstainer.—A. F., 61, Tanfield Road, Croydon.

GARDENER (Second), in a good establishment, or Head where two or three others are kept.—Married, no family; four years' good character.—G. SMITH, Gothic Cottage, The Thicket, Maidenhead.

GARDENER (Second), where three or four are kept.—Age 24, single; good character. Please to state wages given.—F. WALKER, Hingham, Attleborough.

GARDENER (Second), where four or more are kept.—Age 25; seven years' experience Inside and Out. Good character.—A. BEARDSMORE, Guilsborough, Northampton.

GARDENER (Second), in a good establishment.—Age 25; married, eleven years' first-class experience in all branches. Good references.—R. D., 49, Gayton Road, Hampstead, N.W.

GARDENER (Under), in a Gentleman's Garden.—Age 18; slight knowledge.—G. CARTWRIGHT, Sibsey, Boston.

GARDENER (Under).—Age 25; seven years' experience Inside and Out. Good character.—C. M., 6, Salisbury Terrace, Percival Road, Enfield.

GARDENER (Under), where two or more are kept.—Age 19.—GEORGE POWELL, The Gardens, Whitmore Hall, Newcastle, Staffordshire.

GARDENER (Under).—Age 30, married; good Kitchen Gardener and Pleasure-ground Man. Wife good Laundress.—J. C., 55, Temperley Road, Balham, S.W.

GARDENER (Under), where one or two are kept.—Age 19, single; Greenhouse Work preferred.—T. W. JUDSON, Britannia Mills, Colwick, Notts.

GARDENER (Under).—Age 18; good character.—C. GREEN, The Hermitage, Sutton, near Hounslow, Middlesex.

GARDENER (Under); age 19.—A Clergyman can recommend a steady and industrious young man. Six years' good character.—J. SMITH, Burley, Oakham.

GARDENER (Under).—Age 18; willing to make himself useful. Four years in Garden. Two years' good character from present situation.—C. C., 6, Raeburn Street, Brixton, S.W.

GARDENER (Under), in the Houses or Kitchen Garden.—Age 21; six years' excellent character.—Apply, stating full particulars, to J. KEFFORD, 42, Port Vale, Hertford.

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FOREMAN, in a good establishment.—Age 28; good practical experience in Plant and Fruit Houses, including House and Table Decorations. Very highly recommended. Two years in last situation as Foreman.—T. DENNES, The Gardens, Oakley Park, Scole, Norfolk.

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To Market Nurserymen.

FOREMAN PROPAGATOR or GROWER.—Well up in Growing Plants, Ferns, and Cut Flowers, for Market. Well recommended.—W., 12, Ross Villas, Richmond, S.W.

To Nurserymen.

PROPAGATOR and FOREMAN, Indoors.—Age 25; eleven years' experience in good houses. Good Salesman. Fair knowledge of Trees and Shrubs.—J. WINSER, Nursery, Coleraine, Ireland.

PROPAGATOR and GROWER, or WORKING FOREMAN in a small Nursery.—Age 28; fourteen years' experience. Good references.—H. EDEN, 2, Ivy Cottages, New Road, King's Norton, Birmingham.

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JOURNEYMAN (First), in a good establishment.—Age 23; eight years' experience in good places. Highly recommended.—J. BAILEY, Black House Farm, Thorpe, Chertsey, Surrey.

To Head Gardeners.

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JOURNEYMAN, in a large establishment, or FOREMAN where five or six are kept; age 22.—Robert Frisby, Gardens, Worden Hall, Preston, will be pleased to recommend a thoroughly good man. Two and a half years in present situation.

JOURNEYMAN, in the Houses.—G. Lucas, The Gardens, Peasmarsh, Sussex, wishes to recommend a sharp, industrious, trustworthy young man as above.

JOURNEYMAN, in the Houses, under a Foreman.—Age 24; two years' good character, eight previous.—EDWARD ASHWELL, Marhanger, Sandy, Beds.

JOURNEYMAN, in the Houses, in large establishment.—Six years' experience. Excellent references.—State wages, &c., to J. SHAW, Wakefield Lodge, Stony Stratford, Bucks.

JOURNEYMAN, in the Houses, under a Foreman preferred.—Age 21; good character. Would not object to a good Inside and Out.—W. CHEDGEY, The Gardens, Holmwood Park, Dorking.

JOURNEYMAN, in a good establishment.—Age 25; good references from present and previous employers. Bothy preferred.—F. METHERELL, Gardens, Thorpe Lee, Egham.

To Head Gardeners.

JOURNEYMAN, Inside; age 20.—J. Trigger, The Gardens, Milton Park, Peterborough, can highly recommend Samuel Watkins to any Head Gardener requiring an active and industrious young man as above.

IMPROVER, in a large Garden.—Age 18; four years' experience. Good references.—T. J. DENNIS, 10, Wellington Street, Silver Hill, St. Leonards-on-Sea.

IMPROVER; age 19.—I can with confidence recommend a strong young active man. Has lived here three and a half years. Willing and obliging. Strictly temperate.—GARDENER, The Rookery, Nantwich.

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IMPROVER, under Glass, where Early Forcing is done.—Age 21; five years' experience. Give Premium. Good character. Bothy preferred.—HEAD GARDENER, Chacombe Priory, Banbury.

IMPROVER, in a Gentleman's Garden, Houses preferred.—Age 19; good character. Five and a half years in present situation.—FRANK FAYERS, Islington Hall, King's Lynn, Norfolk.

IMPROVER, in the Houses; age 17.—Mr. Nash wishes to recommend a youth as above. Over four years in present situation.—ALFRED SMITH, The Gardens, Bryngwyn, Herefordshire.

IMPROVER, in a Gentleman's establishment.—£5 Premium will be paid for a term of two years; has served two years' apprenticeship. Excellent character.—F. KEMP, Chithurst, Petersfield, Hants.

TO NURSERYMEN.—Situation wanted as Second under Foreman, in Fruit, Rose, and Herbaceous Department; age 20. Four years good character from present employer.—F. J., 17, Singapore Road, Ealing Dean, W.

TO PROPAGATORS and GARDENERS, &c.—Advertiser (age 28), well up in Propagating and Growing, Producing Cut Bloom, Roses, Tomatos, Cucumbers, &c., desires a situation. Can take charge if required. Northern counties preferred. Good character.—W., 24, Holland Street, Accrington.

TO NURSERYMEN.—A situation wanted Outdoor. Age 23. Six years' good experience in Budding and Grafting. Please state wages.—H. P., G. Cooper, Ivy Cottage, Nursery Road, Sunbury, Middlesex.

TO NURSERYMEN.—Advertiser would be glad to hear of a situation in a Market Nursery. He has had several years' experience in the Houses, and is well up in Propagating, &c. Industrious and willing. Good references.—J. J., 10, Florence Terrace, Denmark Street, Plaistow.

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Seed Trade.

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Seed Trade.

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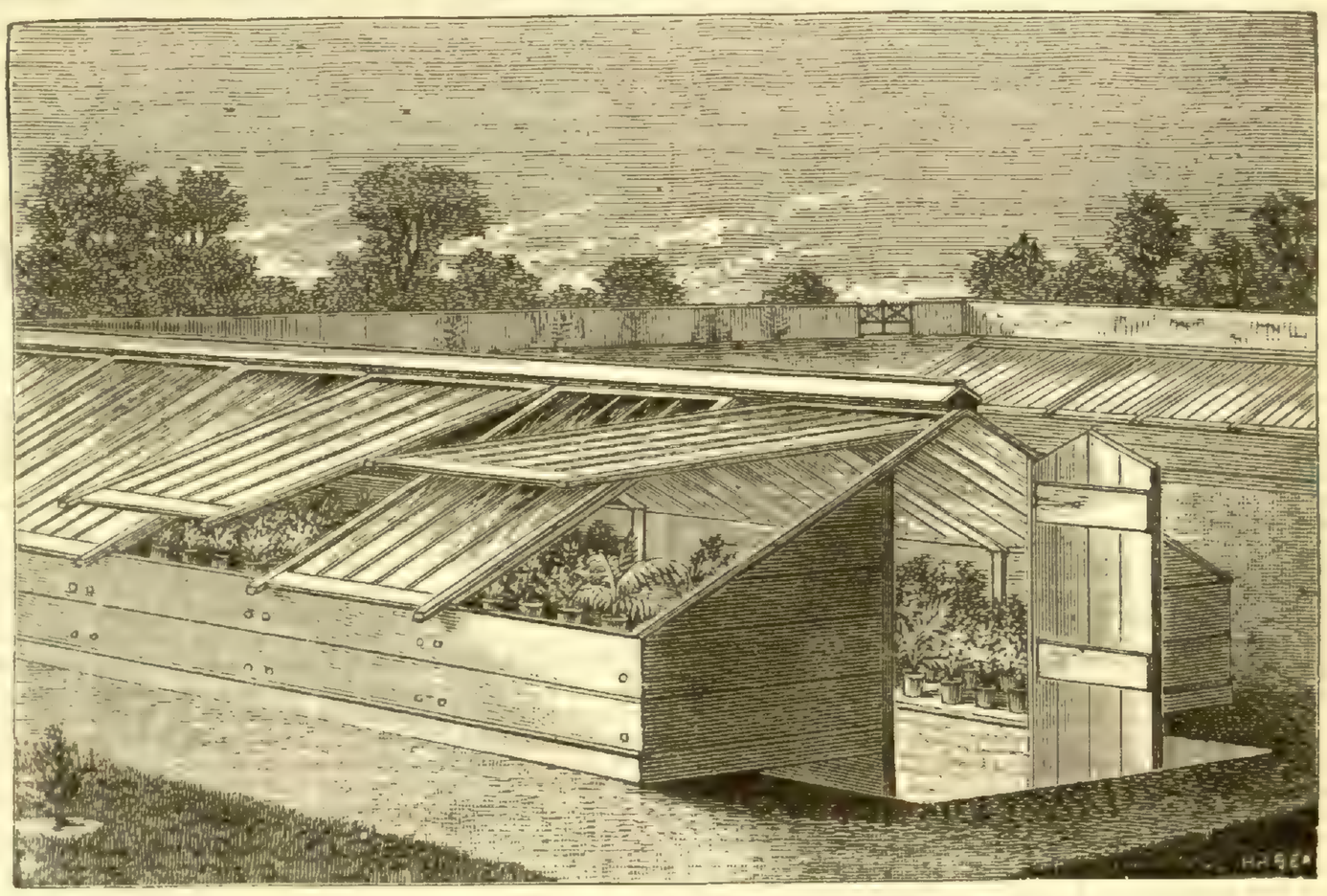

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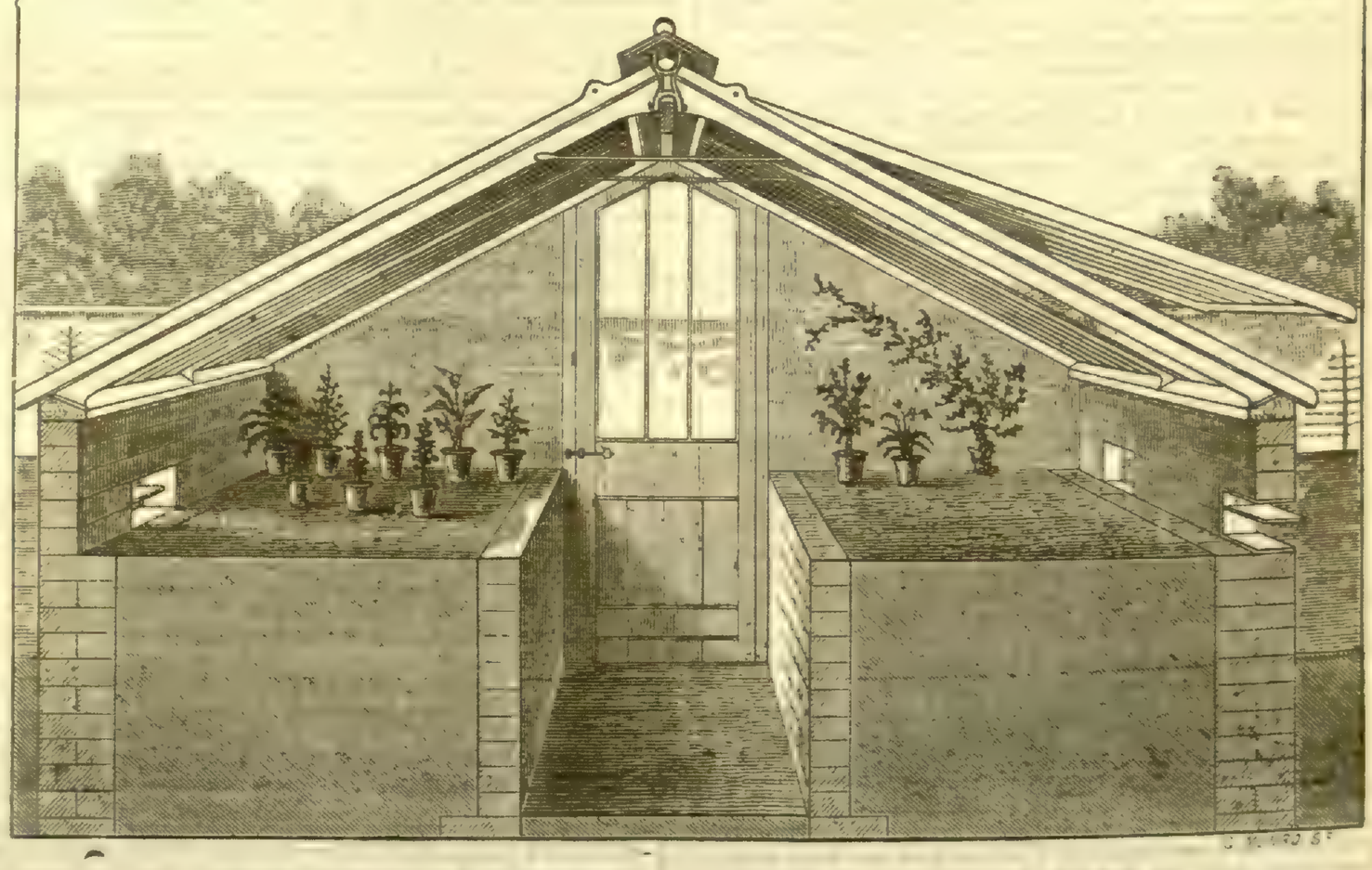

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NOTICE TO ADVERTISERS.

FRIDAY NEXT, *April* 8, *being* GOOD FRIDAY, *the* "GARDENERS' CHRONICLE" *will be published on* THURSDAY, *April* 7.

ADVERTISEMENTS *for* NEXT WEEK *must therefore reach the Office not* LATER *than* WEDNESDAY MORNING, *April* 6.

CONTENTS.

Amaryllis at Veitch's ... 448
" hybridisation ... 457
Adiantums, a decade of new 447
Birmingham and the Queen's visit 453
Botanical Magazine ... 450
Clibran's nurseries ... 455
Cypripedium doliare × ... 447
" lineolare × 447
" vexillarium × ... 456
English Tobacco Culture 452
Flower garden, the ... 450
Fritillaria Sewerzowii var. bicolor 456
Frost, a wet 458
Fruits under glass ... 454
Forestry 456
Foreign correspondence . 457
Gardeners' orphan fund, the ... 453, 458
" Royal Benevolent Institution ... 453
Gardening appointment 466
Hardy fruit garden ... 450
Herbaceous border ... 449
Hyacinths at Garaway's nurseries 453
Kew, Hellebores at ... 453
Kitchen garden, the ... 456
Narcissus, leaf-twisting of 454
New inventions 457
Obituary :—
Eichler, Professor ... 454
Greig, General ... 454
Kickx, M. J. J. ... 453
McHutcheon, Mr. J. ... 458
Orchid notes and gleanings 455
Orchids at Cheltenham... 448
" Indian 449
Pogogyne nudiuscula ... 447
Rural economy 453
Saccolabium Pechei ... 447
Schomburgkia marginata var. immarginata ... 447
Scilly Isles 452
Societies :—
Crystal Palace 458
Spring flowers 453
" " at Williams' ... 448
Strophanthus Ledienii ... 447
Toxicophlæa Thunbergi 458
Tritoma caulescens ... 447
Tropical fruits at Kew Museum 445
Violet Wellsiana ... 457
Weather 459
" in the west ... 457
West Lynn Vineyard ... 457

ILLUSTRATIONS.

Cypripedium vexillarium × 456
Dracænas at Tresco. See Supplement.
Fritillaria Sewerzowii var. bicolor 457
Tobacco drying house 451
" Big Frederick seed leaf 449
" Kentucky seed leaf 448

NOTICE TO SUBSCRIBERS.—All Numbers of the "Gardeners' Chronicle" from January 1 *of this year are still to be had.*

ROYAL HORTICULTURAL SOCIETY.—NOTICE.—Fellows are informed that they may obtain Volume VIII. of the JOURNAL of the above Society entitled THE FROST REPORT on the effects of the severe Frosts on Vegetation during the winters of 1879-80, and 1880-81. By the Rev. George Henslow, M.A., F.L.S., F.G.S., free of charge on application to the Secretary, Royal Horticultural Society, South Kensington, S.W.

BATH and WEST of ENGLAND and SOUTHERN COUNTIES ASSOCIATION. DORCHESTER SHOW, MONDAY, May 30, 1887. Prizes will be given for ORCHIDS as usual this year. For further particulars apply to Hon. and Rev. J. T. BOSCAWEN, Lamoran Probus, Cornwall.

NEWCASTLE-ON-TYNE FLOWER SHOWS. SPRING SHOW, APRIL 20 and 21, Town Hall. GREAT AUTUMN SHOW, AUG. 30 and 31, and SEPT. 1. Royal Jubilee Exhibition Grounds. Jubilee Prizes for Fruit, £50 for 50 dishes, and other large Prizes. For Schedules, &c., apply to JAS. J. GILLESPIE, Secretary. Cross House Chambers, Newcastle-on-Tyne.

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GRAPES THIS YEAR.—Extra strong Canes. Special prices and names on application. JAMES DICKSON AND SONS, "Newton" Nurseries, Chester.

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SQUELCH AND BARNHAM, North Row, Covent Garden, W.C., are OPEN TO DISPOSE OF any quantity of MUSCATS and BLACK GRAPES, TOMATOS, FRENCH BEANS, STRAWBERRIES, CHOICE FLOWERS, &c. Highest Market Prices obtained; Account Sales daily, Cheques weekly or as preferred by Sender. Baskets and Labels supplied. References given.

WANTED, CARNATIONS and PINKS, named sorts, in quantity; also Fancy Tricolor GERANIUMS, Silver and Gold. Lowest cost price per 100. Address Z. Z., *Gardeners' Chronicle*, Office, 41, Wellington Street, Strand, W.C.

WANTED, Maidenhair FERN, in a large quantity, for planting a Fernery. State quantity and lowest price to Mr. STEDALL, The Chestnuts, Denmark Hill, S.E.

WANTED, CROTON, good large specimen yellow-foliage variety, bush-shape, evenly balanced. State size and price to The GARDENER, Queen's Road, Coventry.

WANTED, Large Specimens of KENTIAS, SEAFORTHIAS, LATANIAS, ARECAS, &c. Good prices given for plants 9 feet and upwards per 100; 15 to 30 gs. offer for good Kentias, 9 feet and upwards. Address, W. WEEKS, 440, Fulham Road, S.W.

WANTED, tall PALMS, for cash. Particulars to ROBERT GREEN, Floral Establishment, Crawford Street, W.

WANTED, large PALMS, TREE FERNS, and other large ORNAMENTAL FOLIAGED PLANTS, in EXCHANGE for ORCHIDS or other PLANTS. Send full particulars. The LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, The Vineyard, Garston, Liverpool.

WANTED, Tall Feathery PALMS—Arecas, Seaforthias, and Kentias; DRACÆNAS and CYCAS REVOLUTA.—State size, number of leaves, &c., to WILLIAM ICETON, Putney Park Lane, Putney, S.W.

SUTTON'S PRIZE LAWN GRASS SEEDS. Awarded SPECIAL GOLD MEDAL, Melbourne, 1880-81; and Diplôme d'Honneur, Amsterdam, 1883.

SUTTON'S PRIZE LAWN GRASS SEEDS.—Messrs. Sutton's Prescriptions of Lawn Grass Seeds have been in use for upwards of half a century, and have always given the greatest satisfaction. *Vide* testimonials below.

SUTTON'S PRIZE LAWN GRASS SEEDS.—For GARDEN LAWNS. Per bushel, 22*s.* 6*d.*; per gallon, 3*s.* "It gives me great pleasure to compliment you on the excellent quality of the Grass Seed supplied by you for the St. Agnes Park. It is now really looking splendid, and is admired by all who see it. A great many are slow to believe it is a piece of Lawn from seed sown in March last. It greatly surpasses laying down turf."—Mr. R. RADFORD, Gardener to the Rev. J. M. Wilson, Clifton College.

SUTTON'S PRIZE LAWN GRASS SEEDS.—For TENNIS GROUNDS and BOWLING GREENS. Per bushel, 22*s.* 6*d.*; per gallon, 3*s.* "Our Tennis Ground from a mixture of your Grasses is greatly admired; it is so very clean."—Mr. JOS. KETTLE, Gardener to J. R. White, Esq., Leighton.

SUTTON'S PRIZE LAWN GRASS SEEDS.—For SHADED LAWNS. Per bushel, 22*s.* 6*d.*; per gallon, 3*s.* "The Lawn Grass Seeds I received from you early this spring have come up well, and look such a beautiful green, quite a contrast to the other part of the Lawn surrounding it. The Lawn is quite shaded by large trees."—Mr. H. M. BUTCHER, Gardener to W. Chadwick, Esq., Ponders End.

SUTTON'S PAMPHLET on the FORMATION and IMPROVEMENT of LAWNS from SEED. Gratis and Post-free on application.

SUTTON AND SONS, SEEDSMEN by Royal Warrants to H.M. the Queen and H.R.H. the Prince of Wales, ROYAL BERKS SEED ESTABLISHMENT, READING.

Fedigree Seedling Tea Rose,
PRINCESS BEATRICE. Offering now for the first time, A selection of the best New French ROSES for this season; also The Bride, Clara Cochet, William F. Bennett. Descriptive LIST post-free. H. BENNETT, Pedigree Rose Nursery, Shepperton, Middlesex.

Pedding Begonias.
JOHN LAING AND CO. have a grand stock of Tubers, carefully and specially selected to colour for bedding from our outdoor beds last summer, three shades of crimson, orange-scarlet, magenta, pink, rose, scarlet, white, &c. Per dozen, post-free, 6*s.* Cultural Directions in CATALOGUE. JOHN LAING AND CO., The Nurseries, Forest Hill, S.E.

The Choicest Specimens of Evergreen TREES and SHRUBS.
RICHARD SMITH AND CO. beg to announce that they have just published a little LIST in which they offer the above at prices practically within the reach of all, and they will be happy to send same free by post. St. John's Nurseries, Worcester.

To the Trade.
BEFORE Ordering PALM SEEDS Write for Special Low Offer to H. DAMMANN, Jr., Breslau, Germany. Best references. Guarantee for germinating.

Strawberries a Specialty.
LOVEL'S STRAWBERRY PLANTS, 100, 2*s.* 6*d.*; 500, 10*s.*; 1000, 15*s.* Sample and Pamphlet, 3*d.* Select LIST free. W. LOVEL AND SON, Strawberry Growers, Driffield.

Trade Price Current—Farm Seeds—1887.
PETER LAWSON AND SON (Limited), Edinburgh, have now Posted their ANNUAL CATALOGUE of AGRICULTURAL SEEDS to their customers, but should there be any not delivered, Copies will be sent upon application.

"Imperator" Potato.
PETER LAWSON AND SON (Limited), Edinburgh, are prepared to Book Orders for the "IMPERATOR" POTATO, as sent out by them, also other leading kinds. Prices upon application.

SALES BY AUCTION.

Monday Next.—(Sale No. 7390.)

Highly important to the Trade and other Large Buyers,
An immense importation of 30,000 grand Bulbs of LILIUM AURATUM from Japan in the finest possible condition; ARAUCARIA EXCELSA, in cases as received; 5000 extra fine South African TUBEROSES, a variety of home-grown LILIES, &c.

MR. J. C. STEVENS will SELL the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY NEXT, April 4, at half-past 12 o'Clock precisely..

On view morning of Sale, and Catalogues had.

Wednesday Next.—(Sale No. 7392.)

A consignment of choice named Indian AZALEAS, CAMELLIAS, PALMS of sorts, Hybrid RHODODENDRONS, LAURUSTINUS, and other Plants from Ghent. Also Standard and Dwarf ROSES, including most of the leading varieties; a great variety of Hardy BORDER PLANTS, hybrid GLADIOLI, &c.

MR. J. C. STEVENS will SELL the above by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, April 6, at half-past 12 o'Clock precisely.

On view morning of Sale, and Catalogues had.

Wednesday Next.—(Sale No. 7393.)

ORCHIDS IN FLOWER AND BUD.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, April 6, about 200 lots of choice Established ORCHIDS, in Flower and Bud, comprising, amongst other fine things, some splendid forms of Odontoglossum Alexandræ; also several hybrid Odontoglossums, including a probably new variety, with yellow sepals blotched brown, and lighter petals.

On view morning of Sale, and Catalogues had.

Wednesday Next.—(Sale No. 7393.)

AERIDES EXPANSUM.
DENDROBIUM HETEROCARPUM PHILIPPINENSE.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, April 6, at half-past 12 o'Clock precisely, by order of Messrs. Hugh Low & Co., a grand lot of imported plants in the best possible condition, assuredly by far the finest ever offered, of the rare and lovely AERIDES EXPANSUM, amongst them splendid specimens with many growths; also A. QUINQUEVULNERUM, A. LEEANUM, SACCOLABIUM VIOLACEUM, true, the finest mass ever offered; DENDROBIUM HETEROCARPUM PHILIPPINENSE, a very fine lot of this rare and superb species, which often blooms in threes, the greater part of the bulbs 9 feet from end to end; D. MACROPHYLLUM (SUPERBUM), D. FORMOSUM GIGANTEUM, D. EBURNEUM, D. FYTCHIANUM, CŒLOGYNE SCHILLERIANA, and other choice ORCHIDS.

On view morning of Sale, and Catalogues had.

Special sale of Orchids in Flower and Bud.

MR. J. C. STEVENS begs to announce that his NEXT SALE of ORCHIDS in Flower and Bud will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, April 20, at half-past 12 o'Clock precisely, and he will be glad if gentlemen desirous of entering plants for this Sale will send particulars as soon as possible.

Tuesday Next.

ESTABLISHED and IMPORTED ORCHIDS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to SELL by AUCTION, at their Central Auction Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, April 5, at half-past 12 o'Clock precisely, a very fine lot of ESTABLISHED ORCHIDS, including amongst many others:—

Odontoglossum hybrid, very fine	Cypripedium callosum	Cœlogyne Ruckeri
,, Arnoldianum	,, Sanderianum	,, cristata maxima [alba-
Lælia elegans Schilleriana	Trichopilia galeottiana	Cattleya Skinneri
,, anceps, white	Aërides Houlletianum	,, Lawrenceana
,, elegans	Cœlogyne Thuiana, large plant	Aërides Sanderianum
Aërides Ballantineanum		Masdevallia Wendlandiana

Also imported Dendrobes, Lælia purpurata, Odontoglossum blandum, O. Pescatorei, and O. triumphans, in fine masses.

On view morning of Sale, and Catalogues had.

Wednesday Next.

3000 LILIUM AURATUM, very fine Bulbs, from Japan; 2000 PEARL TUBEROSES just received; 10,000 FREESIA REFRACTA ALBA from the Cape; CAMELLIAS, AZALEAS, PALMS, and other PLANTS in variety, from Belgium, and elsewhere; a collection of beautiful Japanese IRIS, CARNATIONS, PICOTEES, English grown LILIES; 500 choice named Dwarf ROSES, and a variety of hardy PLANTS and BULBS, together with an assortment of TERRA COTTA POTS, FOUNTAINS, and other POTTERY, removed from the Building Exhibition, by order of Mr. John Matthews (the Royal Pottery, Weston-super-Mare), for Sale without Reserve.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on WEDNESDAY NEXT, April 6, at half-past 12 o'Clock precisely.

On view morning of Sale, and Catalogues had.

Wednesday Next.

3000 LILIUM AURATUM, splendid bulbs; 10,000 FREESIA REFRACTA ALBA, from the Cape, very fine bulbs; 2000 PEARL TUBEROSES.

MESSRS. PROTHEROE AND MORRIS will include the above in the SALE at their Rooms on WEDNESDAY NEXT, April 6.

On view morning of Sale, and Catalogues had.

Orchids in Flower.

SPECIAL SALE, APRIL 26.

MESSRS. PROTHEROE AND MORRIS beg to announce that their NEXT SPECIAL SALE of ORCHIDS in FLOWER, will take place on TUESDAY, April 26, and they will be glad to receive notice of entries in due course.

The Downside Collection of Orchids.

Highly IMPORTANT SALE of selected duplicate plants from this renowned Collection, consisting chiefly of plants matchless in point of rarity and culture.

By order of Wm. Lee, Esq., in consequence of the overcrowded state of the houses.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to SELL by AUCTION, on the Premises, Downside, Leatherhead, on TUESDAY and WEDNESDAY, May 3 and 4, at half-past 12 o'Clock precisely each day, selected duplicate and other ESTABLISHED ORCHIDS.

A list of the principal plants will be found in the *Gardeners' Chronicle* for Saturday, March 19, 1887.

The Orchids may be viewed any day prior to the Sale on presentation of Catalogue or card to view, which are now ready, and may be obtained of Mr. WOOLFORD, the Head Gardener, on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Highfield Nurseries, Matlock, Derbyshire.

CLEARANCE SALE of NURSERY STOCK.

MESSRS. ELSE AND SON have received instructions from Mr. J. J. Marriott to offer for SALE, without reserve, in consequence of the Land being let, on TUESDAY, April 12, the remaining portion of the Stock at the above-named Nurseries, comprising large quantities of LAUREL CAUCASICUM, LATIFOLIA, and ROTUNDIFOLIA; CUPRESSUS, RETINOSPORAS, Golden YEWS, Irish IVIES, Oval-leaved PRIVETS, ROSES, MANETTI STOCKS; choice named RHODODENDRONS, &c. Also the following Seedling and Transplanted RHODODENDRONS, by sample—about 400,000 Hybrid Seedlings, 3-yr.; 50,000 ditto, 3-yr. bedded; 50,000 ditto, 2-yr. bedded; 40,000 ditto, 4 to 6 inches, transplanted; and 20,000 Seedlings from splendid named sorts, 2-yr. bedded. Sale to commence at 12 o'Clock.

The Nursery is situated near Rockside Establishment, about half-a-mile from Matlock Bridge Station (Midland Railway).

Catalogues may be obtained on application to the Auctioneers, Matlock Bridge, seven days prior to the Sale.

Auction and Estate Agency Offices, Matlock Bridge.

Preliminary Announcement.

To HORTICULTURISTS and OTHERS.

HANS NIEMAND'S CELEBRATED NURSERIES, situated in the Harborne Road, Edgbaston, Birmingham; together with a Roomy DWELLING-HOUSE, COTTAGE, 25 GREENHOUSES, many FRAMES and PITS, GOODWILL of the Business, and the whole of the splendid Collection of STOVE, GREENHOUSE, and other PLANTS.

MESSRS. THOMAS AND BETTRIDGE will SELL by AUCTION, in One Lot, as a Going Concern (by direction of the owner, who is retiring from the Business on account of ill-health), at the Estate Sale-room, 1, Newhall Street, Birmingham on a date and at a time to be named in future advertisements (unless previously disposed of by Private Contract)—the above Valuable and Widely-known HORTICULTURAL PROPERTY, Leasehold, for a term of 99 years, from March 28, 1825. Ground-rent, £27 per annum.

This Nursery has a name second to none in the locality for its magnificent floral productions.

There is a first-class connection at the present time, and the Sale affords an excellent opportunity for any one wishing a Business of so refined and elevating a character.

The Nurseries may be viewed any day prior to the Auction, and the Dwelling-houses by cards only, to be obtained from the Auctioneers fourteen days before the Sale.

For further particulars apply to Q. C. COLMORE, Esq., Solicitor, 27, Waterloo Street; or the Auctioneers, 11, Temple Row, Birmingham.

To the Seed Trade.

WANTED, by the advertiser, an Established SEED and AGRICULTURAL BUSINESS—one having a thoroughly good retail connection, or would correspond with any one in the above Trade, with a view to Partnership.

Apply giving full particulars to R. M., Messrs. Osman & Co., 14, Windsor Street, Bishopsgate, London, E.C.

London, 30 Miles from.

OLD ESTABLISHED NURSERY BUSINESS with an extensive connection. Satisfactory reasons for disposal.

MESSRS. PROTHEROE AND MORRIS are instructed to find a Purchaser for one of the oldest established Nursery Businesses within a similar distance from London. The incoming would be subject to valuation, or a Partnership would be entertained.

Full particulars of Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, E.C.

FOR DISPOSAL, a FLORIST'S BUSINESS, in good situation. Splendid opportunity for a pushing man. Failing health only cause for selling. Stock, &c., price £350.

For full particulars, apply to R. SORTWELL, Estate Agent, 1, Helena Chambers, Ealing.

FOR SALE, a FLORIST and SEED BUSINESS, in good position; established 12 years. Eight newly erected Greenhouses, completely fitted and stocked, Seed Shop well fitted. Low rental on lease. Incoming low. Part could remain, or practical WORKING PARTNER would be taken with small capital.

H., 42, West Street, Sittingbourne, Kent.

TO LET, WING NURSERY, near Oakham, close to Manton Junction, containing 5 large well heated Plant and Fruit Houses, and nearly 2 acres (splendid Soil) Fruit Trees, &c. Good ten-roomed House and Outbuildings. Photographs sent.

Apply JOHN BURTON, Haymarket, Leicester.

To Fruit and Flower Growers, Market GARDENERS and OTHERS.

Surrey, 18 miles from London midway betwixt two stations, and in the midst of a district where there is a local demand.

TO BE LET on LEASE or SOLD IMMEDIATELY, owing to owner's ill-health, an excellent FRUIT GARDEN, well stocked, about 12 acres in extent (more or less Land could be had as desired), with numerous Glass Erections, including Vinery, Strawberry, and Tomato Houses, and several Pits. All heated.

Substantial brick-built 7-roomed Cottage, also Stabling, Cart-shed, Cow-shed and other Buildings, Fruit, Seed Potting and Washing Sheds. Terms of

WATERER AND SONS, Land Agents, Chertsey.

Fifty Nurseries, Market Gardens, Florist and Seed BUSINESSES to be DISPOSED OF.

MESSRS. PROTHEROE AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained, gratis, at

67 and 68, Cheapside, London, E.C.

WILLIAM DENMAN, SALESMAN and HORTICULTURAL AGENT, Covent Garden, W.C., CAN TAKE in large quantities next week, CALLAS, EUCHARIS, ROSES (White), TULIPS (White), and other CUT STUFF. Further particulars on application.

Important Notice.

To Florists, Seedsmen, Horticultural Builders, &c.
PLANTS, FLOWERS, FRUITS and VEGETABLES a Specialty.

WM. J. WELCH begs to call particular attention to his productions for ILLUSTRATING BOOKS, MAGAZINES, CATALOGUES, and for ADVERTISING PURPOSES.

For Specimens see *Gardeners' Chronicle*, 1883 to 1886.

ADDRESS:—25, Wellington Street, Strand, London, W.C.

Landscape Gardening.

H. F. MALLER (of the firm of B. Maller & Sons), late Pupil of the Crystal Palace School of Landscape Gardening, is prepared to FURNISH PLANS, or undertake any kind of the above work.—61, High Street, Lewisham.

To Farmers, Market Gardeners, and Others.

THE METROPOLITAN BOARD of WORKS have at their Main Drainage Pumping Station, situated upon the southern side of the Thames, at Crossness, near Abbey Wood, Kent, a very large quantity of SOLID MATTER pressed from Sewage, which they are prepared to DELIVER FREE of COST to any parties sending either barges or carts for the same.

The Board will also, if desired, deliver the SEWAGE-CAKE, FREE of COST, to the Abbey Wood Station, on the North Kent Railway, but the Board will not pay or be responsible for the payment of any charges in respect of the carriage upon that or any other line of railway.

Parties desirous of obtaining a supply of the SEWAGE-CAKE must apply to the Superintendent of the Pumping Station at Crossness, who will arrange for either loading the cake into the barges or carts, or delivering it at the Abbey Wood Station, as may be required.

J. E. WAKEFIELD, Clerk of the Board.

Spring Gardens.—March 24, 1887.

WHITE CHRYSANTHEMUMS "PRINCESS TECK" and "ETHEL," 1*s.* 6*d.* and 2*s.* per dozen; 9*s.* and 12*s.* per 100.

WILL TAYLER, Osborn Nursery, Hampton, Middlesex.

TO BE DISPOSED OF, a few Stove Plants, viz.:—Twenty-four CROTONS, in six sorts, from 1 foot to 2 feet high; two ADIANTUM FARLEYENSE, in 10-inch pots; COCOS WEDDELIANA, 4 feet; one PANDANUS VEITCHI, 4 feet; and two ALLAMANDAS HENDERSONI. Apply to

Mrs. DEWHURST, Southfield, Handforth, Cheshire.

Azalea indica.

AUGUST VAN GEERT, Ghent, can supply, fit for immediate use, nice compact stuff on short stems full of buds, 80*s.* per 100. Order early from

WILLIAM DENMAN, Salesman and Horticultural Agent, Covent Garden, W. C.

SHRUBS and CONIFERÆ.—Laurustinus, 2 feet, bushy, 32*s.* per 100. Arbutus Unedo, 2 feet, 40*s.* per 100. Aucuba japonica, 2 to 2½ feet, 40*s.* per 100. Box Tree, sorts, 1½ to 2 feet, 30*s.* per 100. Common Laurels, 2 feet, 10*s.* per 100. Colchic Laurels, 2 to 2½ feet, 16*s.* per 100. Grislienia littoralis, 2 feet, 35*s.* per 100. Sweet Bay, 1½ to 2 feet, 30*s.* per 100. Rhododendron ponticum, 1½ to 2 feet, 30*s.* per 100; ditto, 2 to 2½ feet, 40*s.* per 100, extra fine. Abies Douglasii, 2 to 3 feet, 30*s.* per 100; ditto, 3 to 4 feet, 40*s.* per 100; ditto, 4 to 5 feet, 70*s.* per 100, fine roots and well furnished. Araucaria imbricata, 2 to 2½ feet, 42*s.* per dozen; ditto, 3 to 3½ feet, 60*s.* per dozen. Cupressus Lawsonii, 1½ to 2 feet, 16*s.* per 100; ditto, 2 to 2½ feet, 20*s.* per 100; ditto, 3 to 4 feet, 50*s.* per 100. Cupressus erecta viridis, 1½ to 2 feet, 25*s.* per 100; ditto, 2 to 2½ feet, 40*s.* per 100. Retinospora plumosa, 1½ to 2 feet, 30*s.* per 100; ditto, 2 to 2½ feet, 40*s.* per 100, extra. Picea Nordmanniana, 2 feet, 35*s.* per 100. Thuia Lobbii, 2 to 2½ feet, 25*s.* per 100. Special offer by the 1000 for smaller sizes. GARLIES MITCHELL, Nurseryman, Stranraer.

SEED POTATOS.

Guaranteed True Stocks.
VEITCH'S ASHLEAF.
RIVERS' ASHLEAF.
ALBION KIDNEY.
LADY TRUSCOTT.

All at £5 per ton. Free on rail.

S. BIDE, Alma Nursery, Farnham, Surrey.

JOHN DEEKS, SEED GROWER, Kelvedon, Essex, offers the following, all grown in 1886, ready cash:—20 Bushels of SCARLET RUNNER BEANS, at 6*s.* per bushel; 1 cwt. of American CRESS, at 40*s.* per cwt.; 1 cwt. of MAGEE'S, at 40*s.* per cwt.; 1 cwt. of Long Yellow MARROW, at 9*d.* per lb.; 50 lb. Mixed GERMAN ASTER, at 9*d.* per lb.

CŒLOGYNE CRISTATA, with bloom spikes, well grown and very cheap.
Trustees of the late J. STEVENSON, Timperley, Cheshire.

NEW TREE CARNATIONS.—We can now offer our Pink Souvenir de Malmaison, in 4-inch pots, at 3s. 6d. per pair, or 18s. per dozen. Trade price on application.
CLARK AND CO., Nurserymen, Seedsmen, and Florists, North Shields.

200,000 BEDDING and GREENHOUSE PLANTS.
See advertisement in *Gardeners' Chronicle*, March 26. Send for CATALOGUE with reduced prices, post-free on application.
WILLIAM POTTEN, Camden Nursery, Sissinghurst, Staplehurst, Kent.

CREEPERS FOR WALLS.—By planting what is suitable, an ugly object may easily be made beautiful. Descriptive LIST and advice free.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

CHRISTMAS ROSES.
HELLEBORUS ABCHASICUS ALBUS, 6s. per dozen.
" " PURPUREUS, 9s. per dozen.
" FŒTIDUS, 6s. per dozen.
" NIGER, 3s. per dozen.
" " ALTIFOLIUS, 12s. per dozen.
" " ANGUSTIFOLIUS, 9s. per dozen.
" OLYMPICUS PURPUREUS, 9s. per dozen.
" WILLY SCHMIDT, 12s. per dozen.
One plant of each of the above, post-free for 6s.
MORRISON BROTHERS, Nurseries, Aberdeen.

To the Trade
VEGETABLE and AGRICULTURAL SEEDS.
H. AND F. SHARPE will be pleased to give special quotations for all their fine selected stocks of the above-named Seeds of 1886 growth. Their prices will be found very advantageous to purchasers.
Seed-growing Establishment, Wisbech.

ORCHIDS A SPECIALTY. Stock immense in extent, fine in quality, moderate in price. Inspection invited.
HUGH LOW AND CO., Clapton Nursery, London.

AUGUSTE VAN GEERT, Continental Nursery, Ghent, Belgium, begs to inform Friends and Customers that his Special Spring Trade LIST is just out, and may be had on application. A splendid stock of PALMS, all sizes, now ready.

CHEAP and BEAUTIFUL TREES for Villa planting, New Parks, &c., to give immediate effect.

12	THUIA LOBBII, 8 to 10 feet, very fine	£1 10	0
12	" TARTARIAN, 5 to 6 feet, very hardy ...	0 15	0
12	CUPRESSUS LAWSONIANA ARGENTEA, 5 ft.	0 12	0
12	" LAWSONIANA ARGENTEA, 6 feet ...	0 15	0
12	" LAWSONIANA ARGENTEA, 7 to 9 feet ...	1 5	0
12	" LAWSONIANA STRICTA, 7 to 9 feet, fine ...	1 5	0
12	RETINOSPORA PLUMOSA, 4 to 5 feet	0 15	0
12	" PLUMOSA, 5 to 6 feet	1 0	0
12	PINUS EXCELSA, 4 to 5 feet, very fine	0 15	0
12	" CEMBRA, 3 feet	0 10	0
12	THUIOPSIS BOREALIS VARIEGATA, 5 to 6 ft.	1 0	0
100	FLOWERING SHRUBS in great variety, 4 feet	1 10	0

Apply to W. JACKSON AND CO., Nurseries, Bedale.

LAING'S BEGONIA SEED.—Awarded Two Gold Medals. In sealed packets. Unequalled quality. Saved from prize plants. Choicest mixed, Single varieties, 1s., 2s. 6d., and 5s. per packet. Collections, 12 named single varieties, separate, 5s. 6d.; 6 ditto, 3s. Choicest mixed double varieties, 2s. 6d., 3s. 6d., and 5s. per packet. Post-free. Order direct from us to procure the genuine seed.
JOHN LAING AND CO., Seedsmen, Forest Hill, S.E.

PRIMROSES (Double varieties).—Cloth of Gold, 18s.; Crimson, 18s.; Crousii, 18s.; Lilac, 2s.; Purple, 6s.; Purple-crimson, 6s.; Platypetala, 6s.; Red, 4s.; White, 2s.; Early Yellow, 4s.; Late Yellow, 2s. per dozen. Single White, 2s.; Single Yellow, 1s.; Single Crimson, 6s.; Single, in variety, 1s. per dozen.

AURICULA, Alpine, 6s.; Border varieties, 1s.; free large flowering varieties, 4s.; Yellow, 1s.; Purple, 1s.; Green Edged, 3s.; White Edged, 3s.; Grand Turk, 18s.; Double Yellow, 18s.; Double Purple, 30s. per dozen.

POLYANTHUS, Gold-laced, 2s.; Border varieties, 1s.; Giant White, 3s.; Giant Yellow, 3s.; Giant, in variety, 3s.; Double Black, 6s.; Hose-in-hose, in variety, 2s. per dozen.

PRIMULA, cashmiriana, 6s.; denticulata, 3s.; farinosa, 6s.; japonica, 4s.; Munroi, 4s.; nivalis, 2s.; pulcherrima, 9s.; rosea, 6s.; Sieboldi, 2s.; spectabilis, 6s.; viscosa, 6s. per dozen.
One plant of each, in 50 distinct varieties, carriage paid, for 25s. Cash with order.
MORRISON BROTHERS, Nurseries, Aberdeen.

FLOWERING SHRUBS.—LILAC, MOCK ORANGE, WEIGELA, BERBERIS, CHERRY, HYDRANGEA, HYPERICUM, RIBES, SPIRÆA, RHUS, VIBURNUM, &c.; 8s. per dozen, 50s. per 100. Descriptive LIST free.
RICHARD SMITH AND CO., Nurserymen, Worcester.

PANSIES.—Scotch Prize Pansies, 50 best Exhibition varieties, 12s. 6d., 26 for 6s. 6d., 14 for 4s. 6d., post-free, my selection of strong healthy plants.
Competitors please note—Cuthbertson's New CATALOGUE of Competition Flowers and Vegetables, with 30 Illustrations, free to all. Send for a copy.
M. CUTHBERTSON, Seed Grower, Seed Merchant, and Florist, Rothesay.

SIMPLE INSTRUCTIONS, by which an abundance can be insured of delicious MUSHROOMS. See Seed LIST, free.
RICHARD SMITH AND CO., Seed Merchants and Nurserymen, Worcester.

BARR'S
PROVEN
FLOWER SEEDS,
SAVED FROM THE
FINEST STRAINS.

BARR'S
DESCRIPTIVE SPRING CATALOGUE
OF
CHOICE SEEDS
FOR
Greenhouse, Flower Garden, Wild Garden, Grass Garden, Subtropical Garden, Rock Garden, and Kitchen Garden.
The most complete List issued. Fully described.

BARR'S Large-flowered **Ten-week STOCK.**
Splendid varieties, in mixture.
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Gardening Illustrated, page 44, March 23:—"We think Messrs. VICCARS COLLYER & Co. have simply sent us a deformed sample of one of the pale varieties of the common Egg Plant."

Same page and date, quoting from letter to *Gardener's Monthly and Horticulturist*:—"The Editor adds that a plant received shows it to be different from Solanum melongena (Egg Plant)."

Gardeners' Chronicle, page 386, March 19:—"Clearly the fruit of a Solanum very nearly allied to if not identical with the Tree Tomato, and with the Egg Plant."

Journal of Horticulture, page 210, March 17:—"It much resembles a variety of Solanum melongena, perhaps guatemalense, but in America it is considered distinct."

Pacific Rural Press of San Francisco:—"The plant belongs to the Solanum family, and its scientific name was supposed by the eminent French botanist, M. Rousegnon, to be Solanum guatemalense. Professor Hilyard, however, doubts the identity of the species, and evidently with good reason."

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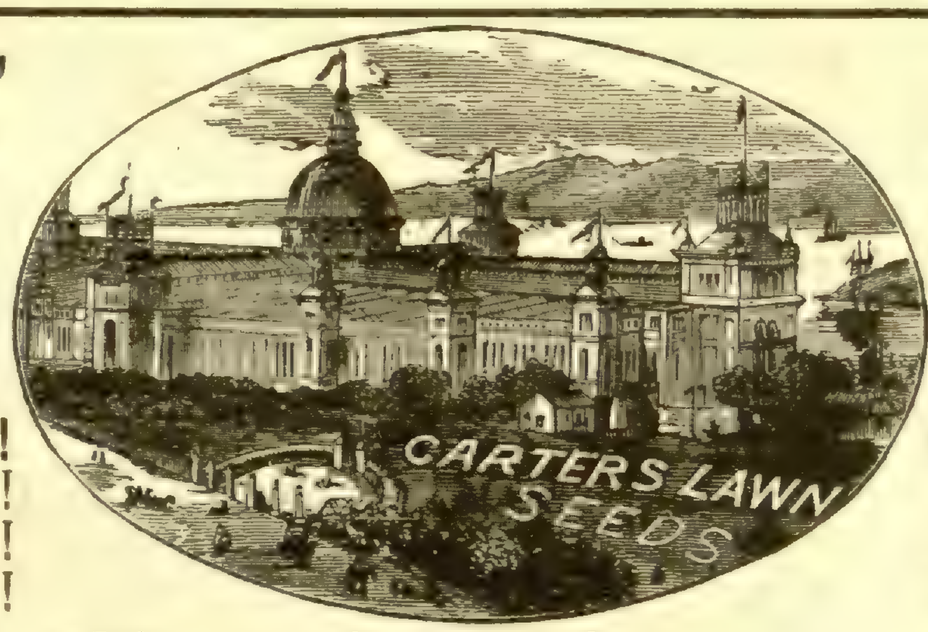

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NOTICE TO ADVERTISERS.

Friday next, *April* 8, *being* Good Friday, *the* "Gardeners' Chronicle" *will be published on* Thursday, *April* 7.

Advertisements *for* next week *must therefore reach the Office not* later *than* Wednesday Morning, *April* 6.

THE

Gardeners' Chronicle.

SATURDAY, APRIL 2, 1887.

TROPICAL FRUITS IN THE KEW MUSEUM.

In connection with the subject of tropical fruits recently brought before the Royal Colonial Institute by Mr. Morris, and referred to in the *Gardeners' Chronicle* for February 26 last, it may be useful to those interested in the matter to know that most of the fruits under review, as well as others not mentioned, but which might prove of equal value, are to be found in the Kew Museum. The collection of tropical fruits preserved in fluid has always been a distinct feature of the Economic Museum at Kew. Those sent home by Henshall and Rattan from the Malay Archipelago some thirty years since were not only remarkably good specimens, but, up to a certain point, were very complete. The addition of fresh specimens, acquired from various collectors and botanic gardens, as well as from the several Exhibitions—notably the Health Exhibition and the recent Colonial and Indian Exhibition—has made the Kew collection unique in this respect. It may, perhaps, be remembered that at the Health Exhibition Siam made a great display of native fruits, extremely well preserved in a solution of salt and water, the whole of which collection was made over by the Siamese Commission at the close of the Exhibition to the Kew Museum. This collection placed many of the fruits of the East in an entirely new light; some notes on them and others in the Kew Museum may therefore not be without interest at the present time.

The Siam collection included some very fine specimens of the commoner or better-known tropical fruits, such as the Mango, Mangosteen, the Anonas, &c.; but it is to those that are less known that we wish to draw especial attention, and for this purpose it will no doubt be more generally useful to the readers of the *Gardeners Chronicle* if we refer to the individual fruits under their several natural orders.

Bixineæ.

Flacourtia inermis, Roxb.—The name of Mad Apple is applied to this fruit in the Siamese collection, while in India it is known as Country Plum. The tree is a native of the Moluccas, but seems to be much cultivated. The fruit is about the size of a Cherry, of a red colour, and has a smooth skin, and is described by Roxburgh as being "too sour to be eaten raw, but makes very good tarts."

Under the name of Luvi-luvi, or Lobi-lobi, the fruits of F. cataphracta, Willd., are used in Java for making into preserve: they are globular, with a smooth purple skin, and are about the size of a common Plum.

Aberia caffra, Harv. and Loud.—The Kei Apple is perhaps better known than the last. It is the fruit of a shrub, native of the Cape of Good Hope and Natal. When ripe the fruits are of a golden-yellow colour, about the size of a small Apple. They make an excellent preserve, but are said to be so exceedingly acid when fresh that "the Dutch settlers prepare them for their tables as a pickle without vinegar."

Malvaceæ.

Durio Zibethinus, L. (the Durian).—This well-known fruit is included here only on account of the possibility of the edible pulpy portion being brought to this country preserved in syrup, like Pines. A specimen in the Museum from the Siam collection suggests this possibility, though it is probable that the flavour of the Durian, as described by travellers, would not recommend it to European palates.

Geraniaceæ.

Averrhoa Bilimbi, L. (the Blimbing).—This, and the Carambola—A. carambola, L.—are useful Indian fruits, valued on account of their acid taste for making pickles as well as for preserves.

Rutaceæ.

Triphasia trifoliata, DC.—A spiny shrub, native of Southern China, but now naturalised in India and the West Indies. The fruits are about the size of a large black Currant, with a reddish skin. In an unripe state they are said to have a sticky tenacious pulp, and a turpentine flavour, but when fully ripe they have an agreeable sweet taste, and are preserved in syrup. They occasionally come to this country in this form under the name of Lime berries. A closely allied plant is the Wampee (Clausena Wampi, Blanco, better known perhaps as Cookia punctata), a small globular body, esteemed in China and the Indian Archipelago.

Meliaceæ.

Lansium domesticum, Jack. (Lansa, Langsat, or Dooku).—A tree of India and the Malay islands, the fruit of which is about the size of a pigeon's egg. The skin is of a yellow colour, and the pulp or flesh white. When fully ripe it is of a pleasant, sweetish, acid taste, and is highly esteemed by the people in the Malay islands, either in the fresh state, or cooked in various ways, or made into a preserve. Duku jam was shown in the collection from the Straits Settlements at the Colonial Exhibition, and its flavour was certainly very agreeable.

Olacineæ.

Ximenia americana, L. (the Amatunduluku of Natal).—It is a shrub or small tree, and is found widely spread over tropical regions. The fruits are fleshy, somewhat ovoid, about an inch long, and when fresh, of a sweetish colour; they have a sweetish, acid taste, and are generally eaten in the countries where the plant is grown. A form of this species has been described under the name of X. elliptica, found in the Pacific islands, where it is eaten in large quantities by the natives, and is said to be extremely acid, and to possess an Almond-like smell. It is of a globular form, and not elliptical.

Sapindaceæ.

This order contains the well-known Litchi and Longan, and the less known Rambutan and Pootassan. I mention the first only to draw attention to the forms in which these fruits might be introduced. In this country we know the Litchi (Nephelium Litchi, Camb.) only in its dried state, that is, when the outer warted shells have become woody, and the inner pulp, or aril, which envelopes the seed, has somewhat shrivelled and become black. In this state the pulp has simply a sweet taste, but in the fresh state the pulp is whitish, or slightly tinged with pink, and has a refreshing acid taste. A sample of these fruits, with the woody coat removed, showing the inner pulp preserved in fluid, from Siam, is shown in the Kew Museum, and they suggest the possibility that this pulpy portion might be preserved in tins in a similar manner to Pine-apples, and sent to this country. The fruits of the Rambutan, or Rambustin (Nephelium lappaceum, L.), might also be treated in a similar way. The pulp makes an excellent jam, samples of which were exhibited in the Straits Settlements collection. The pulp of the Pootassan (Nephelium mutabile) is similar to the last.

Otophora fruticosa, Bl. (the Phamarieng of the Siamese), produces a two or three-lobed fruit about the size of a Cherry, of a bright shining black when ripe, and containing a large proportion of pulp of a pleasant sweetish, slightly astringent taste.

Anacardiaceæ.

Besides the Mango and Cashew nuts, and the several species of Spondias which furnish fruits of varied quality, two species of Bouea yield large, pulpy edible fruits; these are B. macrophylla, Griff., and B. burmanica, Griff., both of which are known in Siam by the name of Maprang.

Rosaceæ.

Chrysobalanus Icaco, L.—This is the Icaco, or Coco Plum of the West Indies and South America. The fruit are about the size and appearance of an ordinary Plum, but vary in colour from white to yellow, red or purple. The pulp is described as having a sweet but somewhat austere taste, and is used either raw or for making a conserve.

Myrtaceæ.

In this large order many fruits suggest themselves as being likely to prove valuable either in the state under which they are at present known, or under an improved condition from the effects of cultivation. The Guava (Psidium guayava, Radd.), and the Rose Apple (Eugenia Jambos, L.), are amongst the best known fruits of the order; these latter, however, are but little esteemed in their fresh state by Europeans, in consequence of their generally insipid taste, but candied with sugar they are very agreeable, and have a distinct Rose flavour. Rose Apples preserved in this manner were sent from Jamaica to the Philadelphia Exhibition, and were awarded a Silver Medal. The tree is commonly cultivated in gardens in India, and the fruit is eaten either raw or made into a preserve. Another species of Eugenia, namely, E. Jambolana, Lam., is much valued in India for the sake of the fruits, which are mostly about the size of a pigeon's egg, but vary under cultivation, and are eaten by all classes of the people. The tree is an evergreen, common throughout India, both wild and cultivated, and it is also found in Ceylon, the Malay Archipelago, and Australia.

The Ugni (Myrtus ugni), a Chilian shrub, has long been valued in its native country for the sake of its fruits, which are of a brownish-red colour when ripe, and about the size of a large black Currant; it has a soft juicy pulp, with a sweetish, somewhat aromatic flavour. It is described as being cultivated in gardens and used as dessert in Valparaiso, and the expressed juice of the fruit mixed with water is said to form a very refreshing drink, having an odour of Rosemary. The plant has been recommended for cultivation as a fruit-bearing shrub in the warmer parts of England. A fruit very similar to the Ugni is produced by Myrtus salutaris, H. B. Samples are shown in the Kew Museum from Venezuela. On the banks of the Orinoco they are said to grow as large as Sloes.

Passifloreæ.

Several of the fleshy fruits of this order are utilised in tropical countries for making preserves, as, for instance, Passiflora quadrangularis, L., and P. maliformis, L., and Carica Papaya. Jams made from the first named species were shown in the Colonial Exhibition from Dominica, and from the second from Natal; both, however, lacked any distinct flavour to recommend them, and this was generally the case with the Papaw, which was shown from several of the colonies preserved in various ways. The most curious, however, if not the best in point of quality, were those shown in the Straits Settlements collection where the fruits were cut into various ornamental forms and preserved in syrup. Under the name of "scented Lemon" (a label probably misplaced) was shown some attractive looking substance of a bright green colour, also in syrup, which upon examination I found to be the flowers of the Papaw. They were crisp to the taste, but had no flavour besides that of the syrup. Papaw jam and candied Papaw were amongst the other preparations of this well known and apparently useful fruit.

Cornaceæ.

Nyssa capitata, Walt.—The fruits, which are about an inch long and ovoid, of a green colour and very agreeable flavour, are known in North America as Ogeechee Limes, and are often preserved in syrup and used as Limes.

Sapotaceæ.

This order contains several genera which furnish valuable edible fruits, such as the Chrysophyllum, Cainito or Star Apple, Lucuma mammosa, Griseb., or Mammei Sapote, and the Achras Sapota, L., or Sapodilla or Naseberry. Of this fruit, Dr. Watt says that it is not much appreciated in India, but it is surreptitiously sold in the streets as Mangosteen. The fruits of Mimusops Kauki, L., are perhaps less known. They are about the size of a small Plum, and are known in Siam as Lamut. Those of M. Elengi are also edible.

Ebenaceæ.

Besides the Persimmon (Diospyros virginiana, L.), which is edible when fully ripe or bletted, the fruit of the Chinese Date Plum (D. Kaki) is important in China. The fruits are about the size of a large Apple, of an orange-red colour, and contain a quantity of edible pulp. The Chinese and Japanese use them both in the fresh and dried states and also preserved in syrup.

Apocynaceæ.

In this order, containing as it does many plants with elastic milky juices, yielding rubber, and many of them poisonous, one would scarcely expect to find many edible fruits; several of them, however, are valuable on this account, the following of which may be mentioned:—

Hancornia speciosa, Gomez (the Mangaba or Mangabeira, of Pernambuco).—A small tree, the milky juice of which furnishes the Pernambuco rubber. The fruits are yellow when ripe, marked with red streaks or spots, about the size of an Orleans Plum; when perfectly ripe or somewhat bletted they are said to be very delicious and are a favourite fruit in Brazil. They have occasionally found their way to this country, and I have seen them sold on costermonger's barrows in the streets of London but very rarely.

The *Amatungulu* of Natal (Carissa [Arduina] grandiflora) is the fruit of a large spiny shrub which makes an excellent preserve, and is much used in Natal for that purpose; the fruits are pulpy and very similar to a Plum in appearance, about 2 inches long and 1½ inch broad. Another species of Carissa, namely, C. Carandas, L., known as the Karenja or Karaunda fruit in India, is cultivated in many parts of India for the sake of its fruits, which are used in an unripe state for pickling, and when fully ripe for tarts and jelly.

Myristiceæ.

This order is included only for the purpose of

drawing attention to the use to which the outer fleshy part of the Nutmeg fruit is put in the East. Cut into various fantastic shapes, as representations of birds, flowers, &c., sometimes with the Nutmeg still enclosed, they are preserved in syrup, and form a very attractive preserve. It has a distinct Nutmeg flavour, and, like preserved Ginger, would be a useful adjunct at dessert.

EUPHORBIACEÆ.

Phyllanthus emblica, L.—Known as the Emblic Myrobalum. A tree of the dry forests of India and Burma. The fruit is about the size of a small Damson. The natives eat it raw, preserved, or made into a sweetmeat, while it is used by Europeans for tarts and jellies. It is stated that a "half-ripe fruit, if chewed, has the effect of making water taste sweet." The Otaheite Gooseberry (Phyllanthus distichus, Muell., Arg., better known perhaps as Cicca disticha, L.) is another valuable fruit, used in Java for pickling. Antidesma Bunius, Spr., a native of Java and the neighbouring islands, furnishes small fleshy, berry-like fruits, of a bright red colour, ripening into black; they have a subacid taste, and are used chiefly for preserving. Two or three species of Baccaurea (Pierardia) yield edible fruits; those most valued are B. edulis, Muell., Arg., a Malayan species, known as the Rambeh, the fruits of which are about the size of a large Cherry, yellowish in colour when ripe, and containing a sweet delicate flavoured pulp. In Sumatra it is called Choopah, and in Siam, Mafai; B. racemosa, Muell., Arg., is also a Cherry-like acid fruit of Java, as is also B. sapida, known in India as the Lutco.

The foregoing enumeration of fruits is not by any means an exhaustive one. I have brought those forward which are the least generally known, but of which the Museum contains good specimens. *John R. Jackson, Curator, Museums, Royal Gardens, Kew.*

PLANTS NEW OR NOTEWORTHY.

SCHOMBURGKIA MARGINATA (*Lindl.*) — VAR. IMMARGINATA.

Major Lendy has kindly favoured me with a good inflorescence of this elegant beauty, whose fine brown wavy sepals and petals give a fine contrast to the white lip and column. I have no doubt, after a very careful study, that this must be regarded as a variety of the little-known and seldom-seen old Schomburgkia marginata, its chief character being dependent upon the absence of the yellow margins of the sepals and petals. It stands nearest the gorgeous Schomburgkia undulata, Lindl., a grand inflorescence of which, boasting extra long mauve-purple pedicels, expands its glorious charms before me, also kindly sent me by Major Lendy, who appears to understand the difficult art of making those glorious half-forgotten, half-avoided plants flower. *H. G. Rchb, f.*

SACCOLABIUM PECHEI, *n. sp.**

This is a singular novelty. It has broad ligulate leaves, blunt, bilobed at the apex, nearly 2 inches broad, 7 inches long. There is a few-flowered raceme, with flowers like those of the members of the calceo lare group, but with the anterior triangular blade quite entire, as large as the flowers of Saccolabium bellinum, Mr. S. Low's importation. The sepals and petals are cuneate oblong blunt acute, ochre-coloured, with red spots. The lip forms a cupular spur, with the side laciniæ retuse and angular over the transversely triangular mid-lacinia. It has a few red spots at the yellow base of the spur and the blade (anterior lacinia) is nearly white.

I found it at Kew in August last. It is dedicated by desire of the authorities of that grand emporium, to the sender, Mr. C. Peché, of Moulmein. May this gentleman not only help science and horticulture, but do his best to watch the preparation of the plants. I think it would not be difficult to teach those who are genuine collectors that it is to their own advantage to collect in such a prudent manner as to keep a reserve *in loco*. They should not devastate single spots, but leave all young plants, plants with fruits, &c. Thus future harvests would be rendered possible, and future gain too. *H. G. Rchb. f.*

* *Saccolabium Pechei*, n. sp.—Foliis paucis loratis apice obtuse bilobis; racemo paucifloro; bracteis minutis; sepalis sepalisque cuneato-oblongis obtuse acutis; labelli laciniis lateralibus retusis argute angulato-abruptis supra basin laciniæ medianæ transverse triangulæ; calcari obtuse cupulari brevi. Flores ochroleuci maculis rubris. Labelli lacinia antica alba. Moulmein, Peché. (Ex. in Hort. Kewensi.). *H. G. Rchb. f.*

CYPRIPEDIUM × LINEOLARE (*col. exc. Norman Cookson*).

This was raised by Mr. Norman Cookson, and sent me by Mr. F. Sander. It comes rather near Cypripedium Willlamsianum ×. The leaves would appear to be very distinct, more acuminate, much smaller, simply green, with very light, obscure markings. A fresh leaf at hand, kindly sent by our veteran, Mr. W. S. Williams, shows a broader, less acuminate outline, and numerous sharp, dark, transverse designs. The shape of the flower is that of the just named species, yet it is smaller. Sepals white, with green nerves. Petals light ochre, with light mauve nerves on the side of the upper sepal, with green nerves on other side, with a few dark dots at base. Lip lightest ochre with lightest brown. Staminodes light ochre, with a few dark green nerves. Bract much shorter than the stalked ovary. It is quite a boon for lovers of the pallid undecided colours; but no boon for a botanist. *Certificats d'origine* are not given. *H. G. Rchb. f.*

CYPRIPEDIUM × DOLIARE, *n. hyb.*

This was raised by Mr. Norman Cookson, and sent me by Mr. F. Sander. It is very near Cypripedium × planerum. It is distinct by the leaves having very narrow dark bars, by the petals having no large black spots at all on the border, but simply green at the base, brownish-purple in front, and with very numerous point-like little dots at the base, well ciliate on the borders by the staminodium being dark brown with a lighter border. The cinnamon-brown lip is shining, very large, and suggested to me the idea of a cask. To my taste it is inferior to a neatly coloured × planerum, yet a nice thing amidst a set comprising some members with very sordid colours. The parentage is obscure, and I should not wonder if it came even out of the same seed-pod of planerum. If we continue to obtain hybrids of uncertain parentage we may, botanically speaking, sink down to a very deep level. *H. G. Rchb. f.*

STROPHANTHUS LEDIENII, *Stein.*

This is a new species, described by Mr. Stein, of Breslau, in the March number of the *Gartenflora*, 1887, t. 124, where a coloured plate of this interesting plant is given. The species was found in rocky places near Vivi, on the Congo, by Herr F. Ledien. The flowers are borne in umbels terminating the woody branches, each flower has a star-shaped five-lobed corolla of a buff-yellow colour, each lobe prolonged into a very long, narrow, ribbon-like tail. The corona and staminal apparatus which occupies the centre of the flower is violet, with five white rays. The species of Strophanthus are attracting attention now, not only on account of their singular and elegant appearance, but also for their medicinal properties.

TRITOMA CAULESCENS, *Revue Horticole*, March 16, 1877; see also *Bot. Mag.*, t. 5946.

This is a splendid species, remarkable not only for its arborescent habit, but also for its very glaucous leaves and its summer-flowering habit. M. Max Leichtlin speaks of it as very sensitive to cold and damp. The massive flower-spikes are borne on long erect stalks, the upper unexpanded flowers crimson-scarlet, the lower ones greenish-yellow.

POGOGYNE NUDIUSCULA, *A. Gray.*

This is a pretty Californian Labiate, with a dwarf compact habit like a Thyme, with tufts of linear leaves, and with small purplish bilabiate flowers. It is figured in the last number of the *Gartenflora*, 1887, t. 1241.

A DECADE OF NEW ADIANTUMS.

(*Continued from p.* 110.)

Adiantum Burnii, n. hyb.—Fronds evergreen, glabrous, broadly ovate acuminate, tri- or quadri-pinnate; pinnæ ovate, the lower ones with a long stalk, which gradually becomes shorter upwards, so that the upper pinnæ are almost sessile, the upper basal pinnules, as well as the upper basal pinnulets, more or less overlying the rachis; pinnules stipitate below, the basal one 2—2½ inches long, narrowly ovate, the basal pinnulets being compound, the upper ones still narrower because less divided at the base; pinnulets small with short slender pedicels, the lowest obovate or roundish, and frequently overlying the rachis, shallowly lobed, the intermediate ones dimidiato-rhomboid, lobed more or less freely and deeply on the anterior side, the terminal one larger cuneate and lobed at the end; sori numerous, roundish-reniform seated at the base of a notch in the apex of the lobes, covered by pale-coloured smooth indusia of the same form; veins dichotomously forked, the venules free; stipes smooth and ebeneous, the secondary rachides and pedicels very slender.

A garden plant, of which fronds were sent to us last year by Mr. J. B. Burn from the gardens at Cromer Hall, Cromer. It has quite the aspect of one of the so-called hybrids now becoming rather plentiful, and is distinct from any we have seen, possessing this peculiarity, that some of the fronds (less fertile than the others) have a more leafy character, the pinnulets being somewhat larger, and more deeply lobed, but in the same relative position, that is, in the apices of the terminal ones and the anterior side of those below them. The long stalk-like base of the pinnæ gives the central part of the fronds rather an open appearance. The overlying basal pinnules and pinnulets towards the apices of the fronds and pinnæ, are a little suggestive of A. concinnum being one of the parents, and the deeply lobed pinnulets of the more leafy fronds are rather indicative of A. amabile (Moorei) being also concerned in its origin, but we have no information on this matter, and it may be concluded that the origin is not known. The small roundish or obovate pinnules or pinnulets are about 3 lines in length, the intermediate rhomboid ones 5—2½ lines, and the terminal wedge-shaped ones 5 lines long. On the more leafy fronds with larger pinnules the basal ones are about 3 lines, the rhomboid intermediate ones 5 lines, and the terminal cuneateones 7 lines long.

A. fragrantissimum (Hort. E. G. Henderson).—Fronds deltoid, quadripinnate, glabrous, evergreen; pinnæ ovate spreading, the basal ones long-stalked; ultimate pinnules or pinnulets large, on long slender pedicels, cuneate, the terminal ones equally lobate at the apex, the lateral ones more or less obliquely wedge-shaped, also lobate, the lobes developed towards the apex on the anterior side; veins dichotomously forked, the venules free; sori roundish-reniform, placed in a sinus at the apex of the lobes, and covered by indusia of similar form; stipes and rachides glossy ebeneous, the secondary rachides and pedicels very slender.

This is a very handsome Fern, and quite distinct from anything previously known in cultivation. In the examples before us the fronds are from 1 foot to 15 inches long, exclusive of the stipes, which must add another 5 or 6 inches to their height, and about a foot broad at the base. The pinnules and pinnulets are not crowded, but the frond has rather an open character, partly owing to the length of the pedicels. The most characteristic feature, however, is the large size of the ultimate divisions, which at once arrests the eye as presenting a novel aspect amongst the forms with cuneate pinnules and pinnulets. The terminal ones are the largest, and measure 8 lines in

length, and 5—6 lines across the broadest part; while the lateral ones, which are rhomboidal with an elongated wedge-shaped base, are 7 lines long and 3 lines broad.

This plant is probably one of the supposed hybrids of which so many have recently appeared in cultivation. It was named at the Pine-apple Nursery, and was advertised by the Messrs. E. G. Henderson & Son some time since as being ready for sale, so that it is doubtless distributed under this name, to the fitness of which we are not able to bear witness, as the dry fronds in our possession are quite scentless. We, however, regard it as a very handsome and distinct Fern of the cuneatum type, but having an appearance totally distinct from that well-known and popular species owing to the larger size of its fronds, and the greatly increased magnitude of its ultimate segments, together with the length of their slender pedicels, which gives it a peculiar lightness of character. *From a MS. of the late T. Moore.*

(To be continued.)

NURSERY NOTES.

AMARYLLIS AT MESSRS. J. VEITCH & SONS.

There is at the present time to be seen at this nursery one of the finest displays of these gorgeous flowers in the country. The flowers observed afford evidence that the later production of the hybridist are acquiring a massiveness and a regularity of outline not found in the types A. aulica and A. reticulata, or their immediate descendants, the flowers partaking more and more of the tazza form, and showing, therefore, as is unavoidable, a certain monotony of outline, whilst developing much varied and gorgeous colouring. All, or nearly all, seem possessed of a great vigour, and when of matured age throw up stout flower scapes of 2 or more feet in height, and of sufficient strength to carry erect the two to four flowers found on each. The pots of bulbs are arranged in a central bed 20 yards long by 2 yards wide, holding 1050 plants; other bulbs for succession occupy the beds that skirt the wall, and number 1700.

In so large a quantity there are found some slight deviations in habit, some flowers being almost horizontally poised like a Tournesol Tulip, whilst others droop at various angles; and we think that for elegance these latter are to be preferred. As all the best are honoured with names for sale purposes, we have noted down some of those which are remarkable for colour and size of flower.

White.—The Bride, a great improvement on Lady of the Lake, the white being purer, although the flower may not ultimately reach the size of the last-named; Her Majesty, a variety certificated May 25, 1886, by the Royal Horticultural Society; Finetti, a very fine variety, marked with crimson lines; Telamon, having a broad greenish-white band on the segments; Beauty, much marked with cerise on the white ground colour; Coquette is a prettily shaped flower, marked similarly to the last-named; Rosslyn, a white with crimson lines, is another fine example.

Crimson.—Damia, Kudos, a very dark flower; Tennyson, a very large flower; Prince Albert Victor, Titania, of a rosy-crimson, a beauty; Empress of India, Sir Redvers Buller, an orange-scarlet; Casino, an extra good flower; Col. Burnaby, M. Capree, a very heavy flower and good form.

Cherry-red.—Temora, a very light colour with white at the base of the segments; a massive flower named Leoville; Nivosa, a fine thing, marked with reticulations of white; Fabiola and the Hon. and Rev. J. T. Boscawen. There are many flowers still to open that may present some even more charming colours than those named above. As decorative plants for the conservatory in early and late spring, there are few that beat well grown Amaryllis, and so easily are the plants grown that none should fail to do them well. They should be grown in quantity, when they might be employed as margins to groups of other flowering plants, or as groups themselves. The colours form a good complement to those of Indian Azaleas, and associate well with such brightly coloured flowers. *A. M.*

ORCHIDS AT QUEEN'S ROAD NURSERIES, CHELTENHAM.

Mr. Cypher's Orchids are at most seasons worth a visit, and certainly I do not think I could have selected a better time than the month of March. Just now the Cattleya-house is seen to great advantage, the magnificent banks of Cattleya Trianæ being all that it is possible to imagine, the display being made up of literally hundreds of blossoms of this lovely Orchids.

Another feature of beauty in the same house was observed in Cattleya intermedia, the flowers of which are a little later than those of the Trianæs; one fine specimen had no less than thirteen spikes, some of which had as many as eight blooms showing. Cattleya amethystoglossa was noted, one plant of which species had a spike with fifteen buds upon it just about to expand. These, with many Dendrobes and Cœlogynes, comprised the leading points in an unusual display of beauty that is not a transient one, but will last for many weeks.

Fig. 84.—Tobacco: Kentucky—Seed Leaf. (See p. 452.)

The Odontoglossum-house displayed many choice beauties, among which were the somewhat rare Odontoglossum Hallii anthoglossum with a spike of sixteen blooms; this is a fine cool-house Orchid, the lip pure white, heavily fringed, and with a few large spots of reddish-chestnut upon it; the sepals and petals are heavily marked with the same colour on a greenish-yellow ground, the segments terminating with the last named colour. This plant appears to be perfectly suited in the cool-house here in company with Masdevallias. The other cool Odontoglots consisted of forms of O. gloriosum.

Of Dendrobiums that were in flower may be mentioned a lovely pale yellow form of D. luteolum of an exquisite shade of colour, of which Mr. Cypher speaks in high terms, and the flowers possessing great endurance. D. nobile pendulum is a lovely form, as is also a form of D. nobile with more deeply coloured flowers than the type.

The little hybrid Dendrobe, D. rhodostoma, which appears to be always flowering, and is so distinct in colour and form from all else just now, was in flower, as were plants of devonianum, which is represented by a fine batch of healthy specimens. Messrs. Cypher appear to have mastered the culture of the Dendrobes, many of which are found so difficult of cultivation in some establishments, some of their success being attributed to the frequent use of liquid manure about the floors and stages. Some kinds, apart from those cited, as Ainsworthii, heterocarpum, Findleyanum, Wardianum, are exceptionally strong. The true Chatsworth variety of Cœlogyne cristata was finely in flower, and as here seen it appears to be identical with that known as C. cristata var. maxima; be this as it may, it is certainly a very fine form. In conclusion, I may remark that these disjointed notes must not be taken as representing the sum total of what may be seen in a place such as this is; on the contrary, are merely the jottings made during a very hurried visit. *Terrestrial.*

MR. B. S. WILLIAMS' SPRING EXHIBITION OF FLOWERS.

At the Victoria and Paradise Nurseries, Upper Holloway, a very large and varied show of spring flowers has been arranged, which is all the more praiseworthy and acceptable when we consider the long and trying winter through which we have just passed. The display commences in the show-house, and is continued through the large tropical-house to the Orchid and other houses containing the general nursery stock, and in each department a great many showy objects are in flower. To begin at the beginning, the cool show-house has the usual fine specimens of Tree Ferns, &c., in the centre, and one side is occupied by a very good collection of Tulips, Narcissi, Lilies of the Valley, &c., in flower, while the whole of the other side is filled with Hyacinths, some 500 bulbs, specially grown for the exhibition, being there arranged. The aim has been to get together a good representative collection of the best kinds only, new or old; and comparison shows that while many of the favourite older kinds still hold their own, some very good new ones have been introduced, which are worthy to keep them company, and in some cases, perhaps, to displace them. The varieties grown here, as well as in other places, are almost all singles, and among them the fine whites, La Grandesse and La Belle Blanchisseuse are very good; and in the same style, Mdme. Van der Hoop, even better, larger, and a clearer white. For pale blue or lavender Charles Dickens, Grand Lilas, and Lord Derby still seem the best. Other varieties prominent among the fine collection are Cavaignac, pink, with red stripe; Pelissier, red; Eclipse, bright red; Princess Helena, pink, with green tips; Vuurbaak, dark scarlet; Distinction, maroon; and Ida, and King of Yellows, clear yellow.

Passing through the large Palm-house and ferneries we come to the Orchids, which are in their usual vigour; the fine collection of Vandas, the large masses of Lælia purpurata, and the Cattleyas being specially attractive; in bloom we found some good examples of Cattleya Trianæ, a great variety of Lycaste Skinneri, Phalænopsis in variety, many species and hybrids of Cpripedium, Vanda suavis, and others; Cattleya Lawrenceana, C. citrina, Phaius maculatus. many species of Dendrobium, D. nobile, D. lituiflorum, and a well flowered pan of the rare Cœlogyne cristata alba.

The cool Orchid-houses were gay with flowers of Odontoglossum Alexandræ, O. Pescatorei. O. cirrosum, O. Cervantesii, O. C. decorum, O. Rossi majus, O. Edithæ, and others, and to give bright colours some good scarlet Sophronitis and equally brilliant Ada aurantiaca, as well as many Masdevallia ignea and M. Veitchii.

The house of Cliveas is one of the showiest just now, the side stages being arranged with Mr. Williams' strain of gigantic Cyclamens and with Cytisus, Azalea mollis, Lilacs, Staphylea colchica, &c., the centre being occupied by fine specimens of Cliveas in full bloom, the most distinct looking being Baroness Schroder, which has a very light centre and tips; C. cruentum, of fine shape and bright orange colour; C. Ambroise Verschaffelt, one of the largest and best; C. aurantiaca, the lightest yellow; and C. Van Houttei, a well-formed flower. The other division of this range contains the Amaryllis in flower, the bright scarlet kinds being especially excellent. Of this class Dr. Masters is the best, but Joseph Broome, Masterpiece, and

Empress of India, are very fine, while Comte de Germiny, bright rose-pink on clear white, may be called the best of the A. reticulata hybrids; also in bloom are many excellent seedling varieties, which show marked improvement over the named sorts of their kinds.

The Nepenthes-house, hung with Pitcher-plants overhead, has the scarlet-spathed Anthurium showing beneath. Many of the best forms of A. Scherzerianum are here, as also the mottled white and scarlet A. Rothschildianum, which is very effective. Among those of the Andreanum class, A. Leodiense has spathes of fine substance and very rich colour.

Among the other houses the Camellias are well in bloom; the greenhouse Rhododendrons have some good plants in flower, as well as the collection of New Holland plants. A batch of the snow-white Psychotria jasminiflora is also very pretty, and Tillandsia Lindeni, Ochna multiflora, and many other pretty things, are to be found in flower at this time in this establishment.

Fig. 85.—Tobacco: Big Frederick—Seed Leaf. (see p. 452.)

The Herbaceous Border.

BORDER CARNATIONS.

Now that the time for spring planting has come round border Carnations are amongst the first to require attention, and must be put into their blooming quarters early. Why is it we hear so many complain that these beautiful flowers prove unsatisfactory with them? The fault is, in the majority of cases, due to late planting, the plants not having time to make proper growth before flowering time arrives. Late planting is often done under the mistaken idea that Carnations are tender. I have for many years planted out large quantities, and my plan is to commence about the middle of February, continuing the work on all favourable occasions to the middle of April. Any plants kept in pots after that time get starved, thin, and drawn, hence the so oft heard cry, "Oh! I can't grow Carnations. Last year I bought some, and they ran up with just one flower-stem and did not make any 'grass,' and now my plants are all dead." To lay the foundation of success plant Carnations, Picotees, and all other of the family early in the spring. The following is a selection that ought to find a place in every garden, viz., Alice Agar, pearly white, striped carmine; Comte de Chambord, pale flesh, large and sweet; Prince of Orange, yellow, margined with carmine; General Stewart, deep crimson, fine form; Gloire de Nancy, pure white, Clove scent; Sailor Gordon, white, striped with coral; Guiding Star, bright scarlet; Mrs. Donaldson, rosy-pink, beautifully shaded; John Barnett, beautiful bright cerise; Pride of Penshurst, pure yellow self, not scented; W. P. Milner, pure white, very sweet; Walter T. Ware, rose-lake, striped yellow. *F. G.*

Primulas.

Amongst the many Primulas of recent introduction, three at least may be taken as acquisitions of a first-class nature; I refer to P. floribunda, P. obconica (poculiformis), and P. Rusbyi. The two first surpass all others by their continual blooming propensity, and the last named by the striking beauty of its large, deep purple flowers, relieved with the bright golden-yellow eye. P. floribunda is every year showing signs of improvement, both in the intensity of colour and the size of its flowers. A plant in flower at Kew at the present time, and the result of selection only, has flowers twice the size of those of the original plants, with the same continuity of flower, indeed the identical plant has been flowering more or less for the last nine or ten months, and is just now throwing up numerous new flower-stems, and as yet shows no signs of deterioration. At the meeting of the Royal Horticultural Society, December 7, 1886, a variety was shown by Mr. T. S. Ware, with white flowers; this is a decided gain, as white blooms about Christmas are scarce and much valued. All the forms ripen seed freely, and when sown as they are gathered, they germinate almost immediately. Seeds sown about the beginning of July make handsome plants for Christmas decorations. A well-furnished plant, with a dozen or more flower-stems, the large golden-yellow flowers of which are almost touching each other, is a very desirable subject during the dull winter months. Of P. obconica, with regard to its continuous flowering, too much can hardly be said: the flowers are larger than those of P. floribunda, and the plant continues throwing up fresh flowers at all seasons. P. floribunda is a native of the western Himalayas at low elevations, and does not prove hardy even in favoured positions in the south of England; P. obconica, a native of China, will no doubt stand out in mild winters, but we are afraid that in winters such as we had lately there is little hope for it. It can, however, be kept in a cold frame, where it will continue to flower all through the winter if frost can be excluded. P. Rusbyi is an American plant, larger than P. angustifolia or its near ally P. Cusickiana, the leaves are 2—6 inches long including the margined petiole, thin in texture, oblong or spatulate, and often denticulate; flower-stem 6—12 inches high with from 8—12 or more large deep flowers each about 2 inches in diameter, and with a pretty golden-yellow eye that shows it up in a striking manner. It is perfectly hardy in the open air, requiring a well drained soil and a cool shady situation. It should be copiously watered during the growing season, but care should be taken that no water lies stagnant around the roots. It was, we believe, first published in the *Bulletin of the Torrey Club*, viii., p. 122, and was introduced to cultivation two years ago by Mr. T. S. Ware, of Tottenham. P. Parryi is another charming plant, which we rarely see doing well in gardens. Dr. Parry, whose name it bears, says that he always found it growing by the sides of streams of ice-cold water, and when he was shown ours growing close to a little stream said "It may do well, but I am afraid your water is not cold enough." If cold is essential surely this winter will be favourable to its forming large flower-heads for the ensuing summer. It requires, however, a good depth and plenty of good rich soil to get strong growths, as it appears to be a gross feeder. *D.*

INDIAN ORCHIDS.

The Conditions under which they Grow.

Some Orchids are found confined to special situations and growing in a limited area; others, again, are widely distributed, and grow under various conditions of climate and temperature, which makes it difficult to distinguish the climatic conditions best suited to them.

Phalænopsis Cornu-cervi

is a plant to which the above remarks are specially applicable. This curious Orchid is found in abundance on the stunted bushes in the swampy islands at the mouth of the river Irrawaddy. In this situation, being exposed to the sun during the dry season, it loses its leaves, its roots being kept plump by the night dews, and it consequently has a distinct resting season. Plants of the same Orchid growing in the shade have no resting season, being a mass of blossom throughout the dry season, and losing none of their leaves.

P. Cornu-cervi is found from Akyub north, through-

out the whole of Burmah, down to Tavoy, Mergui, and Perak, south, in the Mergui Archipelago, and also in Java; occasionally in the hills, abounding in the plains, and flourishing luxuriantly in the dense shade of the forest, where it is protected from dry winds.

In 1870 the Bamboos in the jungle north of the road running from Pegu to Shoagheen flowered, and, as is the habit of many varieties of Bamboos after flowering, the Bamboo clumps died and rotted down, thus rendering it possible to penetrate into a forest which had been closed for years. The few scattered trees growing in the Bamboo jungle were Mango trees. The trunks of these very shady trees were found covered with huge masses of Phalænopsis Cornu-cervi, growing in the dense shade, where they had been unmolested for many years. The plants were perfect masses of leaf-growth of extraordinary vigour, and bore such quantities of flowers as would delight an English orchidist. This was the solitary Orchid found in this shady forest, and there is probably no other Orchid that would exist with so little light and sun.

Most Orchids are found on the outskirts of the forest, where there is plenty of light, or on the tops of the trees. The traveller may go for miles in the shade of the forest and never see an Orchid. It appears from these observations that to grow this plant to perfection, a very shady situation is necessary. Unfortunately the poor deciduous variety which bears comparatively very poor flowers is the one that survives the journey to England, the large non-deciduous one found in the jungle being too soft to travel.

A generous treatment best suits this plant in cultivation, and better flower-spikes are obtained by cutting back the old flower-stems just before the resting season. *Emeric S. Berkeley.*

THE HARDY FRUIT GARDEN.

GRAFTING.

The time has now arrived when this operation should be taken in hand before the trees begin to grow. If the trees were beheaded, as advised in a former Calendar, grafting will be now much facilitated. The branches to be grafted should be cut back to the required length, taking great care not to wound the bark; then split the bark down, and prepare and insert as many scions as are required, carefully binding them with matting, finally covering with properly prepared grafting clay, and taking care to exclude as much air and rain-water as possible. The clay may be covered with some moss, to prevent cracking, and in that way not fulfilling its purpose. It is not well to have the grafts made very lengthy for standard trees, as they are then rather liable to be displaced by the wind. Pear trees on walls should be grafted at the back or upper sides of the branches, so that the young shoot can be more easily trained to the wall afterwards. The choice of varieties must depend a great deal on local climatic conditions, aspect, and soil. It is always prudent to choose those kinds that are known to do well in your own district, although newer or little known kinds can be sparingly increased for experimental reasons. Those that can be grown as pyramids—thus saving valuable space on walls for more tender or early flowering sorts are Thompson's, Glout Morçeau, Beurré Superfin, B. Bachelier, B. de Capiaumont, Duchesse d'Angoulême, Pitmaston Duchess, Swan's Egg, Conseiller de la Cour, Louise Bonne of Jersey, Vicar of Winkfield, General Todtleben, Williams' Bon Chrétien, Bergamot d'Esperen, Zepherin Gregoire, and Marie Louise. This last Pear is only adapted for pyramids or bushes in the warmer parts of the kingdom: but its variety, Marie Louise d'Uccle, is much hardier, a good bearer, and much to be preferred for trees in the open.

There are two varieties of Pears that every one should find space for on south walls, and that well repay for this position by the large size of the fruits they yield—viz., Beurré d'Amanlis and Beurré de l'Assomption. The finest varieties for west walls are Jargonelle, Marie Louise, Glout Morçeau, Durondeau, Winter Nelis, Beurré Rance (good in some years), Pitmaston Duchess, Chaumontelle, Josephine de Malines, and one tree of each of Doyenné d'Eté and Bon Chrètien for an early supply. Those for east walls—Jargonelle, Fondante d'Automne, Marie Louise, Glout Morçeau, and General Todtleben. Knight's Monarch is most suitable to grow as a standard tree. The varieties that are here enumerated will yield a supply of fruit which will extend over a long period of time.

General Remarks.

The recent wintry weather has greatly retarded the flowering of Apricots, Peaches, and Nectarines, and the longer the opening of the buds is delayed the greater the likelihood of a good set of fruit. Flower-buds of Apricots are now opening, and protection should be at once applied, and every means taken to prevent loss from frost. The nailing of Peaches and Nectarines should no longer be delayed, so that it may be finished before their blooms expand.

Walls with Buttresses.

Such erections in a garden always afford fruit trees a great amount of protection from cold winds and frost, and when the fruit walls are so built, Morello and other Cherries, Figs, Pears, Vines, and Plums fruit excellently on them without any other means of protection. But where the walls are not built in this way the trees may be greatly protected by using 11-inch boards placed at intervals in an upright position, which will greatly break the force of cold winds, and help to ward off frosts; the boards should not be removed till the fruit is set, and all danger from frost is over. *E. Ward, Hewell Gardens, Bromsgrove.*

THE FLOWER GARDEN.

WORK TO BE DONE.

Pricking-out seedling plants of Pyrethrum and other plants should be attended to as soon as the seedlings are fit to handle These will succeed quite well in cold pits or frames. Secure a hard bottom, on this spread a few inches of half decayed leaves and then a couple of inches of fine soil of a sharp nature, into which the seedlings can be pricked, from 2½ to 3 inches apart. Ageratums, Verbenas, and hosts of other subjects, may be grown on in the same way. Some Stocks and Asters for early blooming may now be sown, but not the bulk of these as yet. Annuals which were sown in autumn in the reserve garden should now be transplanted, and successional sowings made. The potting of alpine and rare plants should now receive attention. Some of the Saxifrages, dwarf Phloxes, Stonecrops, and many other subjects, succeed best if a few pieces of limestone or freestone rock be placed in the pots, with just a little soil to fill up the interstices. The pots should be kept in a moderately moist state by frequent syringings during bright weather. When the plants have made roots they may be removed from the shelter frames, and placed in their summer quarters. To grow alpines well, a knowledge of their native habitats is necessary, so that the proper kind of soil in which to grow them may be supplied. For general use a mixture of light sandy loam, bog-peat, leaf-mould, and silver-sand, is essential. There are, however, certain subjects, which can only be successfully cultivated in frames, and sphagnum moss will be found of service when used alone, or mixed with the other materials. Frequent waterings through a fine rose will be necessary to keep up the requisite humidity of the air. Auriculas should not receive much water at present, although they must suffer from lack of it.

Bedding Plants.

Where there is a scarcity of pots it is a good plan to secure a quantity of turf about 4 inches in thickness, which may be cut into squares of about 5 inches in diameter; scoop out a hole in the centre and place a Pelargonium or Heliotrope in each, making them firm with a little light soil. Place the turves close together in a pit, and after all are placed put about a couple of inches of soil over the whole of the turves; give a good watering with tepid water, and keep the sashes closed for a few days. Plants thus treated will be in much better condition at planting out time than those in pots; and, moreover, they require little or no attention in the way of water prior to planting out, which is a matter of no small importance. Push forward the propagation of all such bedding plants as are required as rapidly as possible. When Pelargoniums have started to grow freely the tops may be utilised as cuttings, and, being small, the plants saved from these will come in for front lines and for lifting in the autumn. Pot off Cannas; many of the seeds will still be found in a dormant state, therefore lift those which have germinated from the seed-pans with a pointed stick, but let the pans remain otherwise undisturbed, as many more will be sure to come up later. Keep all young stock as close to the glass as possible, ventilating with caution.

Gladioli.

If not already obtained, the stock of these should at once be procured. It is best to visit the seed-shop and pick out your own corms, remembering that it is not always the largest corms which throw the best flowers, rather those of medium size and well ripened. Reject all which have black spots, as they are certain to throw unhealthy foliage. For early blooming some of the more forward corms may be potted into 5-inch pots, or one may be planted in the centre of a turf 4 inches square. Those should be partially charred to clear them of wire-worm. Place the potted corms and turves in a cold pit, allowing them to start naturally. If the soil in the beds intended to be planted with Gladiolus be heavy, it will be safer to start all the corms as recommended, and plant them out in May; but in light sandy soils they may be put out-of-doors at once. The ground for their reception should be well enriched with manure, which should be thoroughly mixed with the soil to a depth of 2 feet, as the Gladiolus is a gross feeder; it will also save much labour in watering. The corms should be planted a foot apart, the stronger ones 4 inches and the medium 3 inches deep. The stock of corms can be rapidly increased by sowing the spawn or offsets found at the base of the bulbs. Place those in light soil out-of-doors, and they will bloom the following year. They are easily increased from seed, and many of the seedlings are quite as good as named varieties. *W. M. Baillie, Luton Hoo Gardens.*

"THE BOTANICAL MAGAZINE."

(*Continued from p.* 381.)

Dillenius.—About the same date (1732) that Martyn's expensive project came to an end there appeared that wonderful monument of talent and industry, Dillenius's *Hortus Elthamensis*, concerning which Linnæus says:—"Est opus botanicum quo absolutius mundum non vidit." It is a handsome folio of 437 pages and 324 uncoloured plates,* illustrating 417 different plants, a large proportion of which, it is true, would be regarded by a gardener as botanical rather than ornamental. Nevertheless, it is a noble record of the beginning of the present era in flower gardening, and an enduring monument to the botanical skill of its author and the zeal of his patron, Dr. James Sherard, in cultivating flowers. His garden at Eltham, in Kent, which furnished the materials for Dillenius's book, is characterised as by far the richest

* On the authority of Sibthorp (Pulteney, *Historical and Biographical Sketches of the Progress of Botany in England*, ii., p. 182, in a footnote) it appears that Dillenius himself coloured some copies of this work, one of which he presented to the Bodleian Library.

then extant. Sherard accumulated wealth in London by practising as an apothecary, and subsequently retired to his country seat, where he devoted the greater part of his time to the cultivation of plants obtained from all parts of the world, though the bulk of the extra-European species were from America and South Africa. What in those days was termed the dry stove presented the greatest novelty, for the gardeners of that period appear to have succeeded better with succulent plants than any other class in their flue-heated houses. Sherard had, for the period, an exceedingly rich collection, comprising the genera Aloe, Haworthia, Gasteria, Cotyledon, Crassula, Mesembryanthemum, Opuntia, Pereskia, Phyllocactus, Euphorbia, and Kleinia. Of Mesembryanthemum alone fifty-four species are figured and described, and a clavis to the species is given, founded upon characters afforded by the leaves.

Philip Miller.

Before introducing the founder of the *Botanical Magazine* himself I should like to add a few words respecting that remarkable man, Philip Miller (the "Hortulanorum Princeps" of his day), and his publications, for they certainly mark an epoch in the history of gardening. Miller was born in 1691, and was the only man whom Pulteney knew who had seen the botanist Ray.* In 1722 he was appointed Curator of the Chelsea Botanic Garden, a post he held for the long period of forty-eight years, and died in 1771, the year after his retirement. He was a Fellow of the Royal Society, and enjoyed the friendship of some of the leading botanists of the day, though detractors of his merits were not wanting. His work, however, has rendered his name imperishable. Among his pupils were W. Aiton, author of the first edition of the *Hortus Kewensis;* W. Forsyth, his successor at Chelsea, and afterwards gardener to the King at Kensington; and his son Charles was the first Curator of the Cambridge Botanic Garden. Of his literary works, his *Gardeners' Dictionary* gained him a European reputation, and was translated into Dutch, French, and German. Linnæus said of this book, "Non erit Lexicon Hortulanorum, sed etiam Botanicorum." The first edition was published in 1736 in one folio volume; and this was followed by seven other editions in various forms during the author's lifetime. A ninth edition, in two very large folio volumes was edited by Thomas Martyn, 1797 to 1804; while George Don's *General System of Gardening* (1831—37) was founded on the same work. As a companion to the *Dictionary* he published two folio volumes of coloured figures of the most beautiful and useful plants.* This high-class and sumptuous work was issued in parts, and according to the original plan, was to include illustrations of one or more species of all the known genera of plants; but almost from the beginning of its publication Miller found it necessary, on account of the great expense attending its production, to limit it to a much narrower compass, and 300 plates was the extent it reached. This is only one of many instances of failure of illustrated botanical serials, owing to the too ambitious nature of the design; but this is a digression. Miller's *Figures of Plants* were mostly drawn by R. Lancake, and engraved by J. (in some places John) Miller, J. S. Miller (perhaps the same person) †, and T. Jeffreys. J. Miller also drew a considerable number of the plants, and a few were drawn by the famous German flower painter, Ehret, who settled in England, and married Philip Miller's sister.* Noteworthy among Ehret's contributions are two or three plates of Mesembryanthemum, Pinus halepensis, Quercus Ægilops, and two plates of the Castor-oil plant. Throughout, the drawings by the various artists are generally good, and often excellent, and the figures effective, though the colouring is frequently poor and unnatural—the greens, especially, being very weak. Nevertheless the work is a magnificent contribution to gardening and botanical literature, for, as Sir J. E. Smith observes,† the plates contain a greater amount of botanical detail than those of any previous English publication. The majority of the plants represented are hardy herbs, shrubs, and trees; fewer inhabitants of the "dry stove," chiefly natives of South Africa, and very few garden varieties of such genera as Rosa, Ranunculus, and Hyacinthus. *W. B. H.*

Fig. 86.—Tobacco: drying house. (see p. 452.)

* Ray was purely a botanist; but I find the following interesting reference in Pulteney's *Sketches* (i., p. 197):—"Among the variety of notes in this catalogue [*Catalogus Plantarum circa Cantabrigiam nascentium.* Cantab., 1660.] there is one possibly not of public notoriety. Mr. Ray informs us that the people of Norwich had long excelled in the culture and production of fine flowers; and that in those days the florists held their annual feasts, and crowned the best flowers with a premium, as at present." The passage referred to follows:—"Inter nos Anglos elegantium florum studio et cultura excellunt Norwicenses: qui, ut ab ipsis accepimus, quotannis Floralia celebrant, quibus de florum elegantia certatur, et victori florum sertum velut præmium porrigitur. Hinc gloriantur, Nordvicum suum dicendum esse vel urbem in horto vel hortum in urbe situm." (*Op. cit.*, p. 97.)

* *Figures of the most Beautiful, Useful, and Uncommon Plants, described in the "Gardeners' Dictionary," to which are added their descriptions.* 1755—1760.

† Doubtless the same John Miller, or Johann Sebastian Müller (a German who was born at Nurnberg in 1715, and died in London, 1780), who published an illustrated exposition of the Linnean system, &c. He was an accomplished artist, as may be seen from specimens in the Kew Library of a proposed issue of a hundred plates illustrative of plants and insects. Miller may have borrowed this idea from Ehret's *Plantæ et Papiliones Rariores Depictæ*, which the specimen plates equal, if they do not excel. At the time of his death, Miller had just published the first part of his *Icones Plantarum*, a folio of which only seven plates appeared. There is a set of both unlettered and lettered proofs of these plates at Kew.

* In Field's *Memoirs of the Botanic Garden at Chelsea* it is stated (p. 62) that Philip Miller married the sister of Ehret, but I have found no corroboration of this statement, and suspect it may be a mistake, because Sir J. E. Smith, in a biographical notice of Miller (Rees' *Cyclopædia*), specially mentions that Ehret married Miller's sister, though he is silent as to who Miller's wife was.

Since the foregoing note was put in type I have seen (*Proc. Linn. Soc. Lond.*, Oct., 1886, p. 43) the genealogy of the Grover and Ehret families, from which it appears that G. D. Ehret married Susanna Kennett, of Glidding, near Hambledon, "Sussex." This is doubtless all correct except Sussex, which is a mistake for Surrey.

† In Rees' *Cyclopædia*, where there is much horticultural and botanical information by the same writer.

SCOTLAND.

RHODODENDRON CAMPBELLIÆ.

This beautiful species of Sikkim Rhododendron is at present in bloom in the nurseries of the Lawson Nursery Company at Bangholm, Edinbugh. It is obviously closely related to R. arboreum, yet distinct in some respect, especially in the form of the base of the leaves, and in the ferruginous tomentum that covers their undersides. Dr. (now Sir Joseph) Hooker says of it:—"This may be called a tree, attaining as it does not unfrequently the height of 40 feet; detected in various localities at the elevation of 9000 to 10,000 feet above sea-level. On the summit of Tonglo it is the prevailing plant, and there, when in full flower, it exhibits a truly magnificent spectacle, gorgeous with scarlet heads of blossoms." Judging from the brilliancy of the specimen now in flower at Bangholm, Sir Joseph Hooker did not overpraise this beautiful species. It does not appear to be found at a lower elevation than 7000 feet, whereas R. arboreum is found ranging from 5000 to 8000 feet. Has it ever been tried in the open air in this country? The great elevation at which it is found would lead to the expectation that it were hardy in most parts of Britain. *W. S.*

The Old Oak Tree at Aberdeen.

A large staff of men have lately been engaged in clearing away the earth from the bottom of the old Oak tree which has stood since the year 1832 close by the river Dee at Aberdeen. It may be recalled that the tree was discovered in the course of dredging operations in the river Dee, and as it had undoubtedly been carried down the river during the memorable flood of 1829, it had been set up on the Inches by the inhabitants of Aberdeen as a fit mark to commemorate the flood. Alterations about to take place on the site which it previously occupied necessitated its removal to the Duthie Public Park, where it was, after much labour, "planted" on Monday, the 14th ult. The site selected for it is on the west side of the rockery, where the "venerabilis truncus" will once more raise its head to remind the inhabitants of the "great spate of 1829." Notwithstanding the length of time which it had stood in the ground it is still fairly fresh. The dimensions of the tree, or rather trunk, are 30 feet in length, 29 feet in circumference, and it weighs about 10 tons.

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APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

THURSDAY, Apr. 7—Linnean Society, at 8 P.M.

SHOWS.

WEDNESDAY, Apr. 6 { Royal Caledonian Horticultural Society, at Edinburgh (two days).

SALES.

MONDAY, Apr. 4 { 30,000 Lilium auratum from Japan, &c., at Stevens' Rooms.

TUESDAY, Apr. 5 { Imported and Established Orchids, at Protheroe & Morris' Rooms.

WEDNESDAY, Apr. 6 { Imported and Established Orchids, Border Plants, Plants from Ghent, &c., at Stevens' Rooms. Lilies, Tuberoses, Roses, and other Plants, at Protheroe & Morris' Rooms.

Tobacco Culture.

Considering the risks consequent upon our uncertain climate, and the enormous foreign supplies of superior quality to what we can hope to grow except under exceptional circumstances, it seems certain that Tobacco culture in this country must be a matter for the gardener and market gardener rather than for the farmer. In spite of a certain measure of success obtained last season by Messrs Carter, Messrs. Lucombe, Pince & Co., Lord Walsingham, and others, those gentlemen are careful not to counsel the British farmer to embark on the cultivation of the plant on a large scale, even if the Excise regulations permitted it. Again, the plant requires careful, thorough cultivation, such as a gardener is in the habit of giving, but which is not practised so fully by the farmer. For these reasons, then, we think Tobacco culture in this country is more likely to be an affair for the gardener than for the farmer, or, at any rate, if the farmer embarks in Tobacco culture he must, if he is to be successful, throw aside his rough-and-ready methods, and adopt the more elaborate procedures of the gardener.

Mr. E. J. Beale, lecturing before the Society of Arts recently, gave a brief statement of the experiments carried out by his firm last year, and has, moreover, embodied his experience in a useful little book, a copy of which is now before us.* Directions for the preparation of the soil, the sowing of the seed under glass in March and April, for the management of the seedlings, their transplantation, and subsequent treatment, are given, as well as full instructions for harvesting and curing. As these matters have all been treated of from time to time in these columns we need not stay to repeat them now—a step the less necessary as the present volume contains so concise a summary in so convenient a form. Referring to Messrs. Carter's own experiments we may say that they grew seventeen kinds, with a view to ascertain which sorts were likely to be best suited to our climate. Mr. Beale's book is mainly devoted to the illustration, description, mode of culture and preparation of each variety, together with the estimated cost in each case. Messrs. Carter, from their experience, divide the sorts grown by them into two groups, according as the leaves are ascending, as in the variety called Kentucky (fig. 84, p. 448), or reflexed, as in the variety known as Big Frederick (fig. 85, p. 449). Of these we are enabled to give illustrations, thanks to the courtesy of Messrs. Carter. Both these varieties are early ripeners, and as such better adapted to our climate than others which might be spoiled by our cold wet autumns.

The leaves when ripe were dried in a barn under unfavourable circumstances, which could, however, readily be provided against in future. A proper Tobacco oast or "firing" place could be arranged so as to suit the requirements of several neighbouring growers. The "handing" the Tobacco, or stripping the leaves from the stalks and tying them in bundles, is illustrated in our figure, fig. 86, p. 451. The first year's experiments were fully as successful as could have been anticipated. Messrs. Lucombe, Pince & Co., of Exeter, estimate the cost of production at about £25 an acre, and the proceeds at about £30 to £40, leaving a profit of £10 an acre, supposing the Tobacco to realise 9*d.* to 1*s.* per pound. Messrs. Carter's figures are similar. They assign £25 7*s.* 8*d.* per acre as the cost of cultivation and preparation, and assuming the cost to be not less than 4*d.* per pound their experiments show a nett profit of from £10 to £24 an acre according to the variety grown. Messrs. Lucombe, Pince & Co. employ no manure at all, while Messrs. Carter recommend rotten manure and guano.

Future experiments will show the best method of cultivation, the best manure to employ, and the best season to pluck the leaves. Probably it will be found more advantageous to collect the leaves in the evening than in the morning. All these are matters which demand lengthened experience; but experience will be much facilitated, and its acquisition hastened, by carrying out the experiments with scientific foresight and method rather than by mere rule of thumb.

The following extract may serve to illustrate the way in which Mr. Beale deals with his subject:—

Tobacco—Big Frederick.— This is very distinct as well as being one of the earliest and most productive of all the horizontal or drooping-foliaged varieties. It is a strong grower, and appeared to thrive equally with any other kind in our English climate.

The leaves—as shown in the illustration, fig. 85, p. 449—are very long, somewhat lance-shaped, with points of medium length.

As the plants mature the surface of the leaf of this variety becomes considerably corrugated, the outer edges showing indications of a faint yellow colouring as they ripen upon the plant. The midrib is of a pale yellowish-green colour, the lesser ribs or veins being very acute and marked. Colour of flowers rosy-salmon.

The leaves of Big Frederick are of immense substance, and, although very gummy, appear to be less sappy than many varieties of the semi-erect types. The main stem is hard and thick, with an average distance of about 2 inches between the leaves; nine leaves being left on each plant after being "topped."

Average height of plant when topped (Sept. 15) ...	40 in.
Average length of largest leaves ... ,, ...	27 ,,
Average width of largest leaves ... ,, ...	13¾ ,,

Estimated Balance-sheet.

Showing cost of production, and average value of a crop of 1 acre of Big Frederick. The value of the produce of this variety being calculated upon the estimated weight of seventy-two plants, as grown by Messrs. Carter, including all leaves, good, bad, and indifferent, which, when stripped from the stalks and cured, were judged to weigh 45 lb. (but this variety was not actually weighed), or equal to about 3000 lb. per acre, allowing 4840 plants per acre.

The absence of actual weights in this particular instance is accounted for from the fact that Messrs. Carter had begun to pack down the variety before they thought of putting the Tobacco upon the scales.

	£ s. d.	£ s. d.
By produce of Tobacco cured ready for sale to manufacturer, say 3000 lb. at 4*d.** ...		50 0 0
To rent of land and buildings, including rates, tithes, and taxes, at 60*s.* per acre	£3 0 0	
3 ploughings, at 10*s.* per acre each time	1 10 0	
2 harrowings, at 1*s.* per acre each time	0 2 0	
9 loads farmyard manure delivered on land	2 8 0	
Spreading farmyard manure	0 1 3	
3 cwt. Peruvian guano, at £12 per ton	1 16 0	
5000 plants, at about 15*s.* per 1000 ...	3 15 0	
Planting ditto, 1 man 1 day, 3*s.* 2*d.*; 1 boy 1 day, 1*s.* 3*d.*	0 4 5	
2 horse-hoeings, at 3*s.* per acre each time	0 6 0	
Manual labour, hilling, and side-hoeing twice over, at 7*s.* per acre each time	0 14 0	
Pruning, topping, and suckering, at 8*s.* per acre	0 8 0	
Cutting, at 5*s.* per acre, carting to barn and hanging, at 12*s.*	0 17 0	
Firing, 2 loads waste hard wood to be found on the farm (charge for labour only)	0 16 0	
Man's time curing and attending, &c., 2 weeks at 15*s.*	1 10 0	
Stripping, sorting, bulking, and packing, say 3000 lb., at 5*s.* per 100 lb....	7 10 0	
		24 17 8
Average profit upon 1 acre ...		£25 2 4

The Scilly Islands.

At various times we have had occasion to speak of what has been accomplished in and for these islands by their former and present proprietors. They afford an excellent illustration of what may be done by enlightened judgment and decision. Barren islands, affording but a precarious subsistence to a few fishermen, have been converted by the energy of the late Dorrien Smith, Esq., and his successor of the same name, into veritable pleasure spots, while the productive resources of the islands have not only been developed, they have actually been created. Blessed with a mild equable climate plants will flourish out-of-doors there which require protection even on the adjacent mainland. We add to-day to the other illustrations we have given of Tresco Abbey and its gardens, one of the flower gardens with the stately Dracænas (Cordyline australis), which give such a tropical aspect to the grounds. Our supplementary illustration, from a photograph of Gibson of Penzance, speaks for itself. Of late years a new industry has been added to the resources of these islands. Why should the London markets be so exclusively supplied with spring flowers from the South of France? Why should not our own countrymen have a share in such profitable and innocent enterprise? The only reason was that the Scillonians themselves were unable to inaugurate or carry it out of themselves, but when the matter was set going by the forethought, judgment, and capital of the landlord it has been carried to a successful result by the natives. We have before us as we write the prize list of the flower show of the Scilly Islands Bulb and Flower Association, which held its annual Narcissus Show on Tuesday, March 22. To show what progress is being made, we may say that the exhibits of Narcissi alone occupied 400 feet of staging, and that the number of

* *English Tobacco Culture, &c.* Edited by E. J. Beale, F.L.S. London: E. Marlborough & Co. Small 8vo, 118 pp., with numerous illustrations.

* It is considered that 4*d.* per pound is the lowest value at which average quality Tobacco can reasonably be placed.

DRACÆNAS, AT TRESCO ABBEY, SCILLY.

entries was 540 as compared to 360 last year. Mr. Dorrien Smith himself contributed for exhibition no fewer than 162 varieties, all grown out-of-doors. The judges were Mr. Peter Barr and Mr. Perry from Mr. Ware's, Tottenham, and we understand that they expressed great satisfaction at the display put before them.

The prize-list contains some sixty-eight classes, in the great majority of which all three prizes were competed for and won in each class. In addition to varieties of Narcissus, there were classes for Chionodoxa, Anemones, Allium neapolitanum, Hyacinths, Marguerites, and Freesias. A little wholesome agitation of like character might develope and even create similar prosperity in another island of larger dimensions!

The Gardeners' Royal Benevolent.—The following announcement well illustrates the benefits which this Society renders, and the claims it has on the support of gardeners:—

"Died, on the 25th ult., Mrs. Susannah Falconer, at Cheam, aged ninety-two, widow of the late James Falconer, thirty-three years Gardener at Nonsuch Park, Cheam. He was a subscriber of a guinea a-year to the Institution for fifteen years (and also a member of the committee). He died in 1858, when his widow, the deceased, was placed on the pension list, without any election, at the age of sixty-three; hence she has been on the list for twenty-nine years, and has received the sum of £356"—a pretty good return for £15 15*s*. expended.

Grand National Dahlia Show.—As copies of the schedule of prizes have, as we are informed, been issued without an intimation of the fact that the Turner Memorial Prize and the five classes in which the Veitch Memorial Prizes are offered, are open only to amateurs, it is necessary that the restriction be announced. An amateur is in this particular competition, any one who is not actually a trader. The class for nine self-coloured Dahlias may include what are known as shaded flowers, and that for nine particoloured Dahlias includes flaked or striped, lace-edged and tipped flowers.

Amaraboya princeps.—Judging from the figure in the February number of the *Illustration Horticole*, this is indeed a superb plant. It has the ovate ribbed leaves, purple on the under surface, as in so many of the Melastomads. The flowers are borne in a truss at the end of the stem, each flower measuring 3 inches across, and being of a rich crimson colour, with a white throat, from which radiate a number of tooth-shaped white processes, which we suppose are stamens, but the botanical details are obscure in the drawing. M. Naudin, whose competence in the matter is universally acknowledged, declares it to constitute a new genus. This magnificent species is a native of New Granada.

The Gardeners' Orphan Fund.—At a meeting of the Provisional Committee, held on Friday the 25th ult., the preliminary expenses attendant on inaugurating the scheme were guaranteed by those present. The treasurer, W. Richards, 41, Wellington Street, Covent Garden, W.C., announced a small sum as already paid into the bank. The Chairman, Mr. George Deal, proposed a scheme for consideration, which was discussed, paragraph by paragraph, and which is to be printed, and submitted to a meeting to be held at South Kensington on April 12. It appears to us, however, that no definite arrangement can be made until we know what amount of donations and subscriptions may be fairly calculated on. As usual in such cases many are waiting to see what others are going to do. This course is natural enough, though one greatly to be deprecated, for those who have the will and the means should come forward publicly at once to facilitate the work of those on whom will fall the burden of floating the scheme. Mr. Barron, Royal Horticultural Society, Chiswick, is the Hon. Secretary, and to him or to the Treasurer promises of support or, better still, donations, should be at once sent. A considerable number of gardeners have written to us to suggest the formation of a benefit society, especially for gardeners out of employment, but the advocates of these proposals are in a minority, while at the meetings hitherto held the Orphan Fund has secured the unanimous assent of those present. In addition to the fact that benefit societies already exist, and in view of the numerous objections which might be raised to the formation of a new society of this class, it will, we think, be well to dismiss this proposal from consideration altogether and to devote ourselves to promoting the success of the Gardeners' Orphan Fund. Those who prefer to affiliate themselves to a benefit society are advised to communicate with the Secretary of the United Horticultural Provident and Benefit Society, Mr. W. Collins, The Gardens, Chevos House, Poynder's Road, Clapham Park, S. W.

Lewisham and District Floral Societies.—The Grand Summer Exhibition and Floral Fête will be held on July 20 and 21.

Birmingham and the Queen's Visit.—In decorations and illuminations the Midland hardware town came out well, and although the morning of the Queen's visit was stormy, bright weather ruled the day, and the utmost enthusiasm prevailed. Plant-decoration was adopted to a great extent in the fine pavilion erected for the laying of the foundation-stone ceremony by Her Majesty, and handsome groups were displayed advantageously. The Council-house, a stately, handsome building, was illuminated, and a handsome group of Deodar Cedars, from 12 to 15 feet high, in front of which were specimen Palms and other plants, with a margin of Azaleas and other plants, was placed over the spacious portico, and in the interior of the banqueting-room groups of plants were also placed. It was at the Town Hall, however, where the greatest taste was necessarily brought into play, and artistic arrangements were general. About the dais choice plants were grouped, and in the luncheon-room Palms and Ferns, white Lilacs, Lily of the Valley, Maréchal Niel Roses, and newer sorts of Clematises in small pots trained over the mirrors, gave a most pleasing effect. The other private rooms, chief entrance to the hall and corridors, were all filled in with plants. The whole of this work was entrusted to Mr. W. Spinks, the manager of Hans Niemand's nurseries, as well as the supply of the two bouquets ordered by the Mayoress for presentation to Her Majesty and Princess Henry of Battenburg. More than 5000 plants were used by Mr. Spinks, including many fine specimen Palms. Mr. Charles Winn, whose celebrated collection of Orchids at Silly Oak is well known, supplied, expressly for the Queen's luncheon-room, a fine lot of cut Orchids and Ferns. Messrs. Thomson, seedsmen and nurserymen, High Street, constructed for the reception committee a treble arch in front of their shop, in which rustic-work was largely used, with cut evergreens, and balconies and baskets of flowers; and Mr. R. H. Vertegans, Chad Valley Nurseries, presented a handsome bouquet to the Mayoress, and supplied another for presentation to the Queen by the children of King Edward's Grammar School.

Rural Economy.—Dr. Gilbert has been re-elected to the Sibthorpian Professorship of Rural Economy in the University of Oxford, and will continue his lectures on the experiments carried out for the last forty years at Rothamsted. We learn that it is probable these lectures will eventually be published, and will form a systematic summary, in a useful form, of the results of the gigantic series of experiments and agricultural research in which Sir John Lawes and Dr. Gilbert have for so long period been associated.

Jean Jaques Kickx.—Our Belgian friends have sustained most severe losses of late, and we deeply regret to have to add to the list the name of Professor Kickx, the Rector and Professor of Botany in the University of Ghent, Director of the Botanic Garden and of the School of Horticulture of Ghent, and President of the Botanical Society of Belgium. He was born in Ghent in 1842, and died in the same city on March 27. Professor Kickx, the son of an eminent botanist, was modest and retiring, so that he was not widely known outside his own immediate circle; but to those privileged to know him he was as genial as he was well read. As Director of the School of Horticulture Professor Kickx presided lately over the jubilee festivities in honour of his colleague, Professor Pynaert.

Spring Flowers.—The *Daily News* of the 28th ult. gives its readers a nice little lesson in natural history and botanical geography. The illustrations it makes use of are of near kin to the extraordinary Gooseberry, but, as will be noted, they differ by flowering at this season, while the berry in question usually arrives at perfection during the parliamentary recess. The herborising excursion which our contemporary invites us to share is one full of interest and entertainment. Fond as we are of botanical rambles and of indulging in a "look round" a good collection of plants, we have rarely experienced so much improvement of our minds as has been afforded us by the *Daily News*. Our readers shall be allowed to share our pleasure in a measure by means of a few "gatherings." For instance, we are told that the common Buttercup is not a native, that the Foxglove has come to us from the Canaries, while our list of conspicuous flowering plants dwindles down to some half-a-dozen, including the single white Eglantine, whatever that may be, but omitting all that we had thought most beautiful, the Water Lilies, the Lythrums, and many others. The Honeysuckle is a foreigner, though the writer is "not quite sure whether one species does not belong to us. The Laburnum is a Hungarian, the Jasmine is a Circassian, the Dahlia comes from China, the Pink is an Italian, the Geranium reached us from Flanders, the Fuchsia comes from the Pacific"—a sort of seaweed, we presume. Chaos, Cosmos! Cosmos, Chaos! What statements are these? If horticultural journals, leaving their own specialties, were to take to dilating on political topics, we fear the *Daily News* would pay but little respect to our lucubrations. We may ask whether our daily contemporary, by the admission of such astounding presentments in one department does not run the risk of shaking confidence in others. We make an offer to our contemporary. We, doubtless like most of our colleagues of the horticultural Press, receive weekly far more "copy" than it is possible to insert. Subject to the approval of the writers, we offer the surplus to our colleagues of the daily Press, with our own services as editor. Of course, considering that we undertake to save them from the commission of such terrific blunders, our terms will be proportionately high.

The Hellebores at Kew.—The Hellebores on the rockwork at Kew are still in full bloom, the profusion of flower being extraordinary. A hybrid between H. colchicus and H. guttatus in particular is very remarkable for the masses of purplish flowers it throws up. H. colchicus itself and H. abchasicus have purple flowers, H. purpurascens has flowers of livid hue, while H. intermedius has the sepals purplish outside, and of a curious metallic green on the inside. H. antiquorum has greenish blooms flushed with rose, H. olympicus, and H. orientalis white.

Hyacinths at Garaway's Nurseries.—A grand display of Hyacinths is now to be seen in Messrs. Garaway's, Durdham Down Nurseries, Bristol. It is open to all who may feel disposed to inspect them, and as there will be no spring show at Clifton this year more than ordinary interest is centred on the well grown collection under notice. Upwards of 300 bulbs are flowered, a great number of them being in excellent condition, and afford a

capital opportunity of comparing and selecting varieties for cultivating next season. What are believed to be the best of both old and new sorts are on view, and of these the most noteworthy are La Grandesse, L'Innocence, Madame van der Hoop, Snowball, Alba maxima, Nectar, and Mont Blanc, white; Incomparable, Macaulay, Prima Donna, Queen of Hyacinths, Vuurbaak, King of the Reds, and General Pelissier, red; King of the Blues, Leopold II., Lord Wolseley, blue; Lord Byron, Czar Peter, Grand Maître, and Charles Dickens, pale blue; Prince of Wales, General Havelock, Sultan, Chimney Sweep, Souvenir, J. H. Veen, dark blue; Marchioness of Lorne, yellow tinged and striped with red; Queen of the Yellows, Primrose Perfection, Obelisque, and Ida, yellow; Prince of Wales, bright rose; Gigantea, pink; and Garibaldi, deep crimson.

The Leaf-twisting of Narcissus—Mr. Burbidge writes as follows:—

"Is it at all generally known—and, if so, has the fact been recorded—that the erect leaves (foliage) of the flat-leaved group of Narcissus always twist from left to right, whereas the floral leaves, or perianth segments, show a tendency to twist from right to left? I never noticed this peculiarity until a few days ago, and then my attention was drawn to it by Mr. W. Roberts, one of the Fellows of Trinity College, Dublin, and neither he nor I could find any marked exception to the rule among the broad-leaved Narcissi in the college gardens, where a large collection of all the Narcissi is grown. In Daffodils and Polyanthus Narcissus this system of leaf-twisting is most marked, but the Corbularias show it least, and may even prove exceptions to the above rule. In Corbularias, and in N. triandrus, the tendency seems for the perianth lobes to twist from left to right, and the foliage twist varies on the same bulb, some leaves twisting from left to right, and others from right to left. But as the foliage leaves of Corbularias often become reflexed, prostrate, or pendulous, and as the perianth lobes of N. triandrus are also reversed as compared with those of the Daffodil or Ajax section, the action of light, or of gravitation, may operate on these in a different way. Be this as it may, it is something to be convinced that all the flat erect leaved Narcissi, all the Daffodils, all the N. incomparabilis, all the N. Tazettas, and many others, have their leaves twisted to the right, and their perianth lobes to the left.

"Of course it is now well known that gyration, or circumnutation, is by no means confined to climbing or twining plants, but is found in all plants in a greater or lesser degree, and in such bulbous plants as Crown Imperials, Lilies, and Narcissus, it is very much emphasised, as also in the flower-stems of Tritomas or Kniphofias, and in the scape of Narcissus dubius as figured by Rédoute. I have many other observations in connection with the spiral development of plant-stems and scapes, but as the Narcissus season is now at hand I wish to record the above, in order that growers may pay some attention to the leaf-twisting to which I have above referred."

The Late Professor Eichler.—We take the following remarks from a recent number of the *Garten Zeitung*, as supplementary to our own notice in a previous issue:—"Eichler's lectures were very well attended, his power of imparting knowledge being excellent. He was not particular as to mere prettiness of speech, but his utterances were simple, clear, and distinct. He was no less an able administrator. There were numberless matters in the establishment over which he presided which required modernising, and especially the botanic garden itself. How well he succeeded in his efforts, supported on the scientific side by Dr. J. Urban, and in practical horticulture by Garden-Inspector Perring, may be seen by the present condition of the Berlin Botanic garden. The garden, which was formerly visited by students only, is now the most popular place of instruction and recreation in the Potsdam quarter of the town—too popular one might say in the interest of the plants. Amongst Eichler's improvements and creations, particular mention must be made of the geographical grouping of the plants; the new Victoria-house and the collection of outdoor aquatic plants. The botanical museum, which was sanctioned in the time of A. Braun, was erected; but it was necessary to furnish it, and to arrange in a suitable manner the Royal Herbarium as well as the collections of fruits and seeds, and to make alterations in the management. Here, as in other cases, Eichler selected the right men for the right places, men who were all zealous to make the new creations successful. Eichler's pride was in the museum, and he had a right to be proud of it. In the main saloon, amidst a magnificent display of plants, his remains were placed previous to burial, which took place on March 5, at Zwölfapostelkirchof. The ceremony was very numerously attended, and by many persons from distant parts, as by Professor Dr. Engler, Breslau, and Professor Dr. Drude, Dresden."

Competition in Germany.—In these islands we are apt to imagine that the number of candidates for any appointment that may be vacant is far in excess of anything of the kind on the Continent. The following statement tells a different tale. For the post of Superintendent of the Central Cemetery, Hamburgh, 268 candidates came forward, the lucky man being Herr Christian Koopmann, who was for a short time at Chiswick, and afterwards in the gardens of Sir Trevor Lawrence, Burford Lodge, Dorking.

Jambul Seeds.—A correspondent of one of the medical journals calls attention to the value of these seeds (the produce of Eugenia Jambolana) in chronic diabetes. In what way the seeds influence this mysterious disease is not stated.

Daffodils.—Mr. Hartland sends us further examples of his skill as a cultivator and judgment in selection in the shape of an assortment of fine examples of fine varieties, which, however, we cannot particularise. A bouquet of N. eystettensis, or capax plenus, mixed with starch Hyacinths and backed up by the glossy deep green foliage of Azara microphylla, was very effective.

General Greig.—We are sorry to see, from an announcement in the *Journal of Horticulture*, that this gentleman has lately died. The General was of Scottish descent, and as President of the Imperial Horticultural Society of Russia was conspicuous for his kindness and hospitality to the visitors to the International Horticultural Exhibition in St. Petersburg in 1869.

Improvements in Hot-water Boilers.—A patent has been granted through the agency of Messrs. Hughes, Eli & Hughes, of Chancery Lane, to William Lindsay Milne, of New Hampton, for "Improvements in the Construction of Hot-water Boilers."

Fruits Under Glass.

PINES.

The severe weather of the last month will have rendered it rather difficult to maintain the proper degree of moisture and night temperature in early forcing houses. Probably this can only be done in the best built and heated structures, all others will have been sorely tried by the great cold of the past month. The fruiting plants should have a night temperature of 70°—75°, and 5° more in the daytime with fire-heat, running it up to 85° with sun-heat and air, which should be admitted when the thermometer registers 80°, and a bottom-heat of from 90°—95° should be given. Give succession-plants a night temperature of 65°—70°, according as the weather is cold or otherwise, with 5° more by day and fire-heat, and 10° with sun-heat; 5° less of heat will suffice for young plants. Damp the plunging material and the pathway every morning, and again in the afternoon at closing time, when the plants should be damped lightly overhead, not wetting the crowns of the fruits, and the temperature run up to 90° to 95° will be none too high for plants swelling their fruit.

To afford support to the fruit and keep it in an upright position, two sticks should be placed firmly in the soil—one on each side of the plants—and the fruit should be secured thereto by two sets of ties of strong string fastened above and below the fruit, the top ties being fixed in a downward notch in the sticks at about an angle of 30° from the top of the fruit, to allow of the latter growing erect without being hampered. In connection with the supporting of Pine-apples it is very important that clean sticks should be used for the purpose—that is, sticks free from white or other kinds of scale insects, as it not unfrequently happens that Ash and Hazel saplings are infected with white scale when brought from the woods, which, if the sticks be used in an unpeeled or unprepared state, would probably get on the plants and multiply rapidly, proving as vexatious in its consequences as the much-dreaded Coccus bromeliæ or Vine scale. Hence it is that I recommend the readers of the *Gardeners' Chronicle* to do as I do, viz., prepare the necessary number of sticks for supporting the fruits for one year as early in the spring as possible, immersing them in a copper of boiling water for fifteen minutes.

Cucumbers.

The stopping, thinning, and tying of the shoots will now require attention almost daily, especially such as have been fruiting all the winter. These, if so desired, can be kept fruiting satisfactorily during the ensuing season by removing all decayed portions of wood and leaf, and by encouraging a free growth of young wood, which should be tied up to the trellis, the old wood by cutting it away wherever practicable. This must be followed by taking off a couple of inches of the impoverished soil from the surface of the bed without much disturbance of the roots, replacing it with three parts good turfy loam and one of horse-droppings. Copious applications of tepid diluted liquid manure will still further promote vigour in the plants and carry on the bearing season for six months longer. Maintain a night temperature of from 65° to 70°, and 75° by day, with fire-heat, allowing the thermometer to rise 10° or 15° higher with sun-heat, and see that the bottom-heat does not fall below 75°, or rise above 90°. Admit a little fresh air to the house at 75° on bright mornings, increasing the quantity given progressively with the rise of the temperature until it reaches 85°, at which point it should be kept until closing time (about a quarter to 3 o'clock in the afternoon), when the plants and all surfaces should be syringed with warm water. Young plants should have some soil added to the hillocks as fast as the roots protrude, and should aphis appear fumigate with tobacco-paper on two successive evenings, syringing the plants well the following mornings, and ventilating more freely than usual for a couple of days. *H. W. Ward, Longford Castle.*

Plants and Their Culture.

CAMELLIA-HOUSE.

As soon as the blossom is over free growth must be encouraged by keeping a warmer and closer temperature; to this end less air should be admitted, with early closing and heavy syringing be adopted. The water used should be tepid, and the surfaces of the walks and beds be moistened to promote a humid atmosphere. Under these conditions rapid growth will be made if the plants be healthy, and plenty of space will be required for them. Close attention must be paid to watering, so that the roots may on no account suffer through want of water at this period. Watering with clarified liquid manure of sheep-dung and soot will be very beneficial, and failing this, Clay's or some other good concentrated manure should be used occasionally as a top-dressing. Light shading in the form of thin tiffany should also be employed to prevent the young foliage as it develops from being scalded. Where there is no Camellia-house proper the plants should be placed where they can be treated in the manner described.

Azaleas.

Forced Azaleas after flowering should be placed near to the glass in the Camellia-house, the conditions maintained being very suitable for them until they set their blossom-buds, and some concentrated manure should be used to stimulate growth, removing carefully all seed-vessels without damaging the young shoots, and as these lengthen, the strongest may be stopped to cause them to branch. Thrips, which are often troublesome, and soon disfigure the foliage if allowed to remain unchecked, must be destroyed on their appearance, using some approved insecticide for the purpose. Young plants intended for specimens, and which have consequently been disbudded so as not to be weakened by flowering, should be potted as soon as the roots show signs of growth, using as a compost, fibry peat, broken up moderately fine, and made more porous by silver-sand. The potting should be done quite firmly, and the plants afterwards be kept tolerably close, and syringed daily, but no kind of fertiliser need be used until the roots have worked well through the fresh soil. Plants intended to flower late must be kept very cool, and be shaded when their blossom-buds expand. *Thomas Coomber, Hendre Gardens, Monmouth.*

MESSRS. W. CLIBRAN AND SON'S NURSERIES.

Messrs. W. Clibran & Son's Oldfield Nurseries, a mile from the Altrincham station and seven miles from Manchester, are, in their present enlarged condition, a proof of the advance of horticulture everywhere, and of the horticultural requirements of populous neighbourhoods. They commenced gardening fifteen years ago on half an acre of land, with a thousand feet of glass only, and one man to help. They have now two acres covered with glass, a nursery of more than fifty acres, and they employ sixty hands regularly and pay a large annual labour bill. This success in bad times is no doubt partly due to the improvement of plants and the careful growth of strong saleable specimens, and to the means taken for advising the public of the stock on offer —through the Press in the usual way, and in some measure, perhaps, through the numerous visitors, who can always find a flower show in the Oldfield Nurseries, which they attend by thousands from the Lancastrian towns without paying an entrance fee.

At the proper season, in a good climate for such shrubs, we should have seen both in the nurseries, and in many a well-kept garden in the district, a beautiful display of Rhododendrons; but in gardens devoted to a large general trade the stove and greenhouse plants, even in the winter, offered plenty of attractions as the outdoor shrubs, fruit trees, Roses, alpine and hardy flowers, would have done at another season. At the time of our visit we were interested to find that a quantity of plants had just been packed for Bombay, including a number of tropical Ferns which are going from the stoves of this establishment to a country where glass will be found as necessary as it is here, not on account of cold but to shelter these particular subjects from the sun, and to secure for them the moist atmosphere which they require.

We were pleased to learn that Messrs. Clibran have paid special attention to many of those good old plants which are now becoming scarce, notwithstanding their merit—plants in the culture of which Mr. T. Baines excelled, especially natives of New Holland, and many fine varieties suitable for stoves and for exhibition. Messrs. Clibran have succeeded in mastering a ready method of propagating the scarce Acacia pubescens. They state that seed imported as that of Acacia pubescens had seven years' trial at their hands, and invariably proved to be that of A. affinis. The rarer species is by far the most elegant, not to mention its abundant bright yellow and sweet-scented flowers, and this sort they now propagate with ease entirely at home.

Another plant which they consider amateurs should grow more largely is Clianthus magnificus, which grows and blossoms freely here in a cool house, and is found easier to cultivate and bring to the flowering stage than C. Dampieri. The latter rarely does well after the second year, while the former is still luxuriant, and still produces the scarlet "lobster's claws" in profusion, in the site the plants occupied six years ago.

As we shall make it our special business to mention here a few improvements among stove plants. we shall pass over many notable specimens without special comment, including even Allamanda grandiflora, grand as it may be. The Eucharis family are numerous here, and require several houses for their accommodation, all the known sorts being represented. But as one of them produces flowers worth in the wholesale market quite a third more than those of any other variety, we must mention Eucharis amazonica, as standing at the head of the list, and superior to the rest. Of another class a note was made in regard to Euphorbia jacquiniflora, whose orange-scarlet blossoms excel those of E. splendens. Dracæna Lindeni, too, reqnires a note, for its golden variegation, offering variety and contrast by the side of the bronze and carmine coloured foliage of the other varieties.

Dipladenia Brearleyana is considered as the best of the dark crimson varieties, while D. Thomas Speed is expected to surpass D. amabilis.

Two hybrids and improvements of Ixora are I. Fraseri and I. Westi. Thunbergia Harrisi bears large blue flowers under the roof of one of the stoves here, and is strongly recommended as a robust species, free in flowering, and not sufficiently known. It is noticed here of Bouvardias, for which there is a great demand, that the new double varieties seem to be wanting in constitutional vigour, and are less thriving than the ordinary white and scarlet varieties.

Caladiums were not at their best at the time of our visit to Messrs. Clibran's establishment, where there is a large collection, and we are pleased to note a distinct small variety, C. minus erubescens, a companion for the esteemed C. argyrites, being of the same height, and having brilliant crimson leaves with bright green margins. All the popular forms are here, and are grown to meet a large demand, including the dwarf Maidenhair, Adiantum Paccotti.

Epacris Eclipse and E. grandiflora are recommended by the experts here as the two most popular varieties, producing their handsome flowers two or three times during the year. Several houses are required to keep up the supply of Camellias and Azaleas, and it should be mentioned that all the first-named are propagated at home instead of in the nurseries abroad. Judging from the number of Cyclamens coming into bloom they must be a favourite flower in this district. The strain propagated here from C. persicum is preferred to those derived from C. giganteum.

Chrysanthemums filled a house 150 feet long by 24 feet, and in the early winter this forms a special attraction for the flower-loving people of Lancashire, and although we may be hardened in the matter of Chrysanthemum shows, we regret that only these few words can be spared for so fine a collection.

Five acres of ground are occupied by herbaceous plants, including a numerous family of Hepaticas, which do not always yield seed satisfactorily in the positions they occupy, only consenting to do so when they are well established and feel at home. They seem to be in first-rate condition here, and we are told they produce seed abundantly. "St. Brigid's" Christmas Rose, the Brockhurst variety, or Helleborus angustifolius, was the subject of a correspondence in the *Gardeners' Chronicle* three years since, and to this we may refer, merely adding here that the variety has been long known in this part of the country, and should be so everywhere, for the sake of its large flowers of pure white.

Among hardy Carnations and Picotees Daniel Adamson is in great repute here as a vigorous grower, which will stand out all the winter. The flowers are large, and of pure yellow. Pansies are claimed as another specialty, and of these large breadths are grown, as of Primula japonica and P. Sieboldi, which both do well here out-of-doors. *H. E.*

ORCHID NOTES AND GLEANINGS.

OAKLEY, FALLOWFIELD, MANCHESTER.

Apropos of the lamented death of William Leech, Esq., mentioned in your columns last week, it will be interesting to many lovers of Orchids to know that it was at this place that the fine seedling Dendrobium Leechianum was raised, and flowered for two or three years. The first plant of Cymbidium Parishii flowered in this collection, and here also, amongst many other notable specimens, some of the finest plants of Dendrobium Falconeri ever grown in this country were flowered, and exhibited for several years by his gardener, Mr. Swan.

Curious Growth in a Cœlogyne cristata.

I send you a communication from the Professor. You will see my letter to him has gone astray, so that he misses the remarkable point about it. In the two "shoots" (as he calls them) that I sent him they first started as a flower-spike, then developed into a very small bulb, as he describes, and then the flower-spike came from the top of the bulb—the one with nine, and the other with ten flowers. The plant is a very fine variety, and usually has seven and eight flowers to the spike. *W. Vanner, Camden Wood, Chislehurst.*

The following is the communication referred to:—

"I am indebted to Mr. W. Vanner, Camden Wood, Chislehurst, Kent, for two most remarkable shoots. Each has strong basilar scales, a very, very small bulb, one of them as a very small Fig, the one with one, the other with two leaves, all narrow, lanceolate, acuminate, rather rigid, and the inflorescences of eight or ten flowers. *H. G. Rchb. f.*"

Calypso borealis.

This elegant little terrestrial Orchid is now in flower in the Kew collection. It is a plant which is very rare in cultivation, although in a wild state it is widely dispersed throughout Northern Europe, Asia, and North America. The solitary flower is rather large, the sepals and petals being a delicate rose and brown, with a yellow crest on the slipper-like lip. The figure, which has appeared in these columns, copied from Hooker's *Exotic Flora*, hardly gives a good idea of the beauty and peculiarity of the plant.

Orchids in Flower at Kew.

The Kew Orchid collection now boasts of upwards of 100 species in flower. If varieties were counted in addition, the number of course could be very considerably increased.

Calanthe Sieboldi

is a rare and certainly pretty Orchid, which most Orchid growers have never seen in flower. A good specimen with a fine spike is now blossoming in the Kew collection. It is a handsome dwarf-growing evergreen species, with broad dark green plaited leaves and erect spikes, scarcely longer than the foliage. The flowers are rather large, the large lip being yellowish, and the sepals and petals brown-tinted. It has been figured in the *Revue Horticole* for 1855, p. 381, and in Regel's *Gartenflora*, t. 635. We believe that all attempts to hybridise the section to which this belongs (of which C. veratrifolia is the best known type) with the deciduous species bearing pseudobulbs have so far been unsuccessful.

Trichopilia suavis.

A specimen of this beautiful Orchid, with its large, handsome, Hawthorn-scented flowers, is now to be seen in the Kew collection. In colour the flowers are creamy-white, the large lip being spotted with pale violet-rose, and having a yellow throat. It is a native of Costa Rica. A figure is given in the *Botanical Magazine*, t. 4654.

FRITILLARIA SEWERZOWII VAR. BICOLOR.

The type of the plant represented in the annexed illustration (fig. 88) was first described by Dr. Regel in the *Gartenflora*, t. 760, under the name of Korolkowia Sewerzowii, but after examination in a living state it was not considered sufficiently distinct to constitute a new genus, and consequently it was reduced to Fritillaria, section Korolkowia, by the same author. Under the latter name it was also described by Mr. Baker in the *Journal of the Linnean Society*. F. Sewerzowii, although not laying claim to the title of beautiful, is withal extremely curious, and on this account is highly desirable for unique collections of bulbous plants. Being found at elevation of 6000 feet in the mountains of Turkestan it is quite hardy with us in the open ground, although from its earliness it often suffers from the late spring frosts when planted in exposed or low-lying situations. In a cold pit it will flower as early as the end of March, and a month later or so in the open borders. Forming few basal leaves it sends up a longish lax raceme with opposite or subopposite oblong blunt leaves, from the base of which the flowers are produced from four to a dozen on each stem. The flowers are about an inch long, funnel-shaped, lurid purple, with a glaucous bloom on the outside, and yellowish-green on the inner side. The flowers on the summit are generally abortive, and this would seem to be characteristic of the section.

F. Sewerzowii var. bicolor, figured in *Gartenflora*, t. 1181, and in the annexed cut, is no doubt the same as the plant distributed under the unpublished name of Korolkowia discolor, a name under which it received a Certificate a short time ago from the Royal Horticultural Society. It was collected and introduced recently by Albert von Regel, who found it on the south side of the Alatau Mountains at a high elevation. It is more robust than the type, the stems being half as stout again, the flowers much larger, and from eight to fourteen to each bulb; the segments are distinctly reflexed, greenish-yellow on the inside, with distinct purplish pointed marking toward the base of each, brownish on the outside. It is certainly a distinct advance on the type, and we consider it a very desirable addition to our collections of hardy bulbs. *D.*

THE KITCHEN GARDEN.

GENERAL WORK.

Any arrears of ground-work that may still be in abeyance should be forthwith completed, and especially should all digging and trenching be brought to a close as far as practicable; all weeds should be cleared off, and everything made clean and neat in appearance.

Tomatos.

For outside planting the young stock should be shifted into 6-inch pots, and grown on so that at the beginning of May they may be from 2 to 3 feet in height. It is essential to have strong plants, to succeed in outdoor cultivation, and these must be well prepared and hardened off beforehand, so that they may come quickly into bearing.

Sowing Peas, Beans, &c.

Make successional sowings of main crop varieties of Peas on deeply trenched ground, or in prepared trenches, as for Celery; also of Broad Beans, and a small one of French Beans may be tried on a warm sheltered border. *John Austen, Witley Court.*

Strawberry King of the Earlies.

This is really a valuable early Strawberry, it being decidedly first in the open garden, but it is as a forcer for the first crop that I would wish to recommend it. I grew a good many here, and introduced them for the first batch, and am quite delighted with it, for every blossom set, and there is not one faulty plant among the lot. I can thoroughly recommend this kind to gardeners and amateurs, as it will give us a longer season than we now possess. I am very curious to know its parentage—Black's Seedling, or, as it is known in the South, Black Prince, is, I fancy, one of them. Will Mr. Laxton kindly enlighten us how he got this valuable new kind? *J. Rust, Eridge Castle.*

CYPRIPEDIUM VEXILLARIUM.

The pretty C. Fairrieanum has now become so scarce that most Orchid growers are content if they can only get one or other of Messrs. Veitch's beautiful hybrids reared from it; in form and many other characteristics they imitate their parent, and,

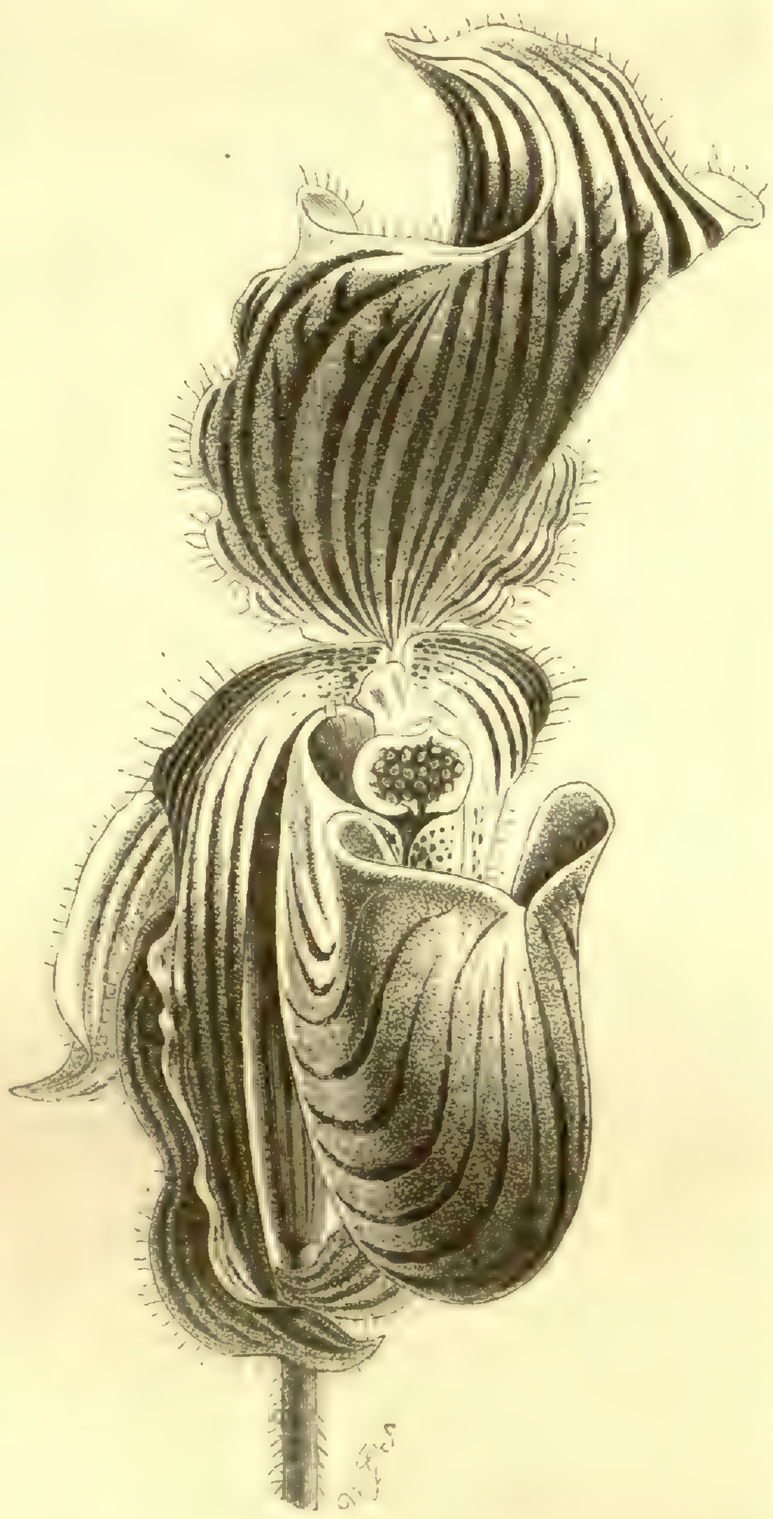


Fig. 87.—Cypripedium vexillarium ×.

moreover, they have a freeness of growth and flower which C. Fairrieanum cannot boast of—at least, as it is managed now-a-days. C. vexillarium (fig. 87), a cross between C. Fairrieanum and C. barbatum, has the dorsal sepal white, tinged with green and flushed with rose, the veins being broadly marked with dark crimson; the lip is brownish-crimson with green veining, and the petals, which are curiously deflexed, like the arms of a soldier at "attention," in the mature flower, are purple, tinged with green, the edges of the sepals and petals being beautifully decorated with dark hair-like fringe. A glance at our illustration, too, will give a good idea of the form of C. Arthurianum (C. Fairrieanum × C. insigne), which was named in honour of the late Mr. Arthur Veitch, and for the colour a substitution of yellow instead of the rose and crimson in C. vexillarium will roughly describe it. Both these fine hybrids are of neat growth, and, as is the case with home-raised seedling Orchids generally, are much easier to cultivate than many of the stouter species which have to be imported. Our illustration is from a flower obligingly furnished us by Mr. Tautz.

FORESTRY.

PLANTING, &c.

Finish up all miscellaneous work as far as practicable before bark-stripping commences, which, with the present fine open weather, will be during the last week of the present month, or early in May. This and the three following weeks may be occupied in the transplanting of Hollies, evergreen Oaks, large Laurels, Bays, &c., which should be removed with good balls. Should dry weather set in after planting, an occasional watering in the case of large transplants is recommendable, also mulching with spent manure. Syringing overhead in the evening is a capital way to resuscitate newly transplanted trees and shrubs which have suffered through removal. Staking plants of 5 feet and upwards in height, cannot be performed too soon after planting.

Nursery Work.

This department will still require a great deal of attention, so as to get everything set to rights after the planting season. Should any young trees remain unplanted have them lined out at once, and afterwards pay attention to seedlings, which we usually defer planting until wintry weather is at an end, severe frosts working great havoc by lifting the plants entirely from the ground. As seedlings can be lifted with a fair amount of soil attached, late planting is not injurious.

The beds from which seedling Rhododendrons are taken should be levelled over and again sown with seeds previously collected from the finer hybrid forms. The ground intended to receive the young Rhododendrons should be well dug over, and, if composed of ordinary loam, a 4 inches thick coating of peat and an inch thick coat of sharp river or sea sand spread over it, and the whole dug lightly over with a fork. A north or east-lying border is preferable in which to plant Rhododendrons. Do not plant the seedlings closer than about 4 inches apart, and 10 inches between the rows. During fine weather have all weeds either hoed over or pulled up and removed. In planting out breaks of hardwoods intended for use next season have all double leading shoots and ungainly side branches removed. This, as well as root-pruning where it is found necessary, will save a lot of trouble when the trees are being planted out permanently. Grafting may now be taken in hand. When last year's seedlings have become loosened by the recent frosts we have found it a good plan to sprinkle some fine sand and leaf-mould—three parts of the former to one of the latter—on the beds. Dig deeply the ground intended for seed-beds, and expose to the weather as much as possible the freshly upturned soil.

Evils of Thick Planting.

It is well known by foresters that if we wish a tree to be firmly rooted, plenty of room must be allowed it for the perfect development of stem and branch, and this is why singly planted trees are so rarely blown over when compared with those in our woodlands. Where a tree is planted so that the branches and leaves of contiguous ones do not interfere or come in contact with it, then all the parts are exposed to light and air equally, the roots ramify in all directions, so fixing the plant firmly in the soil and drawing up copious supplies of nourishment. On the other hand, in crowded plantations where the branches are not allowed freedom of growth and perfect exposure, the buds are scantily produced and of weak constitution, while the roots are prevented from attaining to full development, and cannot, therefore, be expected to steady the tree in anything like a satisfactory manner.

Cemetery Trees.

The idea of rendering our churchyards places of pleasant aspect, instead of being, as they unfortunately too frequently are, places of gloom and sadness, is well worthy of our considerations, and cannot better be brought about

than by careful and judicious planting of trees and shrubs. There are so many trees suitable able for such a purpose that one cannot but wonder why the monotonous repetition of Yew and Cypress is so frequently indulged in; why the sameness is not relieved by such interest-giving plants as the various smaller growing forms of our forest trees such as the Mountain Ash, Weeping Birch, cut-leaved Alder, and dozens of other equally deserving trees. Pleasant associations would not detract one whit for our veneration of the dead; indeed, in the usually employed trees we have too much expression of living grief rather than of love for the departed.

Myrobella Hedges.

Now-a-days one frequently hears talk of the usefulness of the Myrobella, or Cherry Plum, as a hedge plant; and rightly too, for where not exposed to the attacks of ground game it soon makes a capital fence, that neither cattle nor sheep care to venture within reach of. In forming the fence stout stocky plants should be inserted at 6 inches apart, in previously prepared ground, these being well cut back just before growth commences, and the same repeated annually until the hedge is of the desired height. *A. D. Webster.*

Fig. 88.—Fritillaria sewerzowii var. bicolor. (see p. 456.)

Foreign Correspondence.

THE GERARDIAS.

In reply to M. Jean van Volxem, as to what plants the Gerardias of the United States of America are parasitic upon, I would say that I am informed by Professor Sereno Watson, of the Cambridge Botanic Gardens (Massachusetts, U.S.A.), that "they are found upon the roots of Vaccinium (Blueberry), Gaylussacia (Huckleberry), Corylus, Quercus alba, Hamamelis virginica, and Gerardia itself." He says "it is probable that they are not very particular, and will grow upon the roots of almost anything."

I should be pleased to forward the inquirer any of the above-named plants if he should wish them. *J. A. De Mar, Boston, Mass., U.S.A.*

Slugs in Orchid-houses and Orange-peel.

Every Orchid grower knows what great enemies slugs are to plants, especially Orchids, and every gardener does his best to get rid of them. A capital plan to catch them is to get the rind of an Orange, cut it in pieces, and put the pieces about among the plants which slugs are liable to attack; looking them over morning and evening. The temptation of that strong smelling rind is so great for those troublesome pests, that I have caught as many as six on one piece at a time. *F. Dobner, Orchid Grower, Villa Rothschild, Pregny, prés Genéve.*

New Inventions.

PATENT WALL FITTINGS AND SHREDS.

These various devices are intended to be used for training fruit trees and climbing plants on walls or buildings without nails or tying; also for fruit tree espaliers in the garden, and for climbing plants in conservatories, verandahs, and other structures. Some of these useful fittings will be highly valued, especially by those who are desirous of avoiding the injuries to walls caused by the use of nails. Any building may now be covered with vegetation that may be trained with the greatest facility, the work being accomplished in half the usual time. The devices, in wire and flat bar iron, are of different patterns, sizes, and strength, can be neatly and closely adjusted to the wall, and are furnished with a kind of permanent studs or holdfasts; and the lightest and most slender as well as the largest and most stubborn branches of climbers can be neatly adjusted and firmly secured. The material employed is galvanised, comparatively inexpensive, of great durability, and is easily fixed. It is thought that the invention will be of especial value for other purposes, such as shop-fittings, warehouses, or other places, where articles are required to be hung up or attached to the walls or windows. *Hammond & Ward,* 112, *Alan Road, Ipswich.*

[These several inventions, as seen at our office the other day, seem to fulfil, in a cheap and practical manner, a want long felt by all those who have to do with plants, indoor or out, that must be fastened to walls. The various ideas (covered by specification) are exceedingly ingenious, and although all of them may not be brought into general use, those chosen to be manufactured in quantity will be cheap, and, therefore, accessible to horticulturists, great and small. Ed.]

Home Correspondence.

CROSS-BREEDING OF AMARYLLIS.—About ten years since I raised nearly sixty seedlings from the three flowering kinds—Defiance, which bears large crimson-scarlet flowers, and which is a free grower and bloomer, besides having large leaves; A. vittata rubra, with white and scarlet flowers, also a free grower and flowerer; the third was A. reticulata. I crossed the two first-named with pollen of A. reticulata, and *vice versâ;* these various plants all bore seed that ripened; the seed was sown in a pan of light soil, and placed in heat of 70° to 75°. From this seed I obtained sixty plants, which as soon as they had formed nice-sized bulbs were potted into small pots, and kept growing in heat at 75°. As the leaves grew I could see that all showed traces of reticulata parentage, for all had white stripes running up the middle of the leaf. As soon as they had filled the pots with roots they were repotted into 5-inch pots, well crocked, using good loam and peat in equal proportions, with a little white sand added. After growing the bulbs as above mentioned for three years flowers appeared, but no two flowers were alike, all differed in colour, and all proved to be constant flowerers, flowering throughout the year. They never require to be dried off; the foliage is always handsome. I have since then fertilised these hybrids and many others, but cannot succeed in getting good seed, although I have tried every means I can think of; the blooms after being fertilised go on well for five or six weeks, forming well-grown capsules, but the seeds are all infertile. *W. Smythe, The Gardens, Basing Park, Alton.*

THE WEATHER IN THE WEST.—After reading your editorial note to-day (March 26) to the effect that Apricots are earlier at Gordon Castle than here, I took pains to examine our wall trees on a wall 150 yards in length by 11 feet in height, with a western aspect. The blossom buds are thickly studded over the trees, but I am within the mark in saying that not more than two dozen buds are expanded. The glass coping which is used for protection was not fixed until this day. Our situation is in a moist valley close to a stream—a tributary of the Wye—and we usually experience more frost, particularly in autumn and spring, than places which, from a geographical point of view, are not so favourably placed. We have an unheated Peach-house, 100 feet in length, with trees planted in the front and back, which each season is kept wide open (in order to retard the blossoms) until the first blooms open. On reference to my notes I find in March, 1883—a time likely to be remembered by gardeners—on the 13th we had 20° of frost, which seriously thinned the crops of Peaches and Nectarines, the greater number of the blossoms then expanded being frozen, notwithstanding that the glass was covered with canvas. On the morning of the 17th of the present month we had 27° of frost, but there were no blossoms upon any Peach trees. So low a temperature in the West of England on March 17 is an extraordinary circumstance, and to be certain that no mistake was made we tested the thermometer. *T. Coomber, Hendre Gardens.* [Does our correspondent mean that the temperature was as low as 5° F. on that occasion? Ed.]

VIOLET WELLSIANA.—Mr. Rust's commendatory notice of this Violet is nothing but the truth. I have this year growing in the same frame Marie Louise, Czar, and Wellsiana. The plants were put in late, and had to contend with frost before they were really established. From Wellsiana I have had twice the quantity of blooms that were gathered from the Czar. Moreover, the flowers are larger, more fragrant, and deeper hued than the Czar. Those of your readers who have not grown this Violet, are minus a real and permanent improvemetn. I quite think with Mr. Rust that those who have not succeeded with Violets in frames will do so if they try again with this variety. *Vagabond.*

THE WEST LYNN VINEYARD.—Some time ago I had the pleasure of being conducted by Mr. Castle through his vineries. The way he has succeeded in growing above the average Grapes in houses originally built for Cucumbers, and with no great addition to the borders, is calculated to give food to the thoughts of even the most experienced and hide-bound practitioner. The soil in the borders rests on slates, and is never more than 18 inches in depth. As both Mr. Castle and Mr. Gilbert have written on the system of culture adopted, there is no need of any further description.

But I would strongly advise any one who is interested in Grape-growing to attempt to see Mr. Castle's vineries. Mr. Castle also gave me the privilege of tasting Gros Colmar from different stocks. There is a manifest improvement in flavour when the Vines are grafted on Buckland Sweetwater and Muscat of Alexandria, without any loss in size or coloration of berry. Mr. Castle's system of keeping Alicantes and Gros Colmar is so perfect that he hardly sells at all until March. *Vagagond.*

A WET FROST.—Let me ask those gardeners who take an interest in their plants to repeat some experiments that were made by myself thirty-five years ago, *i.e.*, with regard to the injurious effects of spring frosts. There is an almost universal opinion that a wet frost (*i.e.*, after rain) is injurious to plants. My experiments proved the contrary. I took the hint from an extraordinary frost on the last day of May, after a heavy fall of snow. This occurred at 7 in the evening, and the ground was covered to the depth of 2 or 3 inches. A rapid thaw had melted all the snow by 10 P.M., leaving everything dripping wet. Clouds disappeared, and so sharp a frost set in that by 3 A.M. ice was formed thicker than a shilling. A Walnut tree had a branch over my observatory, and on every leaf there was a sheet of ice; bending one showed that the ice was detached, and was, in fact, a horizontal sheet that prevented the frost from freezing vertically into the leaf, and therefore crystallisation took place horizontally, the water and then the ice acting as an umbrella of protection. Neither the Walnut nor any other plant suffered from this frost. Next spring experiments were made to test dry and wet frosts. Two dozen Calceolarias were turned out-of-doors on April 15 in two groups, about 3 yards apart. The first were wetted every evening at 8 o'clock (so that all the leaves should be wet), whilst the second group had the leaves kept dry. A number of sharp frosts occurred, and the whole of the wetted plants survived, whilst those that were dry died. A syringe was used to wet the blooms of half-a-dozen pyramid Pears and some wall Peaches and Plums. The Pears and Peaches had more fruit than those not wetted, while the Plums (a Dove Bank and Coe's Golden Drop) that were syringed were the only Plum trees that year with fruit in my garden. Of course an unusually severe frost would cause injury whether wet or dry, but more injury with a dry frost. The following table will show the state of the atmosphere perfectly saturated with moisture and when very dry at temperatures of 26°, 32°, and 34°, the three examples marked A being completely saturated, and the three marked C very dry:—

Temperature of Air, *i.e.*, Dry Bulb.	Temperature of Water in the Air, *i.e.*, Wet Bulb.	Temperature of Dew Point.	Difference of Dry and Wet Air.	Dew Point below Temperature of Air.	Vapour in a cubic foot of Air.	Additional Vapour required to saturate a cubic foot of Air.	Degree of Humidity (0—100).	Weight of a Cubic Foot of Air with Barometer.		Elastic Force of Vapour. Pressure due to Water.	Pressure of Barometer Due to Dry Gases (Barometer 29 inches)
								29 Inches.	30 Inches.		
Deg.	Deg.	Deg.	Deg.	Deg.	Grains.	Grain.		Grains.	Grains.	Inch.	Inch.
A 34·0	34·0	34·0	0·0	0·0	2·3	0·0	100	544·4	563·2	0·196	28·804
34·0	33·0	31.2	1·0	2·8	2·1	0·2	89	544·5	563·3	0·176	28·824
C 34·0	32·0	28·5	2·0	5·5	1·8	0·5	79	544·7	563·5	0·156	28·844
A 32·0	32·0	32·0	0·0	0·0	2·1	0·0	100	546·7	565·6	0·182	28·818
32·0	31·0	28·7	1·0	3·3	1·9	0·2	87	546·9	565·8	0·157	28·843
C 32·0	30·0	25·4	2·0	6·6	1·6	0·5	75	557·0	565·9	0·137	28·863
A 26·0	26·0	26·0	0.0	0·0	1·7	0·0	100	553·7	572·8	0·141	28·859
26·0	25·0	19·9	1·0	6·1	1·3	0·4	76	544·0	573·1	0.107	28·823
C 26·0	24·0	13·8	2·0	12·2	1·0	0·7	58	554·2	573·3	0·081	28·919

A knowledge of the difference between the dry and wet bulb thermometer is of more importance to a gardener at a low temperature than in hot weather. With a difference of 1° in the dry and wet bulb the dew point will be below that of the air:—At 10° temperature, 8°·8; at 30°, 4°·1; at 50°, 2°·1; at 70°, 1°·8; at 90°, 1°.6. When the thermometer is less than 40° in the afternoon, and with a difference of 2° between the dry and wet bulb, a frost at night is almost a certainty. From the above table it will be seen that a difference of 2° when the thermometer is 34° gives the dew point at 28°·5, or 5°·5 below the temperature of the air; but if the thermometer is 26° the dew point will be as low as 13°·8, or 12°·2 below the temperature of the air; a difference, however, of 2° is uncommon in severe frosts. In 1868, when the thermometer was 96° in the shade, the wet bulb was only 70°, a difference of 26°, the dew point being 54°·6, the humidity of the air being only 27°, and the vapour required to saturate a cubic foot of air being 13·3 grains, the whole vapour in the air, had it been perfectly saturated, would have been 17·7 grains, whereas, at a temperature of 26°, the whole vapour would only have been 1·7 grains, or ten times less. Every gardener should have a good dry and wet bulb thermometer, such as Negretti & Zambra's standard; I say Negretti & Zambra, because I have used their instrument more than forty years with complete satisfaction, whilst I have seen hundreds of thermometers in gardens worse than useless. Such an instrument, when studied with the aid of Glaisher's invaluable *Hygrometrical Tables*, would give an insight into the hygrometrical conditions of the air of the greatest value—a knowledge that all gardeners should possess. *E. J. Lowe.*

THE GARDENERS' ORPHAN FUND.—Mr. Barron, of Chiswick, having been appointed Secretary, *pro tem.* I ask my friends who have so kindly promised their support in this matter, to be good enough to forward their subscriptions and communications direct to him. *J. Udale, Elford, Tamworth.*

—— In your report of the meeting (p. 420) held at South Kensington on the 22d ult., I am represented —through a clerical error, no doubt—as proposing that a fund be opened to be called the "Gardeners' Children's Orphanage Fund." I shall be obliged if permitted to say my proposition was that a "Gardeners' Orphan Fund" be opened. The word "Orphanage" was studiously avoided as suggestive of expenditure on a building, and it was my opinion that any sum that might be collected could be better employed. This was equally the opinion of others, including Mr. C. Penny, hence the unanimous adoption of the proposition. *J. Wright*, 171, *Fleet Street.*

TOXICOPHLÆA THUNBERGII.—This beautiful South African stove evergreen is now blooming in grand condition at the Botanic Gardens, Edgbaston, Birmingham, where Mr. W. B. Latham, the Curator, has a specimen 5 feet in height, most profusely bloomed, and exquisitely fragrant, many of the stems being a foot in length, and densely crowded with corymbs of white blossoms. It was sent to the Botanic Gardens by a gentleman of Birmingham who had been unable to flower the plant. Mr. Latham at once cut it back, and so induced a strong growth, with the result that, when the wood matured, flowering commenced. This treatment will be followed in the future. The value of this useful decorative plant is enhanced from the fact that it can be had in flower in late winter and early spring, and indeed it would appear to be such an accommodating subject that it can be had in bloom through a good portion of the year if treated so as to produce this result. *R. D.*

ADA AURANTIACA.—Mr. Smith, in his note respecting this Orchid, p. 422, says it is easily managed where there is a hothouse kept at a temperature of 60° to 70°. It may interest Mr. Smith to hear that it does equally well in a much cooler temperature. Here we have a plant carrying fourteen spikes that has been growing in the Odontoglossum-house for three years. This house has frequently been so low as 40° this winter. It is found at an elevation of 8500 feet; therefore it is only reasonable to infer that cool treatment should suit them best. *S. Cook, Rosefield, Sevenoaks.*

SOCIETIES.

CRYSTAL PALACE.

March 26.—Doubtless on account of the University Boat Race being fixed for March 26 the exhibition of spring flowers, &c., did not assume the proportions expected. But although the show was small it was, on the whole, satisfactory, the nurserymen showing well. Cinerarias, with the exception of the fine plants shown by Mr. J. James, from Farnham Royal, Slough, which were awarded the 1st prize in the class, were not up to the usual standard; and as regards Amaryllis there was a small show, but Messrs. Paul & Son, Cheshunt, showed plants of such a quality as to compensate for the deficiency of others.

In each of the open classes for Hyacinths, Tulips, Narcissi, and for Lily of the Valley there were only two competitors, who, however, staged excellent lots, and ran each other closely in all instances. For Hyacinths and Tulips the premier award was taken by Mr. H. R. Wright, Turner Road, Lee, Kent, and Messrs. H. Williams & Sons, Fortis Green, Finchley, were 2d. For Narcissi and Lily of the Valley this order was reversed.

In the amateur's division, Mr. A. Luff was awarded 1st for Lily of the Valley, showing creditable and well flowered plants.

Cyclamens were well represented and made a good display in the open division, Mr. J. Odell, Gould's Green, Hillingdon, taking 1st in a keen competition with the St. George's Nursery Co., Hanwell, which was placed 2d, and the 3d place was assigned to Mr. J. Wiggins, gr. to W. Clay, Esq., Kingston-on-Thames, the same exhibitor being 1st in the amateur's class.

Groups.

Mr. H. James, Castle Nursery, West Norwood, was the sole exhibitor in the class for a group of stove and greenhouse plants. His arrangement was very light and effective, justly securing him the leading prize. Many Orchids, Palms, Dracænas, Epacris, and Azaleas entered into the group. A striking feature was formed by the groups of greenhouse Azaleas in pots. They were placed on the ground before the stage, and were shown to advantage. Mr. R. Wells, Longton Nursery, Sydenham, showed best, receiving 1st for a generally well-flowered group; 2d, Mr. A. Luff, gr. to R. R. Hyatt, Esq., Sydenham.

Miscellaneous.

Messrs. Barr & Son, King Street, Covent Garden, and Mr. T. S. Ware, Hale Farm Nursery, Tottenham, each staged, as usual, a comprehensive collection of Daffodils, &c.

Cyclamens were staged in quantity by Mr. J. Odell; the plants were masses of large healthy-looking flowers, and made a fine display.

The St. George's Nursery Co. and Mr. J. Wiggins also showed good groups of Cyclamens.

Roses were shown by Messrs. Paul & Son, Cheshunt, and also by Mr. W. Rumsey, Waltham Cross, the plants being well flowered.

Hyacinths and other bulbous plants, with Orchids, Spiræas, &c., making a large and effective group, were shown by Mr. H. R. Wright.

Messrs. J. Laing & Co., Forest Hill, contributed an elegant collection of various Orchids tastefully arranged with Palms and Ferns, &c.; and from Messrs. H. Williams & Son came a group of flowering plants, but which was too gaudy to be pleasing.

A collection of some fifty dishes of Apples was shown by Messrs. J. Cheal & Son, Crawley, Sussex, the fruits being wonderfully well kept.

Horticultural sundries, Orchids-peat, &c., were exhibited by Messrs. W. Wood & Son, Wood Green, Finchley. N.; and chemical manures by the Agri-Horticultural Chemical Company.

Obituary.

JOHN MC HUTCHEON.—The death is announced of John McHutcheon, on March 26. He was for many years a well-known member of the staff of this journal when conducted by Dr. Lindley, and of late he occupied a similar position on the *Garden*. He

served his apprenticeship in Scotland, and was for a time at Jackson's nursery at Kingston, and also at the Royal Horticultural Society's Gardens at Chiswick, His long connection with the Press had secured to him a large acquaintance among gardeners, by whom the news of his death will be received with sympathetic regret.

THE WEATHER.

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 42° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature.				
		Accumulated.			
	Above or below the Mean for the week ending March 28.	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 4, 1887.	Below 42° difference from Mean since Jan. 4, 1887.
Principal Wheat-producing Districts.		Day-deg.	Day-deg.	Day-deg.	Day-deg.
0. Scotland, N. ...	0 (aver.)	11	24	+ 31	— 1
1. Scotland, E. ...	1 above	17	29	+ 27	+ 15
2. England, N.E. ...	1 above	26	16	— 7	+ 70
3. England, E. ...	2 above	37	16	— 75	+ 155
4. Midland Cos. ...	1 above	32	13	— 54	+ 136
5. England, S. ...	1 above	38	11	— 67	+ 139
Principal Grazing, &c., Districts.					
6. Scotland, W. ...	0 (aver.)	22	13	— 13	+ 24
7. England, N.W. ...	1 below	21	11	— 36	+ 98
8. England, S.W. ...	0 (aver).	31	7	— 88	+ 41
9. Ireland, N. ...	0 (aver).	27	13	+ 6	+ 12
10. Ireland, S. ...	0 (aver.)	32	8	— 24	+ 61
— Channel Islands	0 (aver).	28	0	— 111	+ 78

Districts.	Rainfall.			Bright Sunshine.	
	More or less than the Mean for the Week.	No. of Rainy Days since Jan. 4, 1887.	Total Fal since Jan. 4, 1887.	Percentage of possible duration for the Week.	Percentage of possible Duration since Jan, 4, 1887.
Principal Wheat-producing Districts.	Tenths of Inch.		Ins.		
0. Scotland, N. ...	5 more	55	11.3	23	22
1. Scotland, E. ...	0 (aver).	39	5.1	41	32
2. England, N.E. ...	2 more	36	3.5	41	31
3. England, E. ...	4 more	31	3.3	40	34
4. Midland Cos. ...	4 more	32	3.9	35	28
5. England, S. ...	2 more	31	3.9	41	27
Principal Grazing, &c., Districts.					
6. Scotland, W. ...	4 more	44	9.5	31	25
7. England, N.W. ...	7 more	35	5.7	29	27
8. England, S.W. ...	2 more	36	5.4	51	33
9. Ireland, N. ...	3 more	43	6.9	37	27
10. Ireland, S. ...	1 more	38	7.5	49	33
— Channel Islands	0 (aver.)	39	4.4	57	43

THE PAST WEEK.

The following summary record of the weather for the week ending March 28, is furnished from the Meteorological Office:—

"The *weather* has been in an unsettled, changeable state generally. Falls of rain or hail were frequent, but several bright, fair intervals were experienced, especially towards the close of the period.

"The *temperature* has been about equal to the mean for the season in nearly all the 'Grazing Districts,' but in all the 'Wheat-producing Districts' it has been one degree above. The highest of the maxima, which were recorded either on the 27th or 28th, varied from 53° in the 'Channel Islands,' to 60° in 'Scotland, E.,' and 61° in 'England, S.W.' The lowest of the minima were generally registered at the commencement of the period, when the thermometer fell to 22° in the 'Midland Counties' and 'Scotland, E.,' and to between 26° and 34° elsewhere.

"*Rainfall* has been more than the mean in nearly all districts.

"*Bright sunshine* shows a decrease in Scotland, but in Ireland and England it has not differed much from that recorded last week. The percentage of the possible amount of duration ranged from 23 in 'Scotland, N.,' and 29 in England, N.W.,' to 51 in 'England, S.W.,' and 57 in the 'Channel Islands.'"

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING APRIL 9. (AVERAGE OF THIRTY-THREE YEARS.)

April 3	45°.9	April 7	46°.9
„ 4	46°.2	„ 8	47°.1
„ 5	46°.5	„ 9	47°.2
„ 6	46°.7	Mean for the week ...	46°.6

NOTICES TO CORRESPONDENTS.

Books: *Nepenthes.* We do not know, but we suppose it is an extract from the *Proceedings* of some scientific society. Apply to Messrs. Williams & Norgate.

Insects: *A Correspondent.* The green fly which you sent us is known as the Lace-wing fly (fig. 89), and,

Fig. 89.—The lace-wing fly (chrysopa vulgaris).

far from being hurtful to gardeners, is eminently useful, as its larva feeds on aphides (hence another name, "Aphis Lion"), and it is said to eat two aphides per minute. The eggs of this creature are remarkable, being placed on the top of footstalks, which are attached to the under side of a leaf, as shown in our illustration. The eggs are somewhat like the fruits of certain mosses, and have been described and figured in books as such.—*No Name.* The Beans sent are infested with the Bean-weevil (Bruchus rufimanus), of which an illustration was given in these pages October 3, 1885, p. 436, when an account of experiments on the productive power of the damaged Beans was also published.

Blighted Leaves: *A. R.* The leaves are attacked by the leaf-miner insect, which burrows in the interior of the leaf, and which was figured in these pages July 25, 1885. The only effectual remedy is to pluck off the damaged leaves and burn them.

Carpet Beds: *Chronicle.* Well, you live in a benighted part, or you would know that Messrs. Cannell & Sons are to be found at Swanley, Kent, and Messrs. J. Carter & Co., High Holborn, London.

Cinerarias: *O. & M.* Good, but not first-class.

Corrections.—At p. 415, col. *c*, line 7, instead of Williams' Early, read Wilson's Early.—*Avenue of Palms.* In our Supplementary Sheet for March 19, owing to a clerical error, the Palms shown in the illustration were stated to be growing in the Botanic Garden, Ceylon, instead of the Botanic Garden, Calcutta.

Heaths: *W. Osborne.* Menziesia polifolia; Erica cinerea and var,; E. Tetralix and var. E. arborea, E. stricta, E. ciliaris, E. codonodes; Calluna vulgaris in great variety. In your climate some of the Cape Heaths might be tried.

Hellebores: *R. S. & Co.* A good free-flowering variety, with purplish flowers, rather smaller than those of some similar hybrids.

Marguerite Cloth of Gold: *R. O.* The variety is one of great merit from the large size, clearness of colour, and brilliancy of the flowers. If, as you say, it is of such excellent flowering habit, it is indeed a fine variety.

Mushrooms: *J. C.* The examples sent were very fine, firm, and juicy. No better could be tasted.

Names of Fruits: *W. F.* Old Pomeroy.—*E. W.* Josephine de Malines.

Names of Plants: *W. Marshall.* Senecio macroglossus.—*T. P.* 1, the Cornelian Cherry (Cornus mas); 2, Juniperus chinensis; 3, Juniperus recurva (male plant); 4, a Juniper. but we cannot say which one. Rhamnus alaternus.—*Sir C. W. Strickland.* Narcissus dubius; Scilla italica.—*H. E. G.* 1, the juvenile form of some Conifer, perhaps Cryptomeria or Araucaria; 2, Gymnogramma chrysophylla, golden; 3, Gymnogramma Wetenhalliana, silver.—*J. L.* 1, Sparmannia africana; 2, Monochætum ensiferum.—*S. D.* 1, not sent; 2, Pteris serrulata (why send such scraps?); 3, not recognised, send a better specimen with spores on it.—*E. E.* Dendrobium nobile, a good variety, near to the var. elegans.—*J. W.* 1, Odontoglossum luteo-purpureum; 2, O. triumphans; the D. Wardianum is a fine sample.—*J. T. C.* Stanhopea insignis. Apple, Pear, and Oak woods are all good for your purpose. It is best to strip off the bark, as that harbours insects. The Teak rafts as sold are very good.—*Constant Reader.* Merely a very good D. nobile.

Narcissus: *F. A. W.* Double and single "Butter-and-eggs," not a hybrid, but a reversion to the original single form.

Poisonous Plants: *H. C.* Bentley and Trimen's great work on *Medical Plants* might be of service, but it is costly. The last edition of Henfrey's *Elementary Course of Botany* makes mention of almost all the common poisonous plants.

Rhododendron caucasicum album: *J. Carter.* A well-flowered plant of this excellent hardy variety, than which, of its colour there are few better. It is a dwarf grower, seldom exceeding 3 feet, and forces well, as we observe in the example sent. We were not previously aware that the sort is known in some catalogues as Cunningham's Dwarf White.

Richardia and Lily of the Valley: *R. F.* The roots-stocks of these plants are botanically rhizomes.

Tomato Disease: *Reader.* There is no cure for this short of destroying the plants by fire and charring the surface soil. The cause of its appearance is unknown, but it is usually prevalent when the Potato is affected with the fungus, Peronospora infestans, and is identical with that pest.

Vanda tricolor: *G. M.* Two flowers have become united, like the Siamese twins. It is not an uncommon occurrence, although we never saw it before in this particular species. Should the same plant produce a similar flower next year we should be glad to know of it.

Verdelho Grape: *Enquirer.* This useful Grape, that fruits under greater shade than any other sort would endure, is that from which Madeira wine was once principally made. In lists it is to be found under the following names:—Early Green Madeira, and Vert Précoce de Madere.

CATALOGUES RECEIVED.

Stansfield Brothers, 69, Percy Street, Southport—Alpine Plants, Roses, &c.

Harrison & Sons, Leicester—Farm Seeds.

Communications Received.—Prof. Asa Gray, Boston, U.S.—R. D. (next week).—Lucien Linden, Ghent.—A. D. W.—F. R. K.—J. J. W.—G. P.—J. S.—J. H. G.—The Smithsonian Institute.—J. T., San Francisco.—P. L., Paris.—Capensis.—C. Joly, Paris (with thanks).—W. T. T. D.—Dr. Uhlworm, Cassel.—G. H.—Ilex.—F. S. & Co.—T. W. S.—Prof. Reichenbach.—T. H.—W. B. H.—W. S.—Clarke Bros.—W. C. (next week).—E. J.—J. R. C.—Michael Barker.—J. Hughes.—G. T. S.—H. Fox.

MARKETS.

COVENT GARDEN, March 31.

A FALL in Strawberries, but good samples of Grapes maintain their value. Good supplies all round; market dull. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apple, ½-sieve	1 6– 5 0	Pears, per dozen	2 0– 4 0
— Nova Scotia, brl.	8 0–12 0	Pine-apples, Eng., lb.	1 0– 1 6
Grapes, per lb.	3 0– 8 0	— St. Michael. each	1 6– 6 0
Kent Cobs, 100 lb.	60 0– ...	Strawberries, per lb.	6 0–12 0
Lemons, per case	12 0–21 0		

VEGETABLES—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, per doz.	6 0– ...	Lettuce, Cos., Fr., each	0 8– ...
Asparagus, French, per bundle	30 0– ...	Mushrooms, punnet	1 6– 2 6
— English, per 100	18 0– ...	Mustard and Cress, punnet	0 4– ...
Beans, Kidney, lb.	4 0– ...	Onions, per bushel	4 0– ...
Beet, red, per dozen	1 0– 2 0	Parsley, dozen bunch	8 0– ...
Brussels Sprouts, lb.	0 4– ...	Peas, per quart	6 0– ...
Carrots, per bunch	0 6– ...	Potatos, per cwt.	4 0– 5 0
Cauliflowers, per dozen	3 0– ...	,, kidney, per cwt.	4 0– 5 0
Celery, per bundle	1 6– 2 0	Rhubarb, per bundle	0 6– ...
Cucumbers, each	0 9– 1 6	Seakale, per punnet	2 6– ...
Endive, per dozen	1 0– 2 0	Shallots, per lb.	0 3– ...
Green Mint, bunch	0 9– ...	Spinach, per bushel	5 0– ...
Herbs, per bunch	0 4– ...	Sprue, bundle	1 0– ...
Leeks, per bunch	0 3– ...	Tomatos, per lb.	2 6– ...
Lettuce, per dozen	1 6– 2 0	Turnips, bunch	0 4– ...

POTATOS.—Markets very heavy, at the following prices:—Regents, 80*s.* to 100*s.*; Magnums, 70*s.* to 110*s.* per ton.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz.	6 0–18 0	Ferns, in variety, per dozen	4 0–18 0
Arum Lilies, dozen	18 0–24 0	Foliage plants, various, each	2 0–10 0
Azaleas, per dozen	24 0–42 0	Genistas, per doz.	10 0–12 0
Cinerarias, per doz.	9 0–12 0	Hyacinths, 12 pots	6 0– 9 0
Cyclamens, dozen	12 0–24 0	Lily-of-Val., 12 pots	12 0–24 0
Cyperus, per dozen	4 0–12 0	Marguerite Daisy, per dozen	6 0–12 0
Daffodils, 12 pots	9 0–10 0	Myrtles, per dozen	6 0–12 0
Dracæna terminalis, per dozen	30 0–60 0	Palms, in var., each	2 6–21 0
— viridis, per doz.	12 0–24 0	Pelargoniums, scarlet, per doz.	6 0– 9 0
Epiphyllum, dozen	18 0–30 0	Primula sinensis, per dozen	4 0– 6 0
Erica hyemalis, per dozen	12 0–24 0	Solanums, per dozen	9 0–12 0
— various, dozen	9 0–24 0	Spiræa, per dozen	12 0–24 0
Euonymus, in var., per dozen	6 0–18 0	Tulips, 12 pots	6 0– 8 0
Evergreens, in var., per dozen	6 0–24 0		
Ficus elastica, each	1 6– 7 0		

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Arum Lilies, 12 blms.	3 0– 5 0	Pelargoniums, scarlet, 12 sprays	0 9– 1 0
Azaleas, 12 sprays	0 6– 0 9	Primulas, single, 12 bunches	4 0– 6 0
Bouvardias, per bun.	0 6– 1 0	— double, 12 sprays	0 9– 1 0
Camellias, 12 blooms	1 0– 3 0	Roses, Tea, per doz.	2 0– 4 0
Carnations, 12 blms.	1 0– 3 0	— coloured, dozen.	3 0– 6 0
Cyclamen, 12 blooms	0 4– 0 9	— red, French, doz.	1 6– 2 0
Daffodils, 12 blooms	0 6– 1 0	— Saffrano, Fr. doz.	1 0– 1 6
Eucharis, per dozen	3 0– 4 0	Tropæolums, 12 bun.	1 0– 2 0
Gardenias, 12 blooms	3 0– 6 0	Tuberoses, 12 blms.	2 6– 4 0
Heliotropes, 12 spr.	0 6– 1 0	Violets, 12 bunches	1 0– 1 6
Jasmine, white, bun.	0 6– 0 9	— Parme, French, per bunch	3 0– 4 6
Lilies of the Valley, 12 sprays	0 6– 1 6	— Czar, Fr., bunch	1 6– 2 0
Marguerites, per 12 bunches	3 0– 6 0		
Mignonette, 12 bun.	3 0– 6 0		

SEEDS.

LONDON: *March* 30.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., write that there is now a greatly increased demand, owing to the land having dried, and being in such excellent working order. Meantime, prices of Clover seeds remain temptingly low, and stocks generally are in narrow compass. The choice Canadian Alsika just arrived, being unprecedentedly cheap, attracts attention. There is a good sale for large and small Tares at last week's rates. In bird seeds the business passing is small. Rape seed tends in favour of holders. Haricot Beans and blue boiling Peas realise moderate terms.

POTATOS.

COLUMBIA (EAST LONDON): *March* 30.—York and Lincoln Magnums, 55*s.* to 80*s.*; do. Regents, 55*s.* to 80*s.*; do. Champions, 55*s.* to 70*s.*; Essex Regents, 50*s.* to 90*s.*; do. Magnums, 55*s.* to 80*s.*; do. Champions, 55*s.* to 70*s.*; Cambridgeshire Regents, 55*s.* to 80*s.*; do. Magnums, 57*s.* 6*d.* to 90*s.*; do. Champions, 65*s.* to 70*s.*; Scotch Regents, 60*s.* to 85*s.*; do. Magnums, 60*s.* to 105*s.*; do. Champions, 60*s.* to 70*s.* per ton.

STRATFORD: *March* 29.—Scotch Magnums, 75*s.* to 80*s.*; English do., 60*s.* to 75*s.*; Fenland do., 55*s.* to 60*s.*; Champions, 60*s.* to 65*s.* per ton.

WEBBS' SEEDS OF BEAUTIFUL FLOWERS.

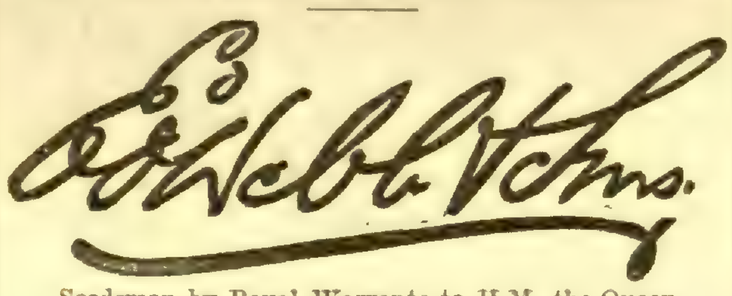
	s. d.
STOCKS, Webbs' Imperial, mixed colours, Per packet	1 0
STOCKS, Webbs' Imperial, 8 distinct colours for	3 0
ASTER, Webbs' Victoria, mixed colours, Per packet	1 0
ASTER, Webbs' Victoria, 12 distinct colours for	3 6
AURICULA, Webbs' Defiance, mixed colours, Per packet, 1*s.* and	2 6
BALSAM, Camellia-flowered, mixed colours, Per packet	1 0
CARNATION, Webbs' Choice, mixed colours, Per packet, 1*s.* 6*d.* and	2 6
PICOTEE, Webbs' Choice, mixed colours, Per packet, 1*s.* 6*d.* and	2 6
MARIGOLD, Webbs' Gold-striped, mxd. colours, Per packet	1 0
MIMULUS, Webbs' Hybrid, mixed colours, Per packet	1 0
POPPY, Webbs' Sterling, mixed colours, Per packet	1 0
ZINNIA, Webbs' Exhibition, mixed colours, Per packet, 6*d.* and	1 0

WEBBS' BOXES OF FLORAL GEMS,

Specially arranged for the Gardens of Ladies and Amateurs,

2s. 6d., 5s., 7s. 6d., 10s. 6d., 15s., 21s., 31s. 6d., 42s., and 63s. each.

☞ ALL FLOWER SEEDS POST-FREE.



Seedsmen by Royal Warrants to H.M. the Queen and H.R.H. the Prince of Wales,

WORDSLEY, STOURBRIDGE.

NOTICE THIS.—The best thing in NEW PEAS is "ABBOTT'S DUCHESS." The best for Exhibition, Market, or Table. For full particulars see *Gardeners' Chronicle*, February 12. 2*s.* per half-pint, smaller packets, 1*s.* and 6*d.* each, all sealed and post-free. Trade supplied from DAVID ABBOTT, Manager, Greenhouse Nurseries, Park Lane, near Doncaster.

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Sixteen First-class Certificates Last Year.

CANNELL AND SONS have always the finest and most complete collection of the above—strong healthy plants in 60's, many ready for shifting into 6-inch pots. Nothing can excel them for successful competition. All the best old kinds at reduced prices; and the same with the following grand new varieties, of which we hold a large stock.

Our Grand New Jubilee Varieties, Set of 15, £4.

EDOUARD AUDIGUIER, 2*s.* 6*d.*
MRS. N. DAVIS, or Golden Princess Teck, 3*s.*
ROI DE JAPONAISE, 2*s.* 6*d.*
BALPH BROCKELBANK, or Yellow Meg Merrilies, 2*s.* 6*d.*
YELLOW SNOWDROP, or Primrose League, 1*s.* 6*d.*
YELLOW ETHEL, or New Year's Day, the highest colour, and the best of all yellow sports, 1*s.* each; 10*s.* dozen.
MRS. H. J. JONES, 1*s.* 6*d.*

All are strong, clean, country-grown plants, that will make rapid growth at once. Sent either by post or rail all over the world, at prices stated. Cuttings half price.

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STANDEN'S MANURE

Established 20 *Years.*

THIS OLD-ESTABLISHED MANURE is acknowledged by the leading practical Gardeners in the United Kingdom and the Colonies to exceed all others in general fertilising properties and staying powers. It promotes a rapid, healthy, and robust growth to plants generally. *For Vines* it cannot be too highly recommended, and this fact is fully sustained from the result obtained by its use in the hands of some of the most successful Grape growers. It is a clean and dry Powder, with very little smell, which renders it particularly adaptable for ladies interested in plant culture.

The highly fertilising properties of this Manure render its money value in comparison with other manures at least double; and users will find that very small quantities will produce favourable results.

Sold in new and enlarged Tins, 1/-, 2/6, 5/6, 10/6, and 21/- each; and in Kegs at reduced prices—28 lb., 12/6; 56 lb., 23/-; 112 lb., 42/- each.

May be obtained from Nurserymen and Seedsmen in the United Kingdom and the Colonies.

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Horticultural Sundries Merchants,

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CATALOGUES Free to the Trade on application.

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Two Prize Medals.

Quality, THE BEST in the Market. (All sacks included.)

PEAT, best brown fibrous ... 5*s.* per sack; 5 sacks for 22*s.* 6*d.*
PEAT, best black fibrous ... 4*s.* 6*d.* ,, 5 sacks for 20*s.*
PEAT, extra selected Orchid 5*s.* 6*d.* ,, 5 sacks for 25*s.*
LOAM, best yellow fibrous ... } 1*s.* per bush., 3*s.* per sack.
PREPARED COMPOST, best } (sacks included).
LEAF MOULD, best only }
PEAT MOULD, ,, }
SILVER SAND, coarse, 1*s.* 6*d.* per bush., 14*s.* half ton, 24*s.* ton.
RAFFIA FIBRE, best only ... . 1*s.* per lb.
TOBACCO CLOTH, finest imported ... 8*d.* lb., 28 lb. 18*s.*
TOBACCO PAPER ,, (Spécialité) 8*d.* lb., 28 lb. 18*s.*
MUSHROOM SPAWN, finest Milltrack ... 5*s.* per bushel.

	In bags.				
CHUBB'S "PERFECT" FERTILISER, the Best Food for all kinds of Plants, Flowers, Fruits, Vegetables, &c. ...	Tins. 1/6	7lb. 3/-	14lb. 5/-	28lb. 8/-	56lb. 14/-	1 cwt. 22/-
CRUSHED BONES, best quality	1/2	2/-	3/6	6/-	12/-	
VIRGIN CORK, best quality only	—	3/-	5/6	10/6	17/-	

HORTICULTURAL CHARCOAL, ditto, 2*s.* 6*d.* per bushel.

COCOA-NUT FIBRE REFUSE (by Chubb's special process), sacks, 1*s.* each; 10 sacks, 9*s.*; 15 sacks, 13*s.*; 20 sacks, 17*s.*; 30 sacks, 25*s.*; 40 sacks, 30*s.* Truck-load, loose, free on rail, 25*s.* Limited quantities of G., special quality, granulated, in sacks only, 2*s.* each. Terms, strictly Cash with order.

CHUBB, ROUND & CO.,
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HORTICULTURAL SOILS, MANURES, SUNDRIES, and BERKSHIRE POTTERY. Catalogue free per post, of every Horticultural Requisite.
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PEAT—LOAM—SAND. — 50 Acres Light Brown PEAT, full of fibre, 9*s.* per yard, in truckloads. Yellow Fibrous LOAM, best in England), 10*s.* per ton, in truckloads. SILVER SAND, 10*s.* per ton, in truckloads.
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To Market Gardeners, &c.
To Grow fine Vegetables and Flowers, Gardeners should use
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One trial will prove the great value of this Manure, and ensure its constant use hereafter. It can be applied either separately or mixed with ordinary stable or farmyard manure. Rose Trees and Garden Plants are much benefited by being watered with a weak solution once or twice a week. Instructions on application, post free. Price free on rail at Sheffield, 12*s.* 6*d.* per cwt., or 7*s.* per 56 lb. P. O. Orders payable to The MANAGER, Sheffield Gas Company, Sheffield.

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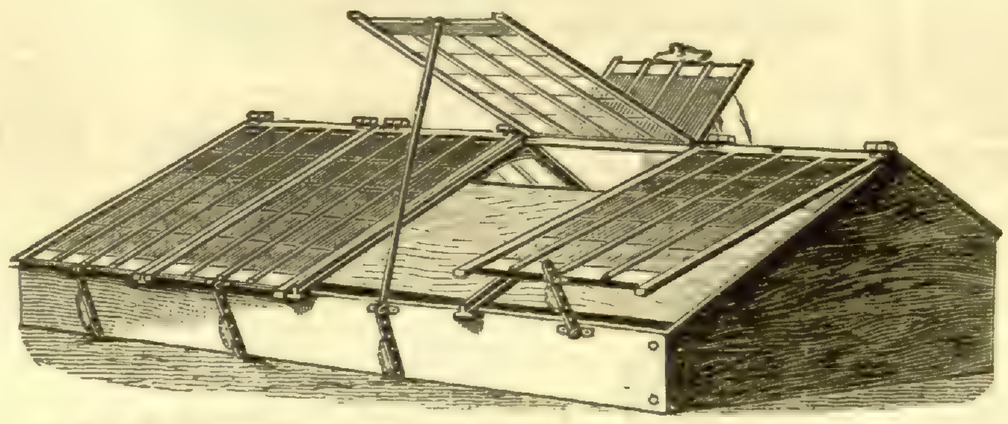

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2-LIGHT FRAME	... 8 feet	by 6 feet	£4 12 6
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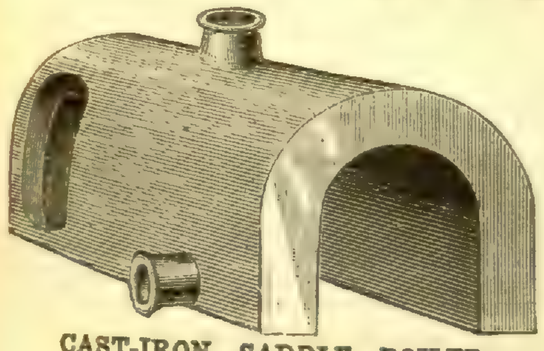

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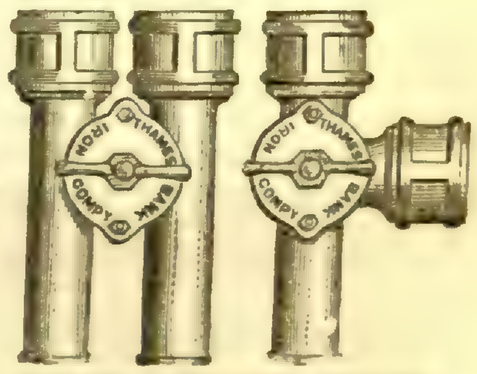

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_____ 1887.

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G. C.
April 2, 1887.

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4*d.* per bushel; 100 for 25*s.*; truck (loose, about 2 tons), 40*s.*; 4-bushel bags, 4*d.* each.

LIGHT BROWN FIBROUS PEAT, 5*s.* 6*d.* per sack; 5 sacks, 25*s.*; sacks, 4*d.* each

BLACK FIBROUS PEAT, 5*s.* per sack, 5 sacks, 22*s.*; sacks, 4*d.* each.

COARSE SILVER SAND, 1*s.* 9*d.* per bushel; 15*s.* per half ton; 26*s.* per ton, in 2-bushel bags, 4*d.* each.

YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1*s.* per bushel

SPHAGNUM MOSS, 8*s.* 6*d.* per sack.

MANURES, GARDEN STICKS, VIRGIN CORK, TOBACCO CLOTH, RUSSIA MATS, &c. Write for Price LIST.—**H. G. SMYTH**, F.R.H.S., 21, Goldsmith's Street, Drury Lane (lately called 17A, Coal Yard), W.C.

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Orders to the NATIVE GUANO CO. (Limited), 29, New Bridge Street, Blackfriars, London, E.C., where Pamphlets of Testimonials may be obtained. Agents Wanted.

BEESON'S MANURE is the best for all Horticultural Purposes. Sold in tins, 1*s.*, 2*s.* 6*d.*, 5*s.* 6*d.*, and 10*s.* 6*d.*, or 1 cwt. bags, sealed, 13*s.* each. By all Nurserymen or Seedsmen, or direct from Carbrook Bone Mills, Sheffield. 1 cwt., and over, carriage paid for cash with order only. Also Pure, Crushed, Unboiled BONES, any size, and guaranteed of the best quality. 8*s.* per cwt., free on rail.

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Special offer of Light Brown ORCHID PEAT, full of Pure Bracken fibre; also a good GENERAL PEAT, Quotation with sample on application to

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Sole Agent for the Continent—E. J. Voûte, Zeist, Holland.

NOTICE TO THE TRADE.—We shall be pleased to submit sample of our pure Blood, Phosphatic, and Alkaline GRASS MANURE for Parks and Cricket Grounds. Price on enquiry.

To intending Tobacco Growers.—Please send for sample of our POTASH MANURE for the Tobacco Plant, at £7 10*s.* per ton.

Our special Grass, Potato, Fruit, and Plant MANURES; PEATS, SOILS, &c., are offered in bulk at rates to suit all requirements.

W. WOOD AND SON, Manufacturers, Wood Green, London, N.

THOMSON'S IMPROVED VINE and PLANT MANURE.—This valuable Manure is made up solely on our premises here. Every Bag and Tin has our Name on it. It can be had from all Nurserymen and Seedsmen, and direct from us, 1 cwt. and over carriage paid.

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ENGLISH ROLL TOBACCO PAPER,

Cloth and Fumigating Mixture,

Is celebrated throughout the United Kingdom, and acknowledged to be best, safest, and strongest it is possible to obtain, and contains the pure essence of Tobacco only. 6 lb., 4*s.* 6*d.*; 14 lb., 10*s.*; 30 lb., 20*s.*; the above is carriage paid to London or any railway station in Kent. Parcels sent by Post, paid:—2 lb., 22 stamps; 3 lb., 2*s.* 6*d.*; 7 lb., 5*s.* 6*d.*; 11 lb. 8*s.* 6*d.* Safe delivery is guaranteed on all parcels. Imported Tobacco Paper, &c., at lower rates. Our Tobacco Paper, Cloth, and Fumigating Mixture still stand the best extant. Used in Royal Nurseries, the gardens of the Nobility, by leading men of the Profession, &c. TRADE INQUIRIES SOLICITED.

Manufacturers, Merchants, and Importers,

DARLINGTON BROS.,
NEW ROAD, CHATHAM, KENT.
P.O.O., Cheques, &c., Darlington Bros., Chatham.

THE ACME

WEED-KILLER, for destroying Weeds on Carriage Drives, Garden Walks, Yards, &c. Prices:—Per gallon, 2*s.*, tins included; 5 gallons, 1*s.* 6*d.* per gallon. Special quotations for larger quantities.

WORM-KILLER, for eradicating worms from Tennis Courts, Lawns, and plants in pots. Prices:—In bottles, 1*s.* 3*d.* and 2*s.* 6*d.* Sufficient to treat a full-sized Tennis Court, 21*s.*, carriage paid. Particulars free from the Manufacturers,

The AGRI-HORTICULTURAL CHEMICAL COMPANY, St. Stephen's Street, Tonbridge, Kent. Sold by Seedsmen and Florists. Address, H. A. GRINDROD, Tonbridge.

Sold in Packets, 6d. and 1s. each, and in

SEALED BAGS ONLY,

7 lb.	14 lb.	28 lb.	56 lb.	1 cwt.
2/6	4/6	7/6	12/6	20/-

CLAY & LEVESLEY,
TEMPLE MILL LANE,
STRATFORD, LONDON, E.

C. & L. also supply Crushed Bones, Bone Dust, Peruvian Guano, Sulphate of Ammonia, and Nitrate of Soda, in best qualities only,

---

To Gardeners.

PROCTOR AND RYLAND'S
well-known
Special Garden Manures.
Pure Ground Bone for Vines, Potting, &c.
10*s.* per bag of 1 cwt. on receipt of Postal Order.
Birmingham and Chester.

Gravel!—Gravel!—Gravel!

JOHN KNIGHT, Upper Bourne, Farnham, having a very large quantity of beautiful Red Binding Farnham GRAVEL for Carriage Drives and Garden Paths, will sell the same at a very reasonable price, as the ground must be cleared. Apply as above.

HONOURABLE MENTION and AWARD of MERIT Hull and East Riding Chrysanthemum Soc., 1886.

CERTIFICATE of MERIT, Scarborough Floral Society, 1886.

Especially adapted for cultivation of

FLOWERS, FRUITS, AND VEGETABLES.

Is not a Chemical production, but a purely natural Guano.

Useful everywhere alike, in Flower Garden, Conservatory and Greenhouse.

Packets, 1 lb., 6*d.*; 2 lb., 1*s.*; *postage extra.* Bags, 7 lb., 2*s.* 6*d.*; 14 lb., 4*s.* 6*d.*; 28 lb., 7*s.* 6*d.*; 56 lb., 12*s.* 6*d.*; 112 lb., 20*s.*, *carriage paid. Of the principal Nurserymen, Seedsmen, Florists and Chemists, or direct from*

William Colchester, Ipswich.

The genuine bears the Trade Mark and Name in full.

THE "SWIFT AND SURE" INSECTICIDE.

The Best and Cheapest Insect Destroyer.

Goes five times as far as any other preparation. Awarded Certificates of Merit at the Principal Shows.

PRICES:—8 oz. bottle with graduated measure, 1*s.* 6*d.*; 20 oz. ditto, 3*s.* 6*d*, (per Post, 4*d.* extra); per gallon, 10*s.* 6*d.* Special Quotations for large quantities.

THE PERFECT MILDEW DESTROYER.—Invaluable for destroying Mould and Mildew on Roses, Vines, &c. Prices: per 8 oz. bottle, 1*s.*; per 20 oz. do., 2*s.*

THE PERFECT WEED KILLER.—The best and cheapest means of effectually destroying Weeds, Moss, Lichens, &c., on Garden Walks, Carriage Drives, Stable Yards, Railway Stations, &c. It saves many times its cost in labour and eradicates weeds far more thoroughly than any hand weeding. One gallon makes 26 gallons for application Price, per gallon, 2*s.*; 5 gallons, 1*s.* 9*d.* per gallon; 10 gallons, 1*s.* 6*d.* per gallon.

THE PERFECT WORM DESTROYER.—Invaluable for destroying Worms on Bowling Greens, Cricket Grounds, Tennis Courts, Lawns, &c., and removing them from the roots of Plants in Pots. It does not injure Grass or the most delicate Plant. Price, per 8 oz. bottle, 1*s.* 6*d.*; 20 oz. do., 3*s.* 6*d.*; per gallon, 7*s.* 6*d.* Orders for 10 gallons and upwards at special rates.

MANUFACTURED BY

THE HORTICULTURAL & AGRICULTURAL CHEMICAL COMPANY,
103, HOLM STREET, GLASGOW,
And Sold by all Seedsmen and Florists.

Orchid Peat—a Specialty!

W. WOOD AND SON are now cutting from THE NEW ESTATE (the only estate celebrated for its special quality of ORCHID PEAT).

Send for Sample. Special Quotations.
Wood Green, London, N.

ECONOMY IN THE GARDEN!

The Best and Cheapest

HORTICULTURAL MANURES.

For Fruit, Vines, &c.	"LE FRUITIER."
For Pot Plants.	"UNIVERSAL PLANT FOOD."
For Potatos.	POTATO MANURE "SUCCESS."
For Lawns & Meadows.	"SPECIAL GRASS MANURE."
For Kitchen Garden.	"CONDENSED FARMYARD MANURE."
For Potting.	"THE SPECIAL COMPOSTS."
For Watering.	"LIQUID MANURE POWDER."

Sold in 1*s.* tins, and in 7 lb. bags, and upwards, by all Seedsmen, or direct from

W. WOOD & SON, F.R.H.S.,
Sole Manufacturers,
Wood Green, London, N.

WOOD & SON'S CATALOGUE and Price LIST, post-free, includes all the best qualities of ORCHID and other PEATS, LOAM, SAND, COCOA-FIBRE, MUSHROOM SPAWN, BONE MEAL, DRIED BLOOD, POTASH, AMMONIA, and all other HORTICULTURAL REQUISITES. Samples free.

CARDEN REQUISITES.

(As supplied to the Royal Gardens, and many of the Nobility and Gentry of the United Kingdom.)

BROWN FIBROUS KENT PEAT, 5*s.* per sack; 5 for 22*s.* 6*d.* BEST BLACK FIBROUS PEAT, 4*s.* 6*d.* per sack; 5 for 20*s.* COARSE SILVER SAND, of best quality. 1*s.* 6*d.* per bushel; 14*s.* per half ton; 25*s.* per ton. PEAT MOULD, YELLOW FIBROUS LOAM, each 1*s.* per bushel; 3*s.* per sack. PURE LEAF MOULD, 1*s.* per bushel; 4*s.* per sack. Best fresh COCOA-NUT FIBRE REFUSE, 1*s.* 3*d.* per sack; 10 for 10*s.*; 15 for 14*s.*; 20 for 18*s.*; 30 for 25*s.*; 2-ton truck, free on rail, 25*s.* SPHAGNUM MOSS, 2*s.* per bushel, 6*s.* per sack. HORTICULTURAL CHARCOAL, 2*s.* 6*d.* per bushel; 8*s.* per sack. BEST RAFFIA, 1*s.* per lb.; 7 lb. 6*s.* 6*d.* CRUSHED BONES, GUANO and other MANURES. STICKS, LABELS, Virgin CORK, Bamboo CANES, and POTTING COMPOSTS, ready for use, 5*s.* per sack. RUSSIA MATS, from 12*s.* to 21*s.* per dozen. SPECIALITE TOBACCO CLOTH and PAPER, 8*d.* per lb.; 28 lb. for 18*s.*; 56 lb. for 35*s.*; 1 cwt. for 67*s.* The best in the market. Price List post-free. Terms—cash with order.—W. HERBERT AND CO., Hop Exchange Warehouses, Southwark Street, London, S.E.

MECHI'S SOOT AND SEWAGE MANURE.

A dry powder, carefully manufactured by Mechi's process,

WHICH IS DISTINCT FROM ALL OTHERS.

The very best Manure for Roots, Grass, Potatos, Wheat, Barley, Oats, Turnips, Mangels, Fruit, Vegetables, Hops, &c.

DESTROYS WIREWORMS, SLUGS, INSECTS, and GRUBS.

35s. per Ton loose; 40s. per Ton in bags; 4s. per Cwt. in bag.

Delivered Free on Rail or Boat.

Extract from the London DAILY CHRONICLE, *Jan. 6, 1887.*

"The Metropolis Sewage Company succeeded in proving that *sewage rendered a poor gravel farm of 200 acres or 300 acres the most productive piece of land in the United Kingdom.* They had grown superb Strawberries of very good flavour, capital Corn, Maize 15 feet high, and Vegetables as good as Covent Garden ever exhibited."

Post-office Orders payable at Mark Lane.

69 and 70, MARK LANE, LONDON, E.C.

FERTILITY,

The Best Garden Manure.

In Tins, 2 lb., 1s. *Larger quantities are charged less.*

MILLER & JOHNSON, 30, Mark Lane, E.C.

Ground BONES, FISH GUANO, POTASH, CRUSHED HOOFS and HORNS, and all other MANURES, at lowest prices.

JENSEN'S

NORWEGIAN

FISH-POTASH GUANO

has given splendid results with

VINES, ROSES, CHRYSANTHEMUMS, AND TENNIS LAWNS.

The following Analysis is guaranteed:—

7 per cent. Ammonia.	20 per cent. Phosphates.
15 per cent. Potash.	10 per cent. Magnesia.

Only 5 per cent. Moisture.

RETAIL PRICES, CARRIAGE PAID.

2 lb. Tin, 1s.; Bags, 7 lb., 2s.; 14 lb., 4s.; 28 lb. 6s. 6d.; 56 lb., 10s. 6d.; 1 cwt., 16s.; 2 cwt., 30s. Bags free.

Write for Testimonials and Directions for Use.

J. JENSEN & CO., Ld.,
10, ST. HELEN'S PLACE, LONDON, E.C.

PEAT—PEAT—PEAT.

CATERELL & SON, RINGWOOD, HANTS,

Are now prepared to receive Orders for the above.

GOOD SOUND PEAT, very fibrous, for Orchids, in sacks only; do., for Stove, Greenhouse, Hardwooded Plants, and Rhododendrons, in any quantity.

GOOD YELLOW FIBROUS LOAM, Coarse and Fine SILVER SAND, SPHAGNUM, &c.

Special low terms to the Trade. Price List on application.

JENSEN'S

Every grain fertilizes because the Guano is perfectly pure. It is most economical, one part of Manure to 100 parts of soil being ample for garden use.

Write for Pamphlet, Testimonials and Instructions.

FISH-POTASH

Dr. Voelcker's analysis guaranteed. FISH-POTASH contains Ammonia, Phosphates and Potash in large proportions, which are the principal elements of fertilization.

GUANO.

2-lb. Tins, 1s.; in Bags, 7 lbs., 2s.; 14 lbs., 4s.; 28 lbs., 6s. 6d.; 56 lbs., 10s. 6d.: 1 cwt., 16s.; 2 cwt., 30s., carriage paid. Special terms for larger quantities.

J. JENSEN & CO. LIMITED,

10, St. Helen's Place, London, E.C.

GISHURST COMPOUND, used by leading Gardeners since 1859 against Red Spider, Mildew, Thrips, Green Fly, and other Blight. 1 to 2 ounces to the gallon of soft water; 4 to 16 ounces as winter dressing for Vines and Orchard-house Trees; and in lather from the cake against American Blight. Has outlived many preparations intended to supersede it. Boxes, 1*s.*, 3*s.*, and 10*s.* 6*d.*

GISHURSTINE keeps Boots dry and soft on wet ground. Boxes, 6*d.* and 1*s.*, from the Trade. Wholesale from PRICE'S PATENT CANDLE COMPANY (Limited), London.

GARDEN NETTING.

S. A. SANDS

(Successor to J. W. Haythorn),

Manufacturer of Hexagon and Chiswick

GARDEN NETS.

Warranted to Protect Bloom from Frost, Winds, Hail, and Fruit from Birds, Wasps, &c.

Patterns and Prices Free per Post.

Address—S. A. SANDS,

20, CLUMBER STREET, NOTTINGHAM.

GARDEN SHADINGS, NETTING, TIFFANY, SCRIM, HESSIAN,

RUSSIA MATS, RAFFIA, PEAT,

SAND, COCOA FIBRE REFUSE, &c.,

At very Lowest Prices.

CATALOGUE on APPLICATION.

JAMES T. ANDERSON,

135, COMMERCIAL STREET, LONDON, E.

RUSSIA MATS, RAFFIA FIBRE, TOBACCO RAG, SHADING MATERIALS, TWINES, &c., supplied to the Trade only, at lower prices than any other firm. MARENDAZ and FISHER, James Street, Covent Garden, W.C.

PROTECT YOUR PLANTS

"FRIGI DOMO"

REGISTERED TRADE MARK

CONSERVATORY BLINDS made to order,

of Plain or Striped Material.

NEW CANVAS SHADING.

It is perfectly rot-proof, keeps sound under conditions where other fabrics have shown fungoid growth and incipient decay.

FOR PRICE LIST & PARTICULARS ADDRESS:

BENJAMIN EDGINGTON

2 DUKE ST. LONDON BRIDGE

Cheapest System in Existence.

CAN BE FIXED BY ANY ONE.

FOR PARTICULARS APPLY TO

THE PATENT ECONOMIC GLAZING CO.,

5, Westminster Chambers, London, S.W.

Rosher's Garden Edging Tiles.

THE ABOVE and many other PATTERNS are made in materials of great durability. The plainer sorts are specially suited for KITCHEN GARDENS, as they harbour no Slugs or Insects, take up little room, and once put down incur no further labour or expense, as do "grown" Edgings, consequently being much cheaper,

GARDEN VASES, FOUNTAINS, &c., in Artificial Stone, very durable and of superior finish, and in great variety of design.

F. ROSHER and CO., Manufacturers, Upper Ground Street, Blackfriars, S.E.; King's Road, Chelsea, S.W.; Kingsland Road, E.

Agents for LOOKER'S PATENT "ACME" FRAMES, PLANT COVERS, and PROPAGATING BOXES: also for FOXLEY'S PATENT BEADED GARDEN WALL BRICKS.

Illustrated Price LISTS Free by Post. The Trade supplied.

ORNAMENTAL PAVING TILES, for Conservatories, Halls, Corridors, Balconies, &c., from 3*s.* per square yard upwards. Pattern Sheet of Plain or more elaborate Design, with Prices, sent for selection.

WHITE GLAZED TILES, for Lining Walls of Dairies, Larders, Kitchen Ranges, Baths, &c. Grooved and other Stable Paving of great durability, Wall Copings, Drain Pipes and Tiles of all kinds. Roofing Tiles in great variety, Slates, Cement, &c.

F. ROSHER and CO., Brick and Tile Merchants.

See Addresses above.

SILVER SAND, fine or coarse grain as desired. Price by post, per Ton or Truckload, on Wharf in London, or delivered direct from Pits to any Railway Station. Samples of Sand free by post.

FLINTS and BRICK BURRS for Rockeries or Ferneries.

KENT PEATS or LOAM supplied at lowest rates in any quantities.

F. ROSHER and CO.—Addresses see above.

N.B.—Orders promptly executed by Rail or to Wharves.

A liberal Discount to the Trade.

HORTICULTURAL GLASS.

A large quantity of all descriptions and sizes in stock, at the lowest possible prices.

NICHOLLS & CLARKE,

SHOREDITCH, LONDON, E.

DOULTON & WATTS,

LAMBETH POTTERY, LONDON, S.E.

VASES, PEDESTALS, FOUNTAINS, GARDEN EDGINGS, &c., in

IMPERISHABLE TERRA COTTA.

Plain and Ornamental Pavings.

Tiles for Lining Walls of Conservatories,

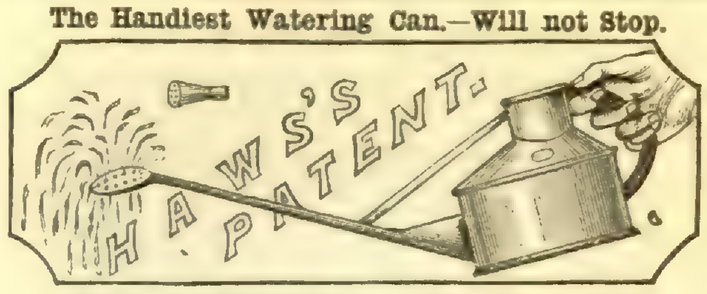
ART POTTERY, including JARDINIERES AND OTHER

Table Decorations and Vases, Fountains, &c., for the Conservatory, in

DOULTON WARE, LAMBETH FAIENCE, AND THE NEW SILICON WARE.

Show Rooms, Albert Embankment, S.E.

The Handiest Watering Can.—Will not Stop.



Apply to PATENTEE, 4, Mayola Road, Clapton, E.

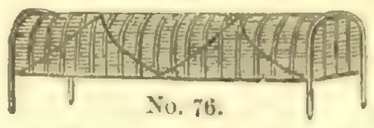
Ladies' Cans from 2*s.* 6*d.*; Parcel Post, 4½*d.* One Gallon, with two roses, 4*s.* 6*d.*; Parcel Post, 6*d.*

GARDEN SHADINGS, TIFFANY and SCRIM, COTTON WOOLS, WADDINGS.

JOSEPH COOKSON, 21, New Cannon Street, Manchester.

THOMAS'S PEA GUARDS

and GARDEN REQUISITES.

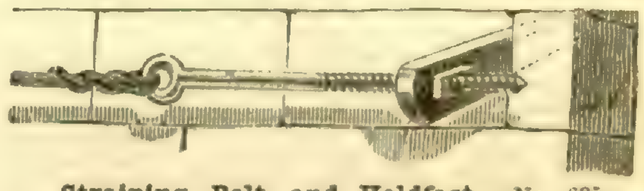


No. 76.

No. 80.

3 feet long.
Galvanised after made.
Either pattern.
Price, 5s. per dozen.
Two end pieces included with each dozen.
4 dozen carriage paid to any station within 100 miles on receipt of remittance for **21s.**

FITTINGS for WIRING WALLS

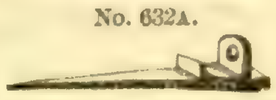


Straining Bolt and Holdfast.—No. 635.
As illustrated above, price 3*s.* 3*d.* per doz.
Driving Eyes.—No. 631. Terminal Holdfasts.—No. 632.

No. 632A.

Per doz. **2s.**

2 2½ 3 3½ inches.
3d., 4d., 5d., 7d. per doz.



2s. 6d.

Best Quality Galvanised Wire, 1s. 3d., 1s. 6d., 1s. 9d. per 100 yards.

Illustrated CATALOGUE on application.

J. J. THOMAS & CO.,

87, QUEEN VICTORIA STREET, E.C.;

Works: 362, EDGWARE ROAD, LONDON, W.

GARDEN NETTINGS.
HOTHOUSE SHADINGS.
TIFFANY.

RIGBY, WAINWRIGHT & CO.,

MANUFACTURERS,

Neptune Works, Manchester,

Cotton Wool and Wadding

for Florists and Nurserymen.

Send for Samples and Prices.

HILL & SMITH'S

BLACK VARNISH

for preserving Ironwork, Wood, or Stone.

(Registered Trade Mark.)

An excellent substitute for oil paint, at one-third the cost. Used in all London Parks, at Windsor, and Kew Gardens, and on every important estate in the Kingdom. Has stood the test of forty years' trial. Requires no mixing; can be applied cold by any ordinary labourer.

Price 1*s.* 6*d.* per gallon at the manufactory, or carriage-paid to any railway station, 1*s.* 8*d.* per gallon in casks of 36, 20, or 10 gallons.

CAUTION.—Every cask bears the above Registered Trade Mark. Beware of cheap imitations.

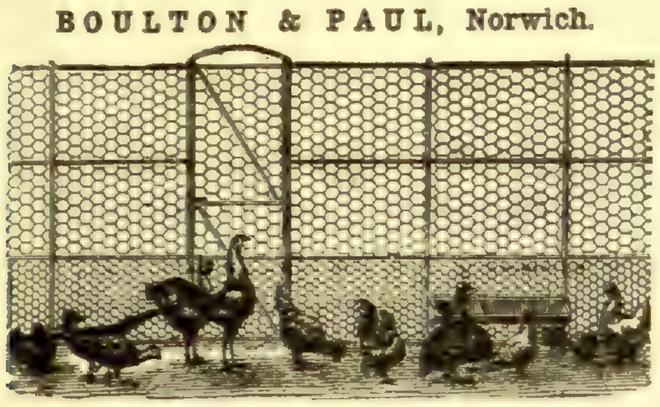
HILL & SMITH,

Brierley Ironworks, Dudley;

118, Queen Victoria Street, London, E.C.;

47, Dawson Street Dublin.

BOULTON & PAUL, Norwich.



MOVABLE FENCING for Poultry and Pheasants.

This is a good strong, serviceable Hurdle, which we can thoroughly recommend; the lighter Hurdle is offered to meet competition. Reduced Cash Prices:—

6 feet high, 6 feet wide. Carriage paid on orders above £2.
Strong Hurdle ... 5s. each. | Light Hurdle ... 3s. 6d. each.
Doorways, 7s. 6d. each; Corner Pillars, 1s. 6d. each.

Manufacturers of all kinds of appliances for the Kennel, Garden, Park, Pleasure Grounds, and Aviary. General CATALOGUE sent free by Parcel Post. [B 24 2/4/87.

THE MOST SUITABLE FOR

SHADING ORCHIDS, FERNS,

Palms, and Stove and

GREENHOUSE PLANTS.

WILLIAMS' HOTHOUSE SHADING.

It is a strong, durable Cotton Netting, woven in squares so close as to exclude the direct rays of the sun, but admitting the greatest amount of light attainable through shading.

It withstands the weather better than any other class of Shading, and may be beneficially used on account of the thickness of its texture, during cold weather, to keep the frost out. The leading Orchid and Plant Growers in the country have used this material for some years, and speak very highly of it, pronouncing it to be the very best material for Plants they have ever used.

Blinds made up and fixed complete.

Sold in pieces, 30 yards long by 1½ yard wide. Price 40s. each. Samples submitted gratis.

B. S. WILLIAMS,
VICTORIA and PARADISE NURSERIES,
UPPER HOLLOWAY, LONDON, N

THOS. W. ROBINSON,

DENNIS PARK IRONWORKS, STOURBRIDGE,

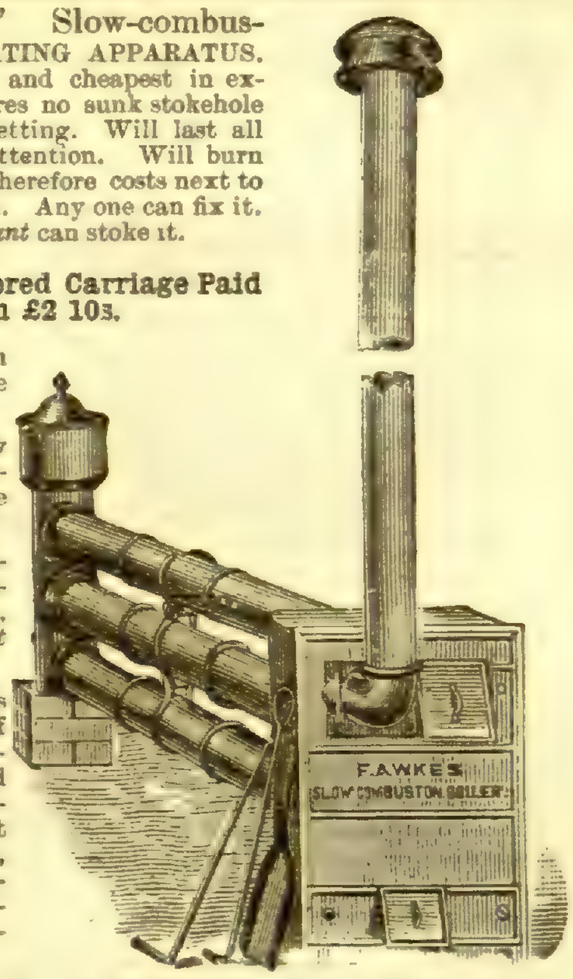
The "Expansion Joint."

The Best and Quickest Made.

4-in. Expansion Joint Hot-water Pipes, 9 feet long, 4s. 3d. each;
4-in. Socket Hot-water Pipes, 9 feet long, 4s. 6d. each.
Full Illustrated Revised Price List on application.

FAWKES' Slow-combustion HEATING APPARATUS.—Most efficient and cheapest in existence. Requires no sunk stokehole and no brick setting. Will last all night without attention. Will burn house cinders, therefore costs next to nothing for fuel. Any one can fix it. A domestic *servant* can stoke it.

Boilers Delivered Carriage Paid from £2 10s.



Numbers in use all over the country.

Only Slow Combustion Apparatus of the kind.

Beware of inefficient incomplete Apparatus, which will not last all night.

Full particulars and Prices of every sized Apparatus, and numerous Testimonials for last three seasons, showing enormous success, post-free on application.

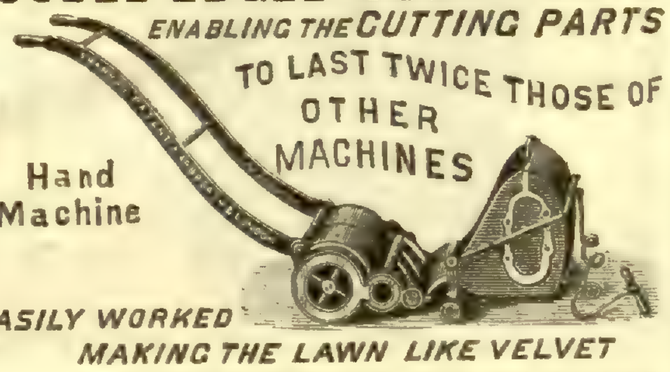
CROMPTON & FAWKES,
CHELMSFORD.

WANTED, by a Cricket Club, a One-horse ROLLER, and a One-horse MOWING MACHINE. Send particulars and price to
T. S., Messrs. Street & Co., 30, Cornhill, E.C.

Shanks's Patent

LAWN MOWER

THE ONLY LAWN MOWER FITTED WITH
DOUBLE EDGED SOLE PLATE
ENABLING THE CUTTING PARTS
TO LAST TWICE THOSE OF OTHER MACHINES



Hand Machine

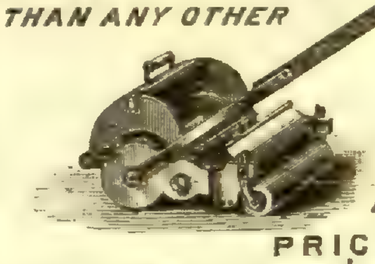
EASILY WORKED
MAKING THE LAWN LIKE VELVET
DOES NOT GET OUT OF ORDER

PRICES

To cut 10 inches wide	£3. 10. 0	To cut 19 inches wide	£8. 0. 0
To cut 12 inches wide	4. 10. 0	To cut 22 inches wide	8. 10. 0
To cut 14 inches wide	5. 10. 0	To cut 24 inches wide	9 0. 0
To cut 16 inches wide	6. 10. 0		

The "IMPROVED AMERICAN" LAWN MOWER

THIS MACHINE IS EASIER TO WORK THAN ANY OTHER



IT CAN BE USED WITH OR WITHOUT THE GRASS COLLECTING BOX MAY BE EITHER PUSHED OR PULLED EVERY PART PROTECTED

PRICES

10 inch machine	£3. 0. 0	14 inch machine	£4. 15. 0
12 inch machine	4. 0. 0	16 inch machine	5. 10. 0

GRASS BOXES EXTRA

HORSE AND PONY MACHINES

ILLUSTRATED LISTS OF THESE UNRIVALLED MACHINES POST FREE

GARDEN ROLLERS

OF ALL SIZES

ALEX. SHANKS & SON
DENS IRON WORKS ARBROATH
& 27, LEADENHALL STREET, LONDON, E.C.

A LARGE STOCK OF MACHINES OF ALL SIZES ALWAYS KEPT AT 27, LEADENHALL STREET
WHERE REPAIRS CAN ALSO BE EXECUTED
SMALL LAWN MOWERS
6 inch 25/-, 7 inch 35/-, 8 inch 45/-,

GLASSHOUSES & HEATING.
B. W. WARHURST
PRICES FREE
31A, BEAUFORT STREET, CHELSEA, S.W.

WRIGHT & HOLMES.

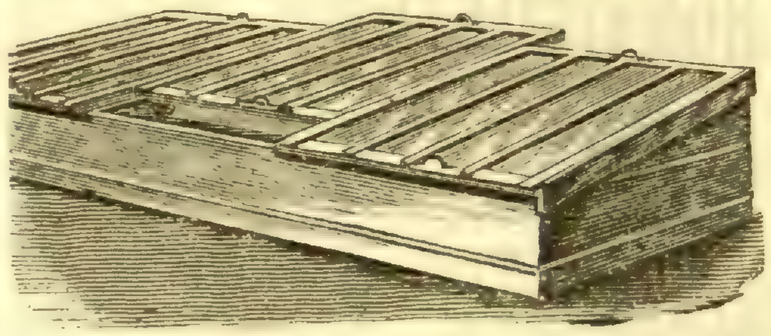


Figure 6.—Cucumber Frames.

Lights two inches thick, glazed with 21-oz. English glass in our patent bars with copper screws. The Frames are of superior make, sides and ends being bolted to the iron legs, painted four coats, well finished. Carriage paid to any railway station in England or Wales, at the following low prices for cash:—

8 feet by 6 feet ...	£3 4 0	20 feet by 6 feet ...	£7 5 0
12 feet by 6 feet ...	4 11 6	24 feet by 6 feet ...	8 12 6
16 feet by 6 feet ...	6 0 0	28 feet by 6 feet ...	10 0 0

Packing cases charged 4s. each; if returned carriage paid, full amount allowed. Estimates given for all kinds of Greenhouses on application to

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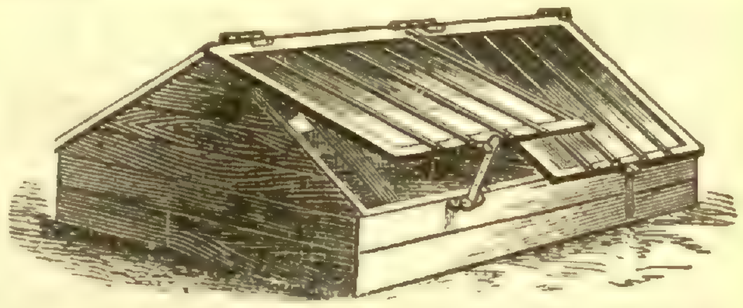

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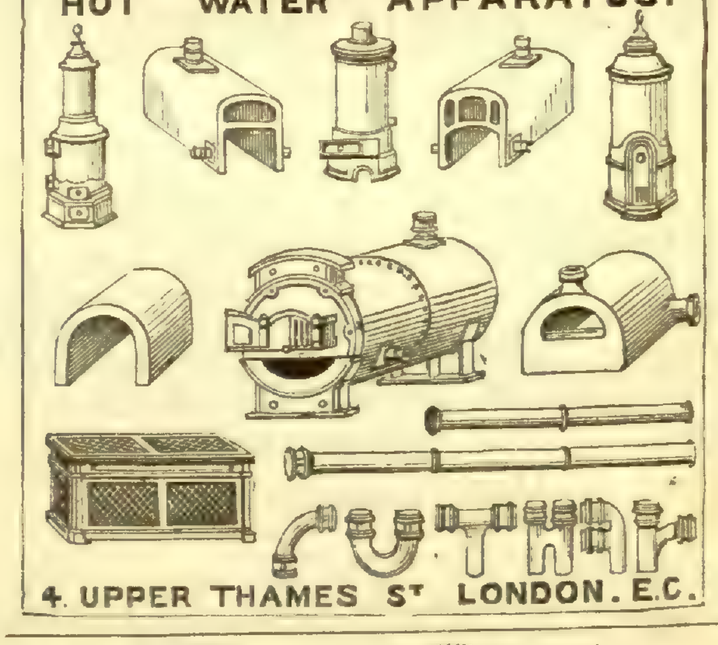

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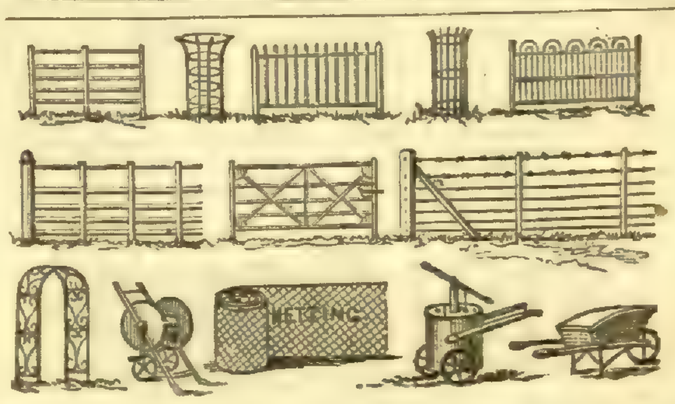

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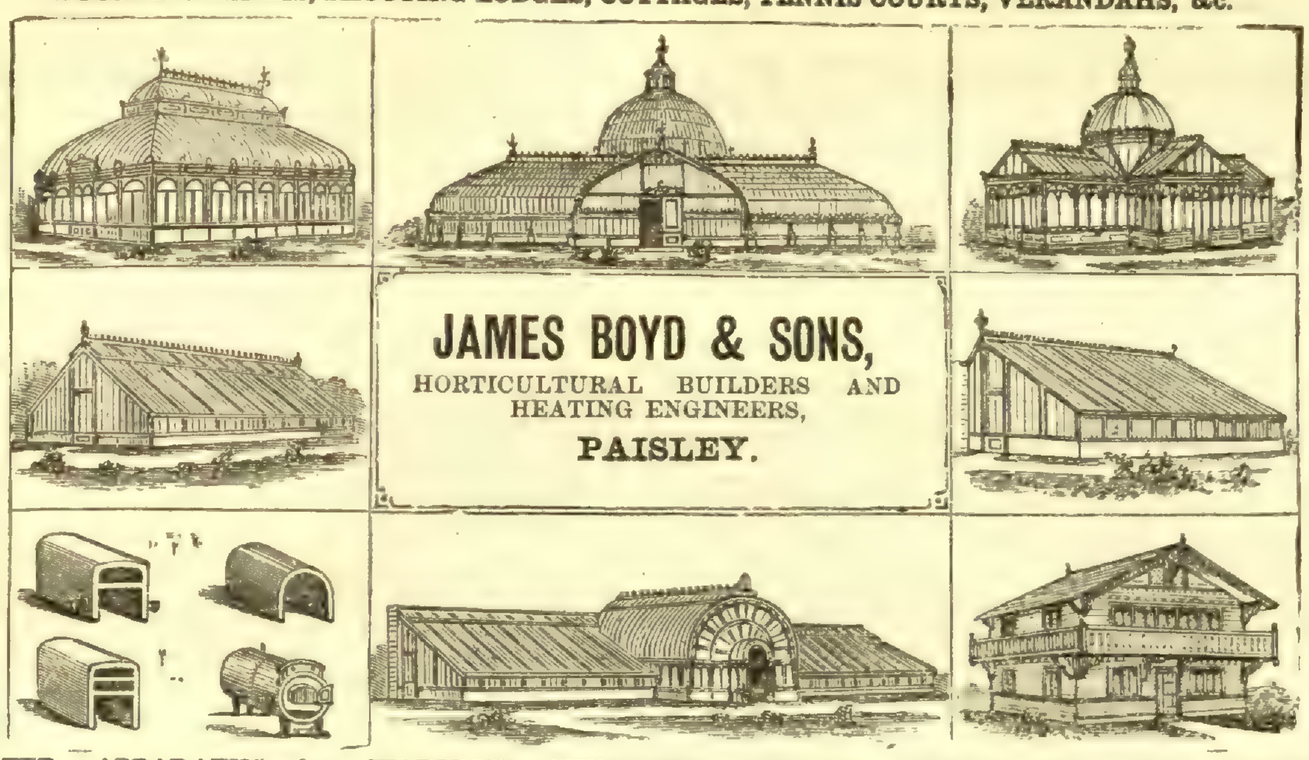

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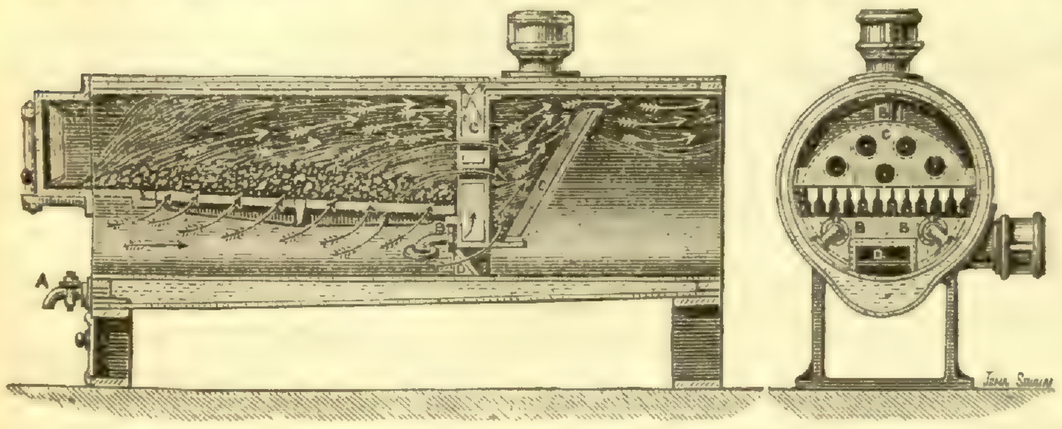

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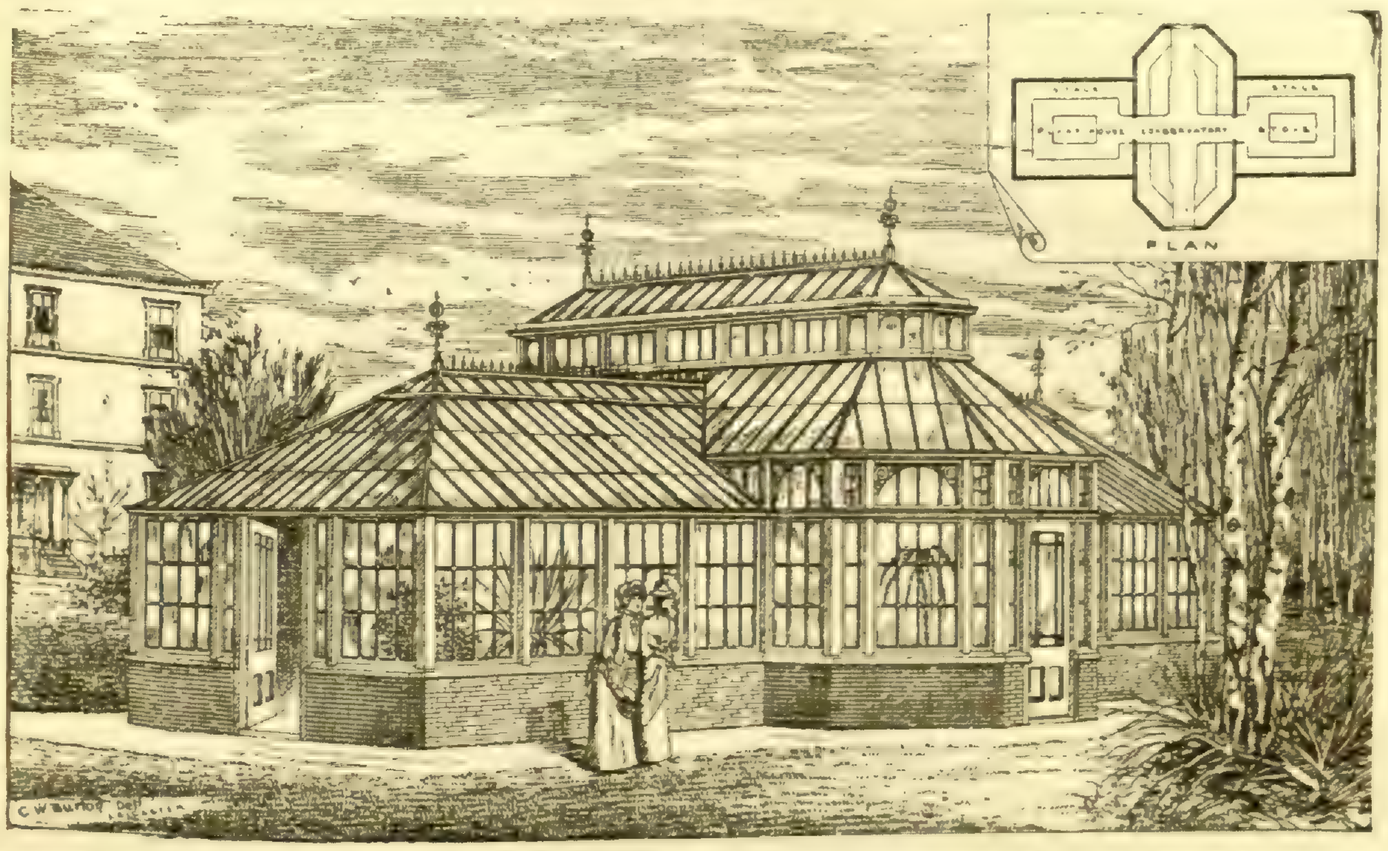

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The Late EMPEROR OF THE FRENCH. The EMPEROR OF RUSSIA,
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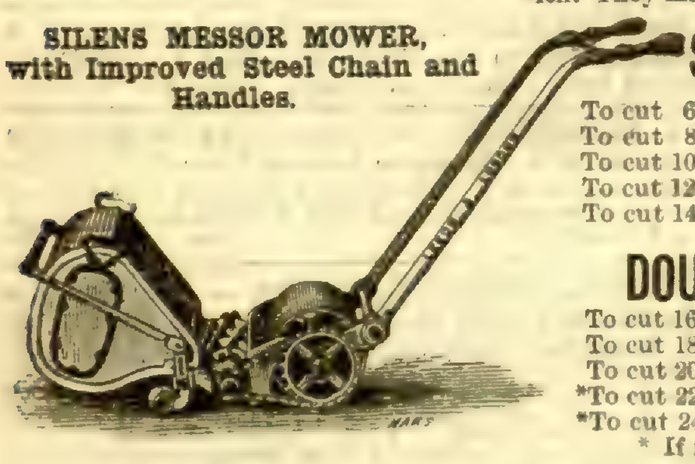

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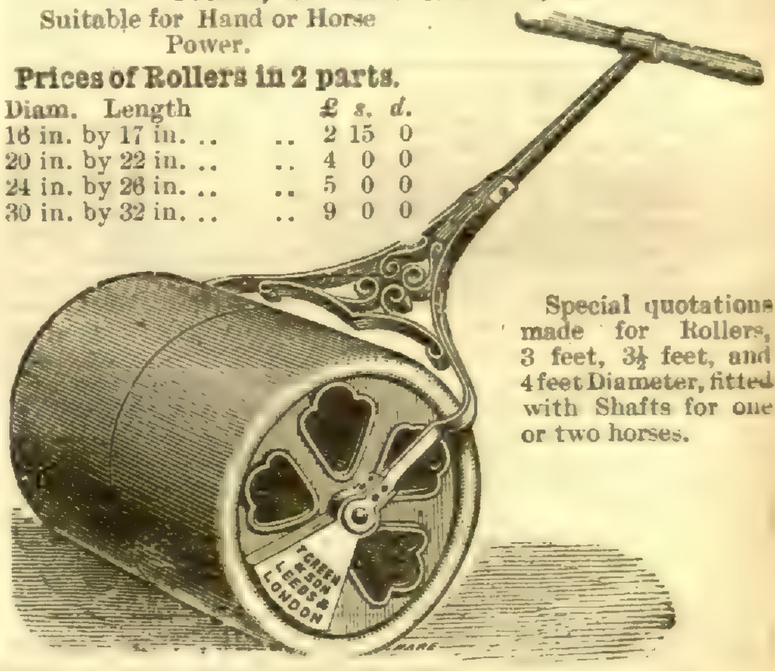

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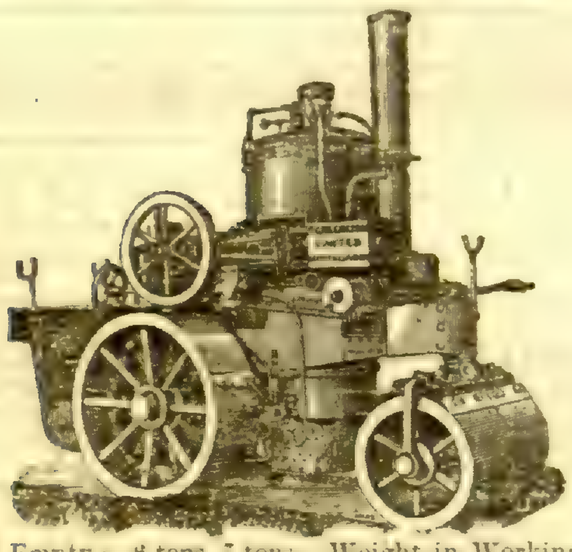

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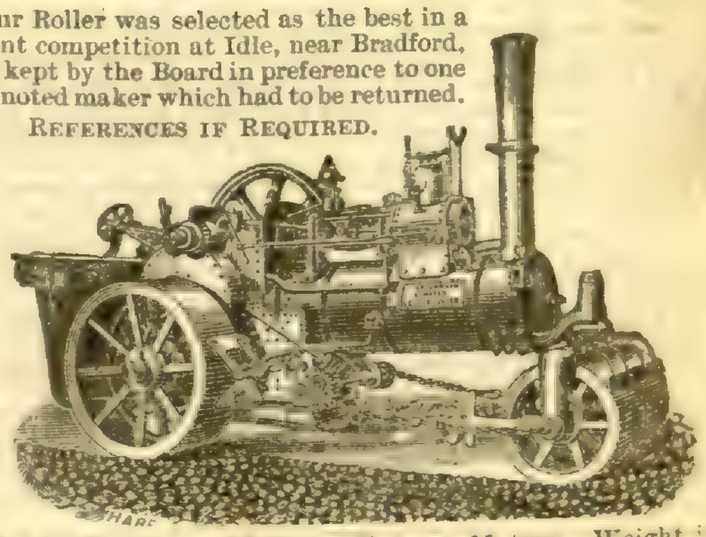

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CONTENTS.

American Exhibition ...	477	Lælia anceps alba ...	484
"Botanical Magazine" .	479	"Lindenia"	486
Bulb garden, the ...	482	Narcissus triandrus var. pulchellus, blighted ...	490
Bull's Nursery, Mr. W. .	487	Nephrolepis rufescens ...	476
Cinerarias	490	Nephthytis picturata ...	476
Clematis	480	Nursery notes	487
Colonial notes	482	Odontoglossum crispum var. hyperxanthum ...	477
Covent Garden sales ...	484	Orchid-houses, the ...	489
Cultural memoranda ...	482	,, notes	491
Daffodil Committee ...	486	Orange trees in pots ...	480
Daffodils, White Trumpet	490	Pleurothallis insignis ...	477
Dendrobium chlorostele ×	477	Polemonium	483
Emigration	486	"Reichenbachia"	485
Flower garden, the ...	478	Rock garden	478
Forestry	489	Roses	480
Frost and Conifers ...	484	Societies:—	
Fruit register	478	Torquay Horticultural	491
Fruits under glass ...	489	Tobacco culture	486
Gardeners' Benefit Society	490	Trade memoranda ...	486
,, than gardens, more	490	Trees and shrubs... ...	482
Gardenia-root, diseased .	488	Vertegans' nursery, Mr.	487
Ghent, plant sale in ...	485	Violet cultivation in frames	480
Hardy fruit garden ...	490		
Hindlip Hall	475		
Kitchen garden, the ...	483		

ILLUSTRATIONS.

Gardenia-root disease	488, 489
Lælia anceps alba	485
Nephrolepis rufescens	481
,, ,, habit of	477

ROYAL HORTICULTURAL SOCIETY,
South Kensington, S.W.
NOTICE!—COMMITTEE MEETINGS: Scientific at 1 P.M., in the Lindley Library; Fruit and Floral, at 11 A.M., and Narcissus at 12 noon, in the Conservatory, on TUESDAY NEXT, April 12. Admission free to Fellows at 12 o'Clock; and to the Public at 1 o'Clock, upon payment of 1s.
N.B.—Entrances, N.E. Orchard House, Exhibition Road; and Exhibitors' Entrance, east side of Royal Albert Hall.

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THE SOCIETY of APOTHECARIES of LONDON give notice that a Course of TWELVE LECTURES on BOTANY will be delivered by J. G. BAKER, F.R.S., and F.L.S., at their Garden at Chelsea, on the Saturdays of May, June, and July next, at 3 P.M.
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PETER LAWSON AND SON (Limited), Edinburgh, are prepared to Book Orders for the "IMPERATOR" POTATO, as sent out by them, also other leading kinds. Prices upon application.

A. BROWN, FRUIT and FLOWER SALESMAN, Central Avenue, Covent Garden, W.C., will, upon receipt of Consignments, return money the following day.

SQUELCH AND BARNHAM, North Row, Covent Garden, W.C., are OPEN TO DISPOSE OF any quantity of MUSCATS and BLACK GRAPES, TOMATOS, FRENCH BEANS, STRAWBERRIES, CHOICE FLOWERS, &c. Highest Market Prices obtained; Account Sales daily, Cheques weekly or as preferred by Sender. Baskets and Labels supplied. References given.

MESSRS. GREGORY AND EVANS, NURSERYMEN, Sidcup, and 285, 286, 287, 288, Flower Market, Covent Garden, W.C., are open to RECEIVE CONSIGNMENTS of Choice CUT FLOWERS in any quantity for their Commission Department. Boxes and Labels supplied.
Telegraph Address—"COMMISSION, SIDCUP."

WANTED, Large Specimens of KENTIAS, SEAFORTHIAS, LATANIAS, ARECAS, &c. Good prices given for plants 9 feet and upwards; 15 to 30 gs. offered for good Kentias, 9 feet and upwards.
Address, W. WEEKS, 440, Fulham Road, S.W.

WANTED, large PALMS, TREE FERNS, and other large ORNAMENTAL FOLIAGED PLANTS, in EXCHANGE for ORCHIDS or other PLANTS. Send full particulars.
The LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, The Vineyard, Garston, Liverpool.

WANTED, tall PALMS, for cash. Particulars to
ROBERT GREEN, Floral Establishment, Crawford Street, W.

Hertford Nurseries.
Established upwards of 100 years.
E. W. AND J. O. FRANCIS beg to announce that, having PURCHASED the above well-known BUSINESS (lately conducted by Francis Bros.) these old-established Nurseries will on and after JANUARY 28, 1887, be carried on by them under the old style of
E. P. FRANCIS AND CO.
The Nurseries, Hertford.—January 28, 1887.

Natal, South Africa.
BULBS, TUBERS and TERRESTRIAL ORCHIDS.
R. W. ADLAM, Maritzburg, Natal, has just published his CATALOGUE of the above; it may be had post-free on application to him, or to
Messrs. R. SILBERRAD AND SON, 25. Savage Gardens, Crutched Friars, London, E.C.

New Zonal Pelargonium,
QUEEN OF WHITES IMPROVED.—It is without doubt the best White Zonal ever offered. It has been in flower all the winter at our Nurseries, and will be ready to send out May 1. £1 per dozen, strong plants. Certificate Royal Botanic Society, May 19, 1886.
PHILIP LADDS, The Nurseries, Bexley Heath, and Swanley.

Spring, 1887.
CHARLES TURNER'S New General and Descriptive CATALOGUE of Florist Flowers, &c., is now ready, and may be had free on application.
The Royal Nurseries, Slough.

Rhododendrons.
JOHN WATERER AND SONS, Bagshot, Surrey, are the Great Exhibitors of Hardy Scarlet and White RHODODENDRONS.
Their CATALOGUE is ready, and may be had on application.

Rhododendron "caucasicum albums" (true).
JOHN CARTER, Nursery, Keighley, has several thousands of this most useful Plant to offer; well set with buds and fine healthy Plants, from 8s. per dozen to 3s. 6d. each. Where white flowers are wanted this variety is invaluable as there is no difficulty in having a succession from Christmas till May, and for the garden its fine bushy habit, hardiness, and free flowering is not equalled by any other Rhododendron. Samples if required.

Special Offer.
ISAAC MATTHEWS AND SON have for Sale 500,000 RHODODENDRONS, varying in size from 4 to 6 inches up to 2 to 3 feet—Cunningham's White, Jacksoni, caucasicum, pictum, Seedling Hybrids, Hybrid ponticum, and named varieties; good bushy plants. HOLLIES, CONIFERS, FOREST TREES in large quantities; AUCUBAS, YEWS, and other Nursery Stock. CATALOGUES now ready, and may be had, gratis and post-free, on application to the Nurseries, Milton, Stoke-on-Trent.
Our Nurseries are 110 acres.

CHEAP and BEAUTIFUL TREES for Villa Planting, New Parks, &c., to give immediate effect. See Advertisement, *Gardeners' Chronicle*, April 2, p. 439.
Apply to W. JACKSON AND CO., Bedale, Yorkshire.

RICHARD WALKER can supply the following for Cash:—Early Rainham and Enfield Market CABBAGE, 3s. per 1000; Giant Rocca ONIONS, true, 5s. per 1000; CABBAGE LETTUCE and Brown COS, 5s. per 1000; ASPARAGUS, 3-years old, 20s, per 1000; good SEA-KALE for Planting, 3s per 100; Sovereign RHUBARB Roots, earliest and best in Cultivation, 2s. per dozen.
The Market Gardens, Biggleswade, Bedfordshire.

Strawberries for Forcing.
H. LANE AND SON have a few hundred in 32-pots of the following sorts:—King of the Earlies, Captain, President, Keens', Sir J. Paxton, and Dr. Marier; also Runners in small 60-pots for planting. Quantity of each and price on application.
The Nurseries, Berkhamstead, Herts.

To the Trade.
SEED POTATOS.
H. AND F. SHARPE are prepared to make very advantageous offers of their fine selected stocks of SEED POTATOS to purchasers of a quantity. Their SPECIAL PRICED LIST comprises all the best and most productive varieties in cultivation.
Seed Growing Establishment, Wisbech.

SALES BY AUCTION.

Wednesday Next.

AZALEAS, PALMS, and other plants from Belgium and elsewhere, 1000 Standard and Dwarf ROSES, fine named sorts, CARNATIONS, PICOTEES, LILIUM AURATUM, Japanese IRIS, English-grown LILIES, Herbaceous plant SEEDS, and a great variety of HARDY PLANTS and BULBS.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on WEDNESDAY NEXT, April 13, at Half-past 12 o'Clock precisely.

On view morning of Sale, and Catalogues had.

Friday Next.

CATTLEYA MENDELII, ODONTOGLOSSUM ALEXANDRÆ. The first Consignment this Season. All in grand condition.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Shuttleworth, Carder, & Co., to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, April 15, at half-past 12 o'Clock precisely:—

CATTLEYA MENDELII, just received in splendid condition, many with full leaf, and including very fine masses.

ODONTOGLOSSUM ALEXANDRÆ. The first consignment this season. These are also in grand condition, and of the very best type.

CATTLEYA MOSSIÆ, from a new district, in fine condition.

At the same time will be SOLD five cases of CATTLEYA TRIANÆ, received direct from Mr. F. Man, and a beautiful variety of CYPRIPEDIUM WALLISII in flower.

On view morning of Sale, and Catalogues had.

Friday Next.

FIVE CASES OF CATTLEYA TRIANÆ.
Received direct from Mr. F. Man.
FOR SALE WITHOUT RESERVE.

MESSRS. PROTHEROE AND MORRIS will include the above in their SALE of ORCHIDS on FRIDAY NEXT, April 15.

On view morning of Sale, and Catalogues had.

Willesden Green.

By Order of the Executrix. SMALL FREEHOLD NURSERY, with Two Greenhouses; also in Lots, the Stock of Shrubs, Plants in Pots, &c.

Important to Young Beginners.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, on the Premises, The Nursery, Strode Road, Willesden Green, on TUESDAY, April 26, at 1 o'Clock precisely.

May be viewed. Catalogues had of Mrs. Van Celst on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

Orchids in Flower.

SPECIAL SALE, APRIL 26.

MESSRS. PROTHEROE AND MORRIS beg to announce that their NEXT SPECIAL SALE of ORCHIDS in FLOWER, will take place on TUESDAY, April 26, and they will be glad to receive notice of entries in due course.

The Downside Collection of Orchids.

Highly IMPORTANT SALE of selected duplicate plants from this renowned Collection, consisting chiefly of plants matchless in point of rarity and culture.

By order of Wm. Lee, Esq., in consequence of the overcrowded state of the houses.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to SELL by AUCTION, on the Premises, Downside, Leatherhead, on TUESDAY and WEDNESDAY, May 3 and 4, at half-past 12 o'Clock precisely each day, selected duplicate and other ESTABLISHED ORCHIDS.

A list of the principal plants will be found in the *Gardeners' Chronicle* for Saturday, March 19, 1887.

The Orchids may be viewed any day prior to the Sale on presentation of Catalogue or card to view, which are now ready, and may be obtained of Mr. WOOLFORD, the Head Gardener, on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Pewsey, Wilts.

By order of the Trustee under a Deed of Assignment.

IMPORTANT SALE of the well known and valuable COLLECTION of EXHIBITION PLANTS (so successfully shown by Mr. J. F. Mould, at the principal London and Provincial Shows), GREENHOUSE PLANTS and NURSERY STOCK, together with the Goodwill of the Business.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL the above, on the Premises, early in MAY.

Fuller particulars will appear in future advertisements.

Wednesday Next.—(Sale No. 7394.)

Six cases of ODONTOGLOSSUM CRISPUM LEHMANNI and CATTLEYA TRIANÆ (Popayan var.), collected by Mr. F. C. Lehmann, and just received direct from Colombia.

MR. J. C. STEVENS will include the above in his SALE on WEDNESDAY NEXT, April 13.

On view morning of Sale, and Catalogues had.

Wednesday Next.—(Sale No. 7394.)

25 Cases of ORCHIDS, just received direct from Burmah and Brazil.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, April 13, at half-past 12 o'Clock precisely, 20 Cases of BURMESE ORCHIDS, just received direct, in fine order, comprising a wonderful importation of a Cymbidium (in all probability C. Lowianum), in magnificent masses; a specially fine lot of Dendrobium Thyrsiflorum, including several grand specimens, one with over 50 immense Bulbs; D. fimbriatum, D. Wardianum, D. Chrysotoxum, &c.; also Six Cases from Brazil (received direct), including fine pieces of Oncidium Sarcodes, O. Forbesii, O. crispum, O. Rogersii, Lælia Perrinii, Cattleya bicolor, C. labiata, Epidendrums, Zygopetalums, &c.

On view morning of Sale, and Catalogues had.

Wednesday Next.—(Sale No. 7394.)

ORCHIDS IN FLOWER.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, April 13, a fine lot of ORCHIDS in FLOWER, comprising some splendid forms of Odontoglossum Alexandræ, a few O. hybrids, O. Pescatorei, Dendrobes, Phalænopsis in variety, Cypripedium calurum, with flowers 5 inches across, &c.

On view morning of Sale, and Catalogues had.

Wednesday and Thursday Next.

15,000 grand Bulbs of LILIUM AURATUM received from Japan in the finest possible condition; 10,000 PEARL TUBEROSES from America, &c.

MR. J. C. STEVENS will include the above in his SALES by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY and THURSDAY NEXT, April 13 and 14.

On view mornings of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7395.)

NEW and BEAUTIFUL UTRICULARIA.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., by order of Mr. F. Sander, on THURSDAY NEXT, April 14, a fine importation of a new Blue-flowered UTRICULARIA. The flowers are produced on upright spikes; these are very long and branching, and the colour of the blue is very deep and fine. There is no doubt this is a grand thing. It carries over twenty flowers on spike, and has never been offered before.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7395.)

WHITE LÆLIA ANCEPS, imported direct.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, April 14, at half-past 12 o'Clock precisely, a splendid importation of White LÆLIA ANCEPS, collected in the locality from whence the grand and new white varieties, L. anceps Kienastiana and L. anceps munda come. See *Gardeners' Chronicle*, March 6, 1886. These varieties have flowered. L. anceps Kienastiana has a pure white lip with crimson blotch, and pure white sepals and petals, the latter having a rosy hue and very dark tips, and are also very broad and fine. L. anceps munda is similar to Stella, but the flower is rounder, and the yellow in lip runs almost to the edge. At the same time will be offered a fine lot of ONCIDIUM ORNITHORRHYNCHUM and O. INCURVUM, CŒLIA MACROSTACHYA, EPIDENDRUM RANIFERUM, BRASSIA species, SOBRALIA MACRANTHA, &c., from a new district. Also many IMPORTED ORCHIDS from Mr. F. Sander, including Vanda teres, Lælia purpurata, &c.

On view morning of Sale, and Catalogues had.

Special Sale of Orchids in Flower.

MR. J. C. STEVENS begs to announce that his next SPECIAL SALE of ORCHIDS in Flower and Bud, will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, April 20, and he will be glad if gentlemen desirous of entering plants for this Sale will send particulars not later than Thursday next.

Highfield Nurseries, Matlock, Derbyshire.

CLEARANCE SALE of NURSERY STOCK.

MESSRS. ELSE AND SON have received instructions from Mr. J. J. Marriott to offer for SALE, without reserve, in consequence of the Land being let, on TUESDAY, April 12, the remaining portion of the Stock at the above-named Nurseries, comprising large quantities of LAUREL CAUCASICUM, LATIFOLIA, and ROTUNDIFOLIA; CUPRESSUS, RETINOSPORAS, Golden YEWS, Irish IVIES, Oval-leaved PRIVETS, ROSES, MANETTI STOCKS; choice named RHODODENDRONS, &c. Also the following Seedling and Transplanted RHODODENDRONS, by sample—about 400,000 Hybrid Seedlings, 3-yr.; 50,000 ditto, 3-yr. bedded; 50,000 ditto, 2-yr. bedded; 40,000 ditto, 4 to 6 inches, transplanted; and 20,000 Seedlings from splendid named sorts, 2-yr. bedded. Sale to commence at 12 o'Clock.

The Nursery is situated near Rockside Establishment, about half-a-mile from Matlock Bridge Station (Midland Railway).

Catalogues may be obtained on application to the Auctioneers, Matlock Bridge, seven days prior to the Sale.

Auction and Estate Agency Offices, Matlock Bridge.

ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

wish to state that the Second Edition of the CATALOGUE of the "Harvey" Collection of ORCHIDS is now ready, and will be sent Post-free on application.

THE COMPANY also wish to state that they have just received a Grand Consignment of MEXICAN ORCHIDS, which includes many valuable varieties, and they expect to receive this week the largest and finest consignment of EAST INDIAN ORCHIDS which they have had for some years past.

Full particulars of these fine importations will be sent Post-free on application to THE COMPANY, The Vineyard and Nurseries, Garston, near Liverpool.

COMPAGNIE CONTINENTALE D'HORTICULTURE,

Ancient firm J. LINDEN (Société Anonyme),

GHENT, BELGIUM,

(in Liquidation).

PUBLIC SALE OF PLANTS,

MAY 16, 1887, *and following days.*

UNUSUAL CHOICE OF

SPECIMENS OF RARE PLANTS

of incomparable cultivation, also Plants at present on Sale, and including:—

GRAND COLLECTIONS OF PALMS,

in strong examples, Prize Plants at all the Great Exhibitions of the Continent and Unique in Europe.

100,000 AZALEAS of all sorts.

NEW AND RARE ORCHIDS, ARAUCARIAS.

Small PALMS, SPECIMEN FOLIAGE PLANTS, Variegated and Decorative; and CAMELLIAS, DRACÆNAS, NEPENTHES, AROIDS, as Specimen or Young Plants.

VERY LARGE TREE FERNS,

Also of medium sizes, as well as many other

PLANTS FOR THE WINTER GARDEN,

and also for the Orangery and Dwelling Rooms, and OFFICINAL and MEDICINAL PLANTS (recommended for Botanic Gardens).

PLANTS FOR STANDING OUT ON THE LAWN

during Summer.

THE WHOLE STOCKS OF NEW PLANTS,

BEYOND COMPARISON.

Nearly all of which have received Awards at the Great Exhibitions during the last two years, &c.; which will be Sold

MAY 16 *NEXT and following days,*

at 9 A.M. to noon, and 2 P.M. to 6 P.M. each day,

BY PUBLIC AUCTION,

At the Premises of the Establishment,

52, Rue de Chaume, and 56, Coupure, Ghent, Belgium.

Amateurs, Horticulturists, and Directors of Botanic Gardens will find in this Sale a unique chance of completing or forming Collections of GOOD or DECORATIVE PLANTS by Purchasing those which have made the universal reputation of this firm.

☞ *A Detailed CATALOGUE of each day's Sale will be ready on May* 1 *next.*

To the Seed Trade.

WANTED, by the advertiser, an Established SEED and AGRICULTURAL BUSINESS—one having a thoroughly good retail connection; or would correspond with any one in the above Trade, with a view to Partnership.

Apply, giving full particulars, to R. M., Messrs. Osman & Co., 14, Windsor Street, Bishopsgate, London, E.C.

London, 30 Miles from.

OLD ESTABLISHED NURSERY BUSINESS, with an extensive connection. Satisfactory reasons for disposal.

MESSRS. PROTHEROE AND MORRIS are instructed to find a Purchaser for one of the oldest established Nursery Businesses within a similar distance from London. The incoming would be subject to valuation, or a Partnership would be entertained.

Full particulars of Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, London, E.C.

To Fruit and Flower Growers, Market GARDENERS and OTHERS.

Surrey, 18 miles from London midway betwixt two stations, and in the midst of a district where there is a local demand.

TO BE LET on LEASE or SOLD IMMEDIATELY, owing to owner's ill-health, an excellent FRUIT GARDEN, well stocked, about 12 acres in extent (more or less Land could be had as desired), with numerous Glass Erections, including Vinery, Strawberry, and Tomato Houses, and several Pits. All heated.

Substantial brick-built 7-roomed Cottage, also Stabling, Cart-shed, Cow-shed and other Buildings, Fruit, Seed Potting and Washing Sheds. Terms of

WATERER AND SONS, Land Agents, Chertsey.

Landscape Gardening.

H. F. MALLER (of the firm of B. Maller & Sons), late Pupil of the Crystal Palace School of Landscape Gardening, is prepared to FURNISH PLANS, or undertake any kind of the above work.—61, High Street, Lewisham.

To Farmers, Market Gardeners, and Others.

THE METROPOLITAN BOARD of WORKS have at their Main Drainage Pumping Station, situated upon the southern side of the Thames, at Crossness, near Abbey Wood, Kent, a very large quantity of SOLID MATTER pressed from Sewage, which they are prepared to DELIVER FREE of COST to any parties sending either barges or carts for the same.

The Board will also, if desired, deliver the SEWAGE-CAKE, FREE of COST, to the Abbey Wood Station, on the North Kent Railway, but the Board will not pay or be responsible for the payment of any charges in respect of the carriage upon that or any other line of railway.

Parties desirous of obtaining a supply of the SEWAGE-CAKE must apply to the Superintendent of the Pumping Station at Crossness, who will arrange for either loading the cake into the barges or carts, or delivering it at the Abbey Wood Station, as may be required.

J. E. WAKEFIELD, Clerk of the Board.

Spring Gardens.—March 24, 1887.

JOSIAH H. BATH offers the following varieties of SEED POTATOS:—

Rivers' Royal Ashleaf	Dalmahoy
Myatt's Prolific Do.	Early Don
Old Ashleaf	,, Bog
Early Shaw	York Regent
,, Goodrich	Scotch Do.
,, Rose	Dunbar Do.
Imperator	Fluke
Beauty of Hebron	Paterson's Victoria
White Elephant	Snowflake
Schoolmaster	Scotch Champion,

And other leading varieties. Prices upon application.
1 and 3, York Street, Borough Market, S.E.

CARNATIONS and PICOTEES. — Finest Exhibition sorts, from 6*s.* per dozen; over 400 varieties. PANSIES, all the leading sorts in Show and Fancy, from 4*s.* per dozen. Double PYRETHRUMS, 6*s.* per dozen. Descriptive Priced CATALOGUES of Carnations, Picotees, Hollyhocks, Dahlias, and Pansies post-free.
M. CAMPBELL, Florist, Blantyre, Lanarkshire.

CHRYSANTHEMUM "GOLDEN GEM."
New Golden Yellow—latest in cultivation—superior to all other late Yellows yet known. Dwarf, free, erect habit, requires no sticks. Illustrated CIRCULAR. Opinions of Horticultural Press upon application. Awarded two First-class Certificates, London, January 11, 12, and 13, 1887. Plants, 2*s.* each, 21*s.* per dozen; Rooted Cuttings, 1*s.* 6*d.* each, 15*s.* per dozen, 8*s.* per half-dozen; Cuttings, 1*s.* each, 10*s.* 6*d.* per dozen, 6*s.* per half-dozen. Distributed in March.
ROBERT OWEN, Floral Nursery, Maidenhead.

SEED POTATOS.—SEED POTATOS.—A few tons of choice sorts offered at lowest cash prices:—

Myatt's Prolific Ashleaf	White Elephant
American Early Rose	Early Don
Beauty of Hebron	Sutton's Early Regent

Other varieties in stock.
JOHN BATH, 32 and 34, Wellington Street, Covent Garden, W.C.

BEGONIAS A SPECIALTY.—LAING'S BEGONIA TUBERS. Awarded Two Gold Medals. Free by post. Unequalled quality. Named Singles, from 12*s.* to 42*s.* per dozen; unnamed seedlings, selected to colour, for pots, from 12*s.* per dozen; bedding, selected to colour, 9*s.* per dozen; bedding, choicest mixed colours, 6*s.* per dozen; choicest named Doubles, from 42*s.* per dozen; unnamed, very choice selected, 24*s.* and 30*s.* per dozen; choicest mixed, 18*s.* per dozen. CATALOGUES gratis.
JOHN LAING AND CO., Nurseries, Forest Hill, S.E.

Mangel Wurzel and Turnip Seeds.
H. AND F. SHARPE are now prepared to make special offers of home-grown MANGEL WURZEL and TURNIP SEEDS, raised in 1886 from specially selected Bulbs. The quality is excellent and the prices are very low.
Seed Growing Establishment, Wisbech.

BEGONIAS, superb and cheap.—"The strain of Begonias was equal to any we have seen elsewhere . . ." *Vide Journal of Horticulture*, August 26, 1886. Varieties for pot culture, from 6*s.* per dozen; for bedding, from 4*s.* per dozen. Descriptive LIST of sorts free. Extra choice SEED, single and double, 1*s.* and 2*s.* 6*d.* per packet. Special offer to the Trade. SCOTCH FIR, extra fine, 2 to 3 and 3 to 4 feet.
B. R. DAVIS, Yeovil Nurseries, Somerset.

2,000,000 CABBAGE PLANTS, best Market and Cattle varieties. Also CAULIFLOWERS, LETTUCE, Tripoli ONIONS, BRUSSELS SPROUTS, Savoy and Red Pickling CABBAGE. Write for LIST, and state what quantity required; will give low quotations.
EDWARD LEIGH, Ivy House Farm, Cranleigh, Surrey.

SIMPLE INSTRUCTIONS, by which an abundance can be insured of delicious MUSHROOMS. See Seed LIST, free.
RICHARD SMITH AND CO., Seed Merchants and Nurserymen, Worcester.

PANSIES. — Scotch Prize Pansies, 50 best Exhibition varieties, 12*s.* 6*d.*, 26 for 6*s.* 6*d.*, 14 for 4*s.* 6*d.*, post-free, my selection of strong healthy plants.
Competitors please note—Cuthbertson's New CATALOGUE of Competition Flowers and Vegetables, with 30 Illustrations, free to all. Send for a copy.
M. CUTHBERTSON, Seed Grower, Seed Merchant, and Florist, Rothesay.

LAING'S BEGONIA SEED.—Awarded Two Gold Medals. In sealed packets. Unequalled quality. Saved from prize plants. Choicest mixed, Single varieties, 1*s.*, 2*s.* 6*d.*, and 5*s.* per packet. Collections, 12 named single varieties, separate, 5*s.* 6*d.*; 6 ditto, 3*s.* Choicest mixed double varieties, 2*s.* 6*d.*, 3*s.* 6*d.*, and 5*s.* per packet. Post-free. Order direct from us to procure the genuine seed.
JOHN LAING AND CO., Seedsmen, Forest Hill, S.E.

AUGUSTE VAN GEERT, Continental Nursery, Ghent, Belgium, begs to inform Friends and Customers that his Special Spring Trade LIST is just out, and may be had on application. A splendid stock of PALMS, all sizes, now ready.

To the Trade
VEGETABLE and AGRICULTURAL SEEDS.
H. AND F. SHARPE will be pleased to give special quotations for all their fine selected stocks of the above-named Seeds of 1886 growth. Their prices will be found very advantageous to purchasers.
Seed-growing Establishment, Wisbech.

CREEPERS FOR WALLS.—By planting what is suitable, an ugly object may easily be made beautiful. Descriptive LIST and advice free.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

BARR'S
PROVEN
FLOWER SEEDS,
SAVED FROM THE
FINEST STRAINS.

BARR'S
DESCRIPTIVE SPRING CATALOGUE
OF
CHOICE SEEDS
FOR
Greenhouse, Flower Garden, Wild Garden, Grass Garden, Subtropical Garden, Rock Garden, and Kitchen Garden.
The most complete List issued. Fully described.

BARR'S Large-flowered **Ten-week STOCK.**
Splendid varieties, in mixture.
Per Packet, 1*s.* *and* 2*s.* 6*d.*

BARR'S Covent Garden **Intermediate STOCK**
Splendid varieties, in mixture.
Per Packet, 1*s.* *and* 2*s.* 6*d.*

BARR'S BROMPTON or WINTER STOCK
Splendid varieties, in mixture.
Per Packet, 1*s.* *and* 2*s.* 6*d.*

BARR'S PÆONY PERFECTION ASTER
Splendid varieties, in mixture.
Per Packet, 1*s.* *and* 2*s.* 6*d.*

BARR'S Large-flowered **VICTORIA ASTER**
Splendid varieties, in mixture.
Per Packet, 1*s.* *and* 2*s.* 6*d.*

BARR'S Double German **WALLFLOWER.**
Splendid Rocket varieties, in mixture.
Per Packet, 1*s.* *and* 2*s.* 6*d.*
Splendid branching varieties, mixed.
Per Packet, 1*s.* *and* 2*s.* 6*d.*

BARR'S Beautiful Double ZINNIAS.
Magnificent colours, in mixture.
Per Packet, 6*d.* *and* 1*s.*

BARR'S Choice Border CARNATIONS.
Saved from the finest Selfs, Flakes, Biazarres, and Fancy varieties; in mixture.
Per Packet, 3*s.* 6*d.*

BARR'S Choice Yellow CARNATIONS.
Saved from the finest Selfs, Flakes, Biazarres, and Fancy varieties; in mixture.
Per Packet, 3*s.* 6*d.*

BARR'S CHOICE PICOTEES.
Saved from the finest White and Yellow Grounds.
Pev Packet, 3*s.* 6*d.*

BARR'S English "Criterion" BALSAMS.
Remarkable for their large and handsome flowers and brilliant hues—beautiful mixture.
Per Packet, 2*s.* 6*d.*

BARR'S BEAUTIFUL HOLLYHOCKS.
Saved from the finest strain—beautiful mixture.
Per Packet, 1*s.*

BARR'S Large-flowered PETUNIA.
Beautiful varieties, in mixture.
Per Packet, 1*s.* *and* 2*s.* 6*d.*

BARR'S PHLOX DRUMMONDII.
Handsome varieties, mixed.
Per Packet, 1*s.* *and* 2*s.* 6*d.*

Barr's Descriptive Catalogue of over 2000 varieties of Flower Seeds free on application.

BARR & SON,
12 & 13, KING STREET, COVENT GARDEN.

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The above having been frequently transplanted are in perfect order for removal. Prices of larger plants on application, as also descriptive LIST of other stock suitable for Evergreen Hedges, Blinds, &c., such as HOLLIES, CYPRESSES, JUNIPERS, THUIA LOBBII, LAURELS, PRIVET, THUIOPSIS, &c.
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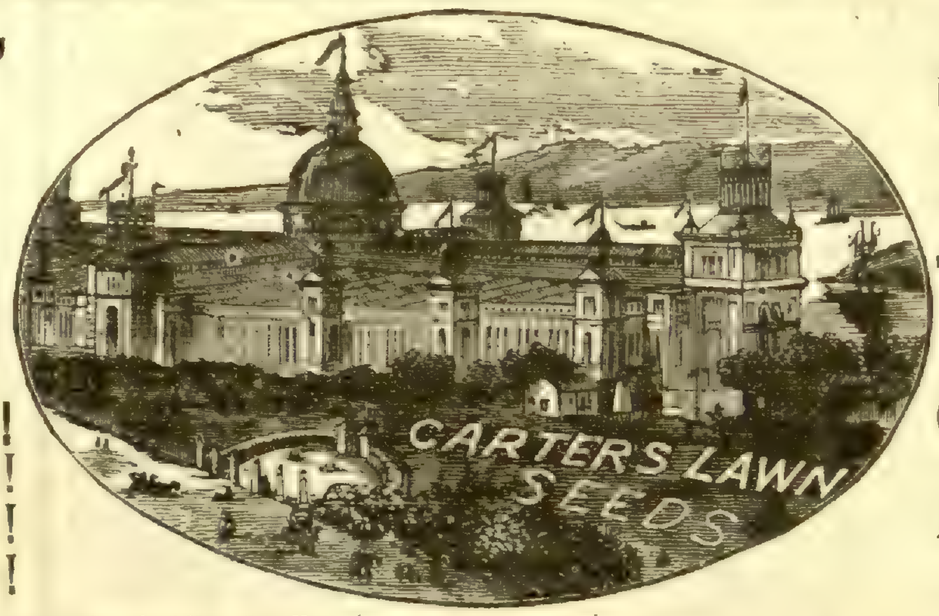

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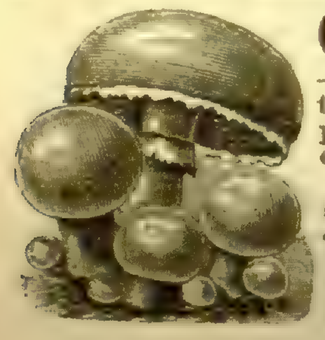

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OF
SIR THEOPHILUS SHEPSTONE'S GARDEN IN NATAL.

THE
Gardeners' Chronicle.

SATURDAY, APRIL 9, 1887.

HINDLIP HALL.

AN earlier house, which stood on the site of the residence of the recently deceased Lord Hindlip, better known as Mr. Allsopp, late Member for Worcestershire, and whose family came from Allsopp-in-the-Dale, near Ashbourne, Derbyshire, was built by a Catholic servant of Queen Elizabeth. His little niche in history would be empty but for the suspicious circumstances attaching to his small career. His name has come down to posterity in consequence of his connection with papist plots against the life of the Queen, his mistress, and the plots in which he was engaged, and the necessity for concealing the conspirators and Jesuits whom he entertained, explains the extraordinary construction of his house. Its mysterious passages, hollow walls, false chimneys, and winding stairs, exceeded those of any similar place of hide-and-seek of the period. There were eleven secret chambers in the old mansion, all of which, as Nash asserts in his *History and Antiquities of Worcestershire*, were crammed with books such as Protestants abhor—"massing stuff" and "papist trumpery." Twice in the time of James I. the stealthy occupants of these chambers were "wanted" by the Government and a search took place.

In times of danger the Jesuits lying *perdus* were fed, without the opening of doors, by means of quills and reeds through which their food was conveyed to them, much the same as milk in a dairy farm runs through a pipe into a cistern convenient as regards the piggery. Two pairs of Jesuits were being nourished in that way at Hindlip Court when the soldiers rode up, and Mr. Abingdon, their false-tongued harbourer, the owner of the property, was offering to die on his threshold if any persons were concealed on his premises when the Jesuits were marched out, the search party having unearthed them.

Early in the present century Guy Fawkes'

house, as it was sometimes called, was occupied as a seminary for young ladies. A new house was afterwards built, the property having been purchased by its late owner of Lord Southwold. It is a good house, well placed, amid avenues of Oaks, the prevailing tree, on ground somewhat elevated above the fertile country around, so that the outlook, from amidst the trees, which abound but do not encumber it, commands extensive landscapes. Droitwich and Birmingham are distant points lying a little beyond the horizon. The north front looks towards Witley Court and towards the village of Hindlip, half a mile distant. A lawn of several acres divides this front from the park, or rather there are two lawns, one level with the house and a lower one reached by stone steps and divided from the park by an iron fence. There are plenty of shrubs, which are grouped here and there, and the house is flanked on either wing by Limes and Sycamores, which grow close up to it. Some very lofty Oaks, with long, big boles, 15 feet in girth, and some English Elms as tall and as large, stand both within and without the park fence, and rabbits and hares, sheep and cattle all seem quite at home here, the game coming nearer the front door than the other live stock, not having been fenced off. The scene is as delightful as it is possible to conceive, and in further praise it may be spoken of as being full of the sentiment of English country life, sport and good cheer.

The south front overlooks a lawn and terrace with but few flower-beds, the prospect embracing so much that is pleasing, that flowers to distract the attention would be out of place. Tall Wellingtonias and evergreen Oaks are the principal evergreens, and there are some very handsome scarlet Thorns. The old park—so called to distinguish it from the new one on the other side of the house—lies immediately beyond the terrace on lower ground; and the distant points in a well gardened country of fruit and Hops are the Malvern Hills and the city of Worcester, obscured by timber, 4 or 5 miles off, on the south-west. Pheasants in great number frequent the thickets of the old park and other similar places of concealment. They are always welcome in a landscape of this sort, and their crowing in the shrubberies and swift running across the lawn increases the pleasure one feels in visiting a perfect example of an English gentleman's house and home.

The Gardens.

The kitchen garden and the ranges of greenhouses and stoves are admirably managed by Mr. Barker, with the assistance of ten gardeners, one of whom, an intelligent young man, found a substitute for his indoor duties at the bothy, and escaped his turn as cook that he might accompany me through the houses and round the grounds, his master having been enfeebled for a time by serious illness, to which, unfortunately, he has succumbed since this note was written.

I have rarely seen a kitchen garden more variously productive and interesting. We entered it through a small flower garden sloping towards Worcester and Malvern, as the whole of the garden does, and shut in on its two other sides by greenhouses and trees. A thick Yew fence divides it from the kitchen garden. The beds in this enchanted corner are most beautiful, having been planted in a very brilliant style of geometric bedding, with free use of a great variety of foliage plants and flowers.

The kitchen garden, fenced with high walls and sheltered besides by outside beltings, is planted with pyramid and bush fruit trees, and the paths are edged with Pears and Apples trained as cordons, which bear abundantly at a foot from the ground, that being the height at which these ropes of fruit are stretched. Outside the garden its walls are well covered with various fruit trees, including Peaches, Nectarines, and choice Pears on the best front facing the south-west, and Pears as cordons on the west wall. This is the advantage of a second fence and of a protecting belting, which in this case includes ornamental specimens of shrubs and trees, with a path through them forming a delightful walk which leads to a rosery near the house, and then to the southern lawn. It will be seen from this description that the kitchen garden is near the house, which is just where such a garden should be.

The church, too, is close to the Hall, and the village is nearly half a mile off, if you take the short cut through the pastures, passing one of the handsomest of Pear trees, tall and spreading, and loaded with highly coloured fruit at the time of my visit. I stopped to gaze at this superb work of Nature—a pyramid—not such as Cheops built, of bricks and mortar, with hard outlines, but a living tree, such as men have worshipped for its graceful form and noble stature. Two little boys stood beneath this fruit-bearing piece of perfection and stared at me for a moment, and then began to walk off stealthily, and then to run, looking back over their shoulders, and running with might and main till they had crossed the pasture, when they bolted through a cottage garden on the opposite side. I should think such small boys so full of forbidden Pears as they both were probably never ran so fast before; but their fright was needless, for they might have eaten till they burst, as sheep and cattle do after too much Clover, I should not have noticed them in the presence of that beautiful Pear tree.

I cannot refrain from mentioning the ornamental foliage plants in one of the stoves—the Caladiums, Alocasias, Crotons, and Dracænas, which were charmingly mingled with flowering plants, Maidenhair Ferns, Palms, Athyriums, exquisite specimens of Asparagus with very finely cut leaves, besides a superb plant of Gloriosa superba, which caught the eye as something not seen every day, like a peacock's tail in May. Several houses here are devoted to the growth of Figs. There are three Peach-houses. Pines are not omitted, as they now are in some great gardens, and in one of the pineries there were two plants of Banana ripening their fruit. The Grapes are a good collection, in perfect health, and the crops in the several houses were excellent. I can hardly mention all the houses, still less their contents. We passed through a Plum-house and more than one containing Roses for forcing, Pelargoniums, and that triumph of modern art, the Fuchsia.

There are other houses in which both vegetables and flowers are raised, and I noticed among the reserves, waiting for their turn, a large collection of Chrysanthemums in pots, which will by-and-by be brought into the greenhouses, making a fine display in the winter. *H. E.*

Plants New or Noteworthy.

NEPHROLEPIS RUFESCENS.*

Nephrolepis rufescens is one of the very numerous varieties of N. exaltata, Presl (Polypodium exaltatum, Linn.), one of the most widely diffused of all the tropical Ferns, being equally plentiful in the Old and New World. N. rufescens was originally described by Schrader in 1824, from specimens gathered in Brazil by Prince Maximilian of Neuwied. It has lately been figured and fully described by the Chevalier Wawra in the superb work above cited which contains an account of the plants gathered during the travels of the ill-fated Emperor Maximilian of Mexico.

The form figured in our illustrations (figs. 90, 91, pp. 477, 481) is totally different in habit and appearance from the typical state of the plant, which has a simply pinnate frond with entire lanceolate pinnæ, with a distinct space between them. The present plant was introduced into cultivation by Messrs. Veitch, in whose collection our sketch was made, and received a Botanical Certificate from the Royal Horticultural Society in June, 1886, as was recorded in our columns at the time. This variety bears very much the same relation to the type that Polypodium cambricum bears to P. vulgare The pinnæ overlap one another, and are cut down, especially on the lower side, into deep lanceolate segments, which, in the specimen figured, are merely serrated, but in a frond which lies before us are again pinnatifid. It was to this latter form that the name tripinnatifida, for which I am responsible, was intended to apply. N. rufescens differs mainly from the well-known N. acuta or biserrata in having the frond clothed, especially beneath, with short reddish hairs. It is to these that the name rufescens refers. Of the specimens of well-known collectors, Martius, 318; Gardner, 187; and Pohl, 2638, represent typical rufescens. *J. G. Baker.*

[To this note we may add that this Fern will commend itself to gardeners for its graceful habit, easy cultivation and rapid powers of propagation, so that it will form one of the best Ferns for "decorating" purposes. It is impossible on a flat surface to give an adequate idea of the pinnæ, which appear to be closely packed, but in reality they emerge from the central stalk at an acute angle, and thus allow of the passage of light between the pinnæ exactly in the same way as the light passes between the laths of a half-open Venetian blind. Ed.]

Nephthytis picturata, *N. E. Br., n. sp.*

A few years since I described in these pages, under the name of Nephthytis libirica, an Aroid which had been introduced from Liberia by Mr. Bull, and now the same gentleman has introduced a plant from the Congo which, although it has not yet flowered, has every appearance of belonging to the same genus, so that I have no hesitation in considering it as such. This novelty is an ornamental foliage plant, of much more striking appearance than N. libirica, the leaves being variegated with white in a somewhat remarkable manner, the markings forming a pattern resembling the tips of Fern fronds laid between the nerves, with their points all directed towards the base of the midrib.

The plant is stemless, and produces several leaves at a time. The petioles are about 10—12 inches long, terete, erect, green. The blade of the leaf is spreading, but not at all deflexed, 6—12 inches long, 5—9 inches broad, broadly ovate-hastate in outline, deeply cordate at the base, with a rhomboid sinus, cuspidate-acuminate at the apex, with more or less sinuate margins, of a rather dark green, variegated between the nerves with whitish, in the manner above specified. Primary lateral nerves three to five on each side the midrib ascending; the postical branches of the midrib are denuded at the sinus from ½—¾ inch, from their lower edges are given off about three primary veins, and from their upper edges two to four finer veins.

Mr. Bull has two forms of this plant, one with much smaller and narrower leaves than the other, which I propose to call var. angustata; it differs from that above described (which I shall consider the type) in its smaller-sized leaves, with the front lobe narrower (about 2½—3½ inches broad), and the basal lobes proportionately longer and narrower, and

* *Nephrolepis rufescens*, Splitgerber *Tijdschrift*, vii., 415; Wawra, in *Bot. Ergeb. Reise Maxim.*, p. 200, t. 101. Aspidium rufescens, Schrad., in *Gotting. Anz.*, 1824, 269. Lepidoneuron rufescens, Fée, *Gen. Fil.*, 301. Nephrolepis exaltata var. hirsutula, Baker in *Mart. Fl. Bras.*, vol. i., pt. 2, p. 493, ex parte.

directed more outwards; in other respects it is very similar.

Neither form has flowered up to the present time. *N. E. Brown, Herbarium, Kew.*

Dendrobium chlorostele ×, *nov. hyb., Angl.; educ. ab eq. Trevor Lawrence.*

Sir Trevor Lawrence, Bart., M.P., P.R.H.S., raised this from Dendrobium Linawianum (moniliforme, Lindl., *nec* Sw.), and D. Wardianum. I learn from Mr. Bickerstaff, the fortunate grower of Sir Trevor's treasures, that the stem is exactly that of Dendrobium Linawianum. It is surprising that the effect of this combination should have been the stem alluded to, together with flowers, which at first sight remind one of a broadly petalled Dendrobium nobile like the one represented in Dr. Lindley's *Sertum*, t. 3. The substance of the flower is very bold and stiff; sepals ligulate acute, white, with purple edges; petals broad, blunt, with outer halves purple, interior white; lip of the shape that is so conspicuous in Dendrobium Wardianum, with a strong light square cushion at the base, and an amaranth-coloured radiating area around, bordered outside with light sulphur colour, the apicilar zone being light purple. Column fine green, with purple stripes under the fovea, and with a bright mauve-purple anther. The central line of the lateral sepals on the outside of the blunt-angled mentum green. It is a good thing but I do not feel so partial to it as to Dendrobium chrysodiscus × ×. *H. G. Rchb. f.*

Odontoglossum crispum var. hyperxanthum, *var. cur.*

A most singular variety of the Alexandræ set, only white and yellow. The petals are rhomboid, serrate, white. The sepals have a few light yellow spots. The lip and the column are yellow, but without a single purple streak. The interstices between the teeth of the basilar callus are coloured orange, and thus afford some variation in tint. The inflorescence was kindly sent me by Sir Trevor Lawrence, Bart. *H. G. Rchb. f.*

Pleurothallis insignis, *Rolfe, n. sp.*

Most of the species of this genus are insignificant from the cultivator's point of view. There are, however, a few exceptions, one of the most marked being the subject of the present note. The flowers are by far the largest known in the genus, measuring 2¾ inches in length, and having a very striking appearance. The plant has the general habit of a Masdevallia, growing in a compact tuft, 6 inches high, and forms a very interesting addition to the group known as cool Orchids. The plant exists at Kew, and until a short time ago might there be seen in flower. It belongs to Lindley's group Acuminatæ filiferæ, characterised by having acuminate sepals and long bristle-like petals, and comprising about five species, namely, P. glossopogon, biserrula, Sirene, Scapha, and the present one. It is closely allied to P. glossopogon, under which name it was described in a recent issue (p. 283), though a glance at an authentic specimen of that species in the Lindley Herbarium at once shows its distinctness from our present plant. On measurement the flowers prove to be an inch shorter, the sepals proportionately narrower, the lip a fourth shorter, much narrower, and more acute. The colour, too, is different, as the description says, sepals purple, petals white, while in P. insignis the sepals and petals are pale whitish pellucid green, with a few dull purple stripes. The following is the technical description:

P. insignis.—Plant cæspitose, about 6 inches high. Stems, 2½ inches, terete. Leaves sessile, oblong, or linear oblong, leathery, subacute below, subobtuse above, 3¾ by 1⅛ inches. Peduncle arising from a membranous, lanceolate, acute spathe, three-quarters inch long at base of leaf. Peduncle terete, 2½ inches long, two-flowered. Bracts, 5 lines long, tubular for about 4 lines; free apex roundish and obtuse. Pedicels, 1½ inch; flowers 2¾ inches long, pale whitish pellucid green, upper sepal with three dull purple stripes; lower connate pair with two stripes of the same colour near margin; and a few other somewhat indistinct markings near apex. Central lobe of lip dark blackish-purple. Upper sepal lanceolate-linear to near middle, long attenuate above, 2½ lines broad at base, lateral sepals connate to apex in one body, which is similar to upper one, though narrower, 3½ lines wide at base. Petals 2½ lines long, with broad base 3½ lines long by 2 lines broad, then very abruptly narrowed and bristle-like above. Lip articulated to short foot of column, three-lobed; central lobe 8 lines long, ligulate, subobtuse, and very villose at apex, shortly pubescent to middle, and behind this nearly glabrous, and with two acute whitish keels near base; side lobes falcate, linear, obtuse, half equalling central lobe. Column short; pollinia two, as in genus. (P. glossopogon, hort. Kew, *Gardeners Chronicle*, 1887, Feb. 26, p. 283, *not of Rchb. f.*). *R. A. Rolfe.*

Fig. 90.—Nephrolepis rufescens var: showing habit. (see p. 476.)

THE GARDENS AT THE AMERICAN EXHIBITION.

Recently I paid a visit to the works in progress at Earl's Court, upon which over a thousand men are employed, when a glance at the main exhibition building now in progress, and the surrounding grounds, which cover 23 acres, sufficed to show what a great undertaking our "American cousins" are about to attempt here.

The gardens and promenades surrounding the buildings occupy about 9 acres, and are divided into two sections—the western and the central. This large extent of ground is beset with great difficulties, which must be overcome before what was market gardens and waste ground can be transformed into a pleasing promenade and gardens for the visitors to the Exhibition.

One of the most prominent features at the present moment, and the only one that shows an approach toward completion, is some rockwork artistically arranged, and which harmonises with the gentle undulations of the surface in that part near the West Kensington station. This spot will probably be one of the most attractive in the whole garden. Here will be arranged some of the choicest hardy flowers, especially Lilies, Orchises, &c., of North America; and the beds are so designed as to suit the various requirements of the plants. A portion of this section has already been taken in hand, and planted by Mr. T. Ware. There are "colonies" of such interesting plants as Cypripedium spectabile, Sarracenias, Dodecatheons, Trilliums, and many other well-known beautiful perennial plants. The crevices of the rocks are planted with North American Ferns and Saxifrages.

The garden throughout will be studded with groups representing the American flora, giving it a distinctive feature; indeed, no other plants but those inhabiting North America and Mexico will find a place. It is the aim of Mr. Goldring, the landscape gardener, to so "group" the plants that when in flower each "group" shall have a characteristic effect. For instance, in one part he will have all the varieties of Evening Primrose (Œnotheras) in one large group, the prevailing colour of which is yellow, interspersed with white; further on all the Phloxes, and these will be very ornamental, as it is intended to include the showy varieties which have originated from the North American species. Close to these will stand groups of the best species of Michaelmas Daisies (Asters), and these will carry on the floral display until the close of the Exhibition. A glow of colour will be produced by thousands of Tigridia, scarlet, yellow, and white, and these will be associated with other flowers of kindred tints.

The Composites will, of course, predominate, as they comprise such a large portion of the flora of the States; the garden will therefore be most attractive during the latter part of the summer.

Other important classes of plants are the her-

baceous Spiræas, showy Gaillardias, and Helianthuses; scarlet Lobelias of California, annual and perennial Lupines, alpine Phloxes, and Iceland Poppies; while under such trees as exist, chiefly Pears and Elders, are shady spots for the larger-growing Ferns.

The temptation to introduce Dahlias appears to have been too great to resist. Mr. Goldring wishes likewise to introduce such singular-looking Cactaceous plants and Agaves of Mexico as are likely to prove interesting to the visitor, and add considerably to the picturesqueness of the whole.

The "central garden" will be enlivened by Californian annuals, which Messrs. James Carter & Co., High Holborn, have undertaken to furnish, and the same firm will also sow the lawns. As yet little has been done in the way of tree or shrub planting, but the ground is being prepared in all haste for the purpose. A large area is being set apart for a Rhododendron display on ground furnished with undulating slopes, and which will be wholly covered at the flowering period with canvas. Plots are to be set apart for Tobacco, Maize, Hemp, and other plants connected with the chief industries of the United States. The main building and its surrounding garden are quite apart from the eastern section—an area of 6 acres—connected with the main building by a wide corridor of about 100 yards in length.

This part will be devoted to "Buffalo Bill's" exhibition of life on the prairies. It will be laid out with an arena and wide track, surrounded by an enormous stand, capable of accommodating 20,000 persons. The various Indians, some 200 in number, are to be encamped in their characteristic fashion on the slope behind this stand.

In this section Mr. Goldring's work is of quite a different character to that in the other portion of the grounds, and much skill has been shown in meeting the requirements of this remarkable troupe. The ground presented unfortunately quite a flat surface originally, and must be undulated by large excavations of the earth so that the surface shall be diversified by high "mounds" some of them of 30 feet in height. A rocky cliff or gorge is now being formed, which will be the entrance to this portion with the view of making it the foreground for a scenic representation which is being painted to form a screen. *B.*

THE FLOWER GARDEN.

EVERGREEN SHRUBS.

April and August are considered the best months in the year for planting evergreen shrubs. If planted during the winter the chances are many that the delicate fibres are seriously injured, but with the return of solar heat and mild genial showers thorough success may be looked for. The commoner species referred to are Sweet Bays, Portugal and common Laurel, Aucuba, Rhododendrons, Hollies, Privets, Laurustinus, Yew, &c.

Lawns.

These should be well swept and rolled prior to commencing to mow. Where new lawns are in course of formation, the sooner they are turfed over or sown the better. Sowing is the most expeditious plan, the ground intended to be sown being well dug and the roots of all plants carefully picked out as the work proceeds. The surface should be carefully levelled, and if lumpy a heavy roller should be passed over it when it is in a dry state: give a good raking to make the surface even, and remove all stones. The following mixture of sorts will be found suitable:—Aira cæspitosa, Lolium perenne, Festuca ovina, Cynosurus cristatus, with a mixture of Trifolium repens, and T. minus. Choose a mild day for the sowing, rake and well roll. If it is desired that a lawn should be fit for use immediately, turfing must be resorted to. Select turf from an upland pasture or sheep-walk where the coarser kinds of grasses are absent. It will be necessary if turf be laid now and the weather prove dry, to water it until root-growth begins. Some fine soil should also be brushed into the open joints between the turves and a roller passed over it occasionally.

Grass Slopes.

Great difficulty is experienced in turfing steep slopes with ordinary turf. If the slopes be almost perpendicular each turf has to be secured with pegs. If the turf be cut wedge-shaped, 2 inches thick at top and 4½ at bottom, no difficulty will be experienced in getting the turves to stick in their places. Commence at the bottom, and lay a course along. It will be necessary to cut 2½ inches into the bank to allow the next course to be laid. This relieves the course below from all pressure, as each course rests upon the surface to be covered. The turves should be cut of equal width and length—14 inches by 8 will be found a very suitable size to work. Let the joints of the bottom turves come to the middle of the turf which is being laid. Beat the whole with a flat beater as the work progresse and it will give little trouble after. *W. M. Baillie, Luton Hoo.*

THE ROCK GARDEN.

SAPONARIA HYBRIDA.

This is a curious form of the common Saponaria officinalis, with connate upper leaves and a gamopetalous corolla. It has been found in several places in Britain—probably as an escape from gardens—and its name figures in all the *Floras*. The first notice of the plant is by Gerard, who found it in Northampton, towards the close of the sixteenth century, and gave it the name of Gentiana concava. It produces no seed, and therefore, unless propagated by cuttings or division, would be very likely to disappear unless looked after. Perhaps the plant still exists in some old-fashioned garden, and any information respecting it would be welcome to many cultivators of rare and curious plants. Mons. Planchon, in his catalogue of the seeds of the Montpellier Botanic Garden, asks where it is to be found; and we notice that Mr. Lynch, in the desiderata appendix to the seed catalogue of the Cambridge Botanic Garden, also mentions it. *G. N.* [We have been on the look-out for this for a quarter of a century, but hitherto in vain, though many such things drift in our direction. Ed.]

Aciphylla squarrosa.

In localities where this plant is found to do well its worth as an ornamental foliaged plant can hardly be over-estimated, especially if the success be anything like that attained in the Botanic Garden, Edinburgh, where the clear bracing cool air seems to suit its requirements admirably. The New Zealand settlers call it the Wild Spaniard, or Spear-grass; the latter name it well merits, as any one having much to do in the way of handling it will know to his cost. It is figured in the *Gardeners' Chronicle*, 1884, p. 329. After many experiments, I am perfectly satisfied that it is damp, and not cold, that this plant suffers from in low-lying situations, and the only plan to be followed is that of raising mounds and planting on the top, merely protecting the crown with glass or other material from the heavy winter rains. The moisture caught by the spreading leaves trickles to the centre of the plant, where it is held by the broad clasping bases, and brings about the decay of the young crown. A group where it could be got to do well would be a fine feature in a rock-garden. In its native habitat it is said to grow from 5 to 7 feet in height, but I have never seen it more than 2 to 3 feet high in our gardens. The inflorescence is very peculiar, and is thickly beset with its needle-pointed leaves. The seeds ripened in this country germinate very sparingly. A. Colensoi and A. Lyalli are also in cultivation, but their hardiness has as yet not been tested; coming, however, from a similar altitude to A. squarrosa, they will be found to be probably as hardy. At present they seem to be abundantly distinct from the common form of A. squarrosa, but as that species is known to vary much in the breadth of its leaves, this may not count for much, the principal characteristics lying in the inflorescence. They are all worth trying as rock plants, their curious and ornamental appearance rendering them objects of interest all through the winter. *D.*

Saxifraga ligulata.

I know of nothing to surpass this either on the rockery or as an early flowering hardy plant in a cool-house. It is an especial favourite of mine, because so early and so free. I have one specimen about 30 inches in diameter, with about twenty flowering stems on it, and the blossoms are, owing to being under glass, more delicate in tone than those on plants grown in the open ground. This specimen has been undisturbed in the same pot for about four years, and when it has gone out of bloom it stands out in the open until housed in November. I wonder gardeners do not grow it for cut flowers at this season of the year, and it is a plant that requires but little management. Some large specimens in a conservatory would be striking and valuable decorative objects. *R. D.*

FRUIT REGISTER.

APPLES FROM SOUTH WALLS.

Mr. Goodacre, of Elvaston, has just sent me examples of the American Newtown Pippin grown on a south wall at Elvaston, which for size, crispness, and rich aromatic flavour I have never known excelled by imported fruit. The colour is not equal to that of the American fruit, as even at this advanced season it is quite a deep green, so that at first sight the fruit might be mistaken for some other variety. This peculiarity is the more puzzling, inasmuch as we are usually wont to associate quality with high colour, which in this Apple, as imported, is generally green, having a straw-coloured cast, and the faintest streak of red on a brown ground on the side next the sun. It is not all of us that can afford space on a south wall for growing Apples; but query, if fruit so good can be grown on a wall in Derbyshire, why should it not be equally good if grown in an ordinary orchard in Kent? This may have been the case, but the English-grown fruit we have hitherto seen has been of the most scrubby description. *W. H.*

Apple Lady Kinloch.

This Apple was raised by Mr. John Brunton, gardener to Sir Alexander Kinloch, Bart., at Gilmerton House, East Lothian, and exhibited by him as a new seedling at the Apple and Pear Congress held at Edinburgh in 1885, by the Royal Caledonian Horticultural Society. It was considered by the jurors to be quite distinct from any other known Apple, and of such high merit that it was awarded a First-class Certificate. The fruit is over medium size, slightly angular on the sides, and handsomely shaped; skin a clear yellow, with streaks and dots of red on the side next the sun; eye closed, with rather long segments, set in a moderately deep, irregular knobby basin; stalk half an inch long, deeply inserted in a smooth round cavity; flesh yellowish, crisp, and juicy, with a brisk aromatic flavour, closely approaching that of the Ribston Pippin. It is likely to prove a valuable addition to the class of Apples of which Blenheim Pippin is the type, being an excellent keeper, and equally suitable for dessert and culinary purposes.

Mr. Brunton says:—"The seedling Apple, Lady Kinloch, exhibited by me at the Edinburgh Apple and Pear Congress in 1885, was raised here by me, along with a number of others, nine years ago. I selected it from amongst the others as being a very promising-looking variety, and planted it against a wall with a south-eastern exposure. It forms a healthy, vigorous-growing tree, of good habit, and free-bearing. The fruit keeps well, is excellent for dessert from November to February, and is equally good and useful as a kitchen Apple.

"THE BOTANICAL MAGAZINE."

(*Continued from p.* 451.)

The Founder.—This was William Curtis, born at Alton, Hampshire, in 1746, the son of a master tanner, and a member of the Society of Friends. At the age of fourteen he was apprenticed to his grandfather, an apothecary of the same town, and on the expiration of his apprenticeship he went to London, and entered the service of Mr. Talwyn in Gracechurch Street, and later succeeded him in the apothecary's business; but his botanical pursuits interfered so much with his professional duties that he was not very successful. He early acquired a taste for botany in a singular manner. The house adjoining his father's at Alton was an inn, and an ostler, named John Lagg,* employed there, was versed in the study of Gerard and Parkinson's *Herbals*.† From him Curtis received his first lessons in botany, and soon after some books of a more scientific character came in his way, by means of which he laid the foundation of a profession that brought him fame and fortune.

After neglecting his medical practice to such an extent that it was worth little he disposed of it, and devoted himself entirely to botany. In 1773 he was appointed Botanic Demonstrator to the Society of Apothecaries at Chelsea, the post having been given up in his favour, according to Dr. Thornton,‡ by William Hudson, the author of the well-known *Flora Anglica*. But, on the authority of Field, Hudson resigned in the spring of 1771, and Mr. Stanesby Alchorne, who had been connected with the Society for some years, officiated as Honorary Demonstrator for nearly two years. During his term of office this gentleman seems to have liberally supported the garden, for he presented nearly fifty new trees, and materials for a rock garden. Field states that Alchorne "presented about 40 tons of old stones, brought from the Tower of London, for the purpose of raising an artificial rock to cultivate those plants which delight in such a soil, to which was afterwards added a large quantity of flints and chalk, given by Mr. John Chandler, and also a quantity of lava from a volcano in Iceland, presented by Joseph Banks, Esq., which materials being considered fully adequate to the purpose, it was undertaken, and the erection finished in the course of the summer of 1773."

Curtis held the office of Demonstrator of Botany at Chelsea for about five years, when his increasing literary and other avocations induced him to resign it. He had united the studies of botany and entomology—the latter especially in relation to agriculture, and he wrote various treatises on the subject, but I cannot pause to particularise them. Soon after his appointment to Chelsea he commenced as a public lecturer on botany and horticulture, his great aim being to give a practical turn to his teachings. For this purpose he established a botanic garden, first in the Grange Road, Bermondsey, then in Lambeth Marsh, and finally at Brompton, where he had a "more salubrious and commodious spot." The last he continued to cultivate up to his death.§ Full particulars of the scope and extent of Curtis's garden are contained in Dr. Thornton's memoir, from which I have already quoted. It was laid out in quarters: one being devoted to medicinal plants, another to poisonous plants, a third to culinary plants, and a fourth to British plants, and so on. A catalogue of the plants, about 6000 in number, was provided for each subscriber. Seven editions of the catalogue were published between 1790 and 1799. Curtis's *Lectures on Botany as delivered in the Botanic Garden at Lambeth*, handsomely illustrated, were published by his son-in-law, Samuel Curtis, in 1805, and a second edition in 1807.

Curtis's literary and artistic activity was very great, but I must confine myself to those works bearing on the subject under consideration. In 1771 he commenced the *Flora Londinensis*, a magnificently illustrated folio work, which almost ruined its author, and was never completed. Nevertheless, a second considerably extended edition was edited by the late Sir William Hooker, between the years 1817 and 1828. The *Flora Londinensis* was issued in parts, and continued until 1787, which brings us down to the leading subject of this sketch.

The First Appearance of the "Botanical Magazine."

Though Curtis was unfortunate in his too ambitious *Flora Londinensis*, his project of an illustrated serial of octavo size and modest price was well conceived, and resulted in the most unqualified success. Indeed it was the foundation of periodical illustrated botanical literature. I have not seen any prospectus, if such was issued, but the very full titlepage and the preface to the first volume sufficiently explain the design and scope of the work. In the preface we are informed that the *Botanical Magazine* owed its commencement to the repeated solicitations of several ladies and gentlemen, subscribers to the author's *Botanic Garden*; and it is further stated that the work had succeeded greatly beyond the author's warmest expectations.

I propose now to pass the whole work in rapid review, touching upon the more remarkable events in flower gardening, and briefly noticing kindred publications in chronological order. But as few gardeners have an opportunity of seeing the earlier volumes I will first give the title:—

THE

BOTANICAL MAGAZINE;

OR,

FLOWER-GARDEN DISPLAYED:

in which

THE MOST ORNAMENTAL FOREIGN PLANTS, CULTIVATED IN THE OPEN GROUND, THE GREEN-HOUSE, AND THE STOVE, WILL BE ACCURATELY REPRESENTED IN THEIR NATURAL COLOURS.

To which will be added

THEIR NAMES, CLASS, ORDER, GENERIC AND SPECIFIC CHARACTERS, ACCORDING TO THE CELEBRATED LINNÆUS;

THEIR PLACES OF GROWTH AND TIMES OF FLOWERING:

Together with

THE MOST APPROVED METHODS OF CULTURE.

A WORK

Intended for the use of

SUCH LADIES, GENTLEMEN, AND GARDENERS AS WISH TO BECOME SCIENTIFICALLY ACQUAINTED WITH THE PLANTS THEY CULTIVATE.

1787.

First Period, 1787 to 1800.

During this period volumes i. to xiv. appeared, and it has been thus limited because the author died in July, 1799, at the comparatively early age of fifty-three, and while the magazine was still in its infancy. But this was not Curtis's only essay with a pictorial octavo, for in 1792 he began issuing diminished figures of his *Flora Londinensis*, and decades of coloured figures of medicinal plants. Of the first only thirty-six plates appeared; but it is asserted by Thornton to have given birth to Sowerby and Smith's *English Botany*, though Smith himself hints* that Curtis imitated *English Botany* as a last effort to keep the *Flora Londinensis* afloat. Considering the dates of publication, Thornton's statement is hardly correct. He also states that Curtis's figures of medicinal plants formed the foundation of Woodville's *Medical Botany*, perhaps on better grounds.

At the commencement each monthly number of the *Botanical Magazine* contained three coloured plates, and the price was 1*s*., and no change was made during the founder's lifetime. All through this period the volumes did not correspond to the years; that is to say, they ran from February of one year to January of the next, and the date of the titlepage was usually, though not invariably, that of the year in which the volume was completed. Whether any portion of the first volume appeared in 1786 I have not been able to ascertain, but the first half-a-dozen plates bear that date. The magazine became popular at once, and soon attained a monthly sale of 3000, which was steadily maintained until Curtis' decease. Many of the plates in the first volume, and most of those in the second are anonymous, and I can only surmise that they were executed by Curtis himself.* James Sowerby's first contribution is plate 12, a figure of Dodecatheon Meadia,† and after that his name is frequent. Sydenham Edwards, another celebrated botanical draughtsman‡ first appears on the scene in the second volume, plate 39, a figure of Franklin's "Tartar," a scarlet and white bizarre Carnation, and one of the very few florists' flowers admitted in the pages of the magazine. Similarly, nearly all the plates of the volumes of this period, except the last, are anonymous; but towards the end of the twelfth and the whole of the thirteenth and fourteenth volumes the plates are by Edwards. For some time previous to his death Curtis suffered from a disease of the chest, which almost incapacitated him for work of any kind; this would explain the circumstance. William Curtis's name was retained on the titlepage of the fourteenth volume; and it appears from a memorandum in the Kew copy, attributed to the late Professor Henslow, that his brother§ conducted the magazine from plate 450 until Dr. Sims became editor.

The great majority of the plants figured during this period are hardy European and Eastern North American; and the next in point of number are Cape plants belonging to the genera Erica, Pelargonium, Mesembryanthemum, Gladiolus, and a few others. Scarcely any very striking or noteworthy subjects appeared, and new species, such as Diosma serratifolia, plate 456, were exceedingly rare; in fact, there was some justification for Andrews' assertion, to which I shall have occasion to allude again, that the editor of the *Botanical Magazine* had failed to fulfil his promise to publish new garden plants. Masson, who was sent out from Kew in 1772, had already introduced a large number of Cape plants; and prominent among others who imported, directly or indirectly, numerous exotic plants were Sir Joseph Banks, Doctors Fothergill, Pitcairn, and Lettsom, and Captain William Bligh. The last-named commanded the ship *Bounty*, which was sent to the South Sea Islands to procure plants of the Bread-fruit tree for cultivation in the West Indies. How he and a few others were cast adrift by a mutinous crew, who had become so enamoured of the mode of life in those favoured islands that they did not hesitate taking this extreme measure to obtain their freedom, subsequently settling in Pitcairn Island (where some of their descendants still live), forms one of the most romantic episodes in the history of expeditions for the purpose of extending the cultivation of the vegetable products of distant countries. Bligh, however, subsequently succeeded with the ship *Providence* in carrying living plants to the West Indies, and eventually attained the rank of Rear-Admiral. The Marquis of Bute and Dr. Lettsom were munificent patrons of horticulture and of the *Flora Londinensis*, in recognition of which Curtis dedicated to them the two volumes that appeared. *W. B. H.*

(*To be continued.*)

* Field, *Memoirs of the Botanic Garden at Chelsea*, p. 81.

† J. E. Smith, in Rees' *Cyclopædia*.

‡ In a *Sketch of the Life and Writings of the late Mr. William Curtis*, p. 6. This biographical sketch is more sympathetic than it is exact in minor details.

§ Thornton states that this was continued and improved by Mr. Salisbury after Curtis's death. This was William Salisbury, the author of the *Hortus Paddingtonensis*, or a catalogue of plants cultivated in the garden of J. Symmonds, Esq., of Paddington House, 1797, and of several other botanical and horticultural books; but by no means so prominent a person as R. A. Salisbury, who will claim our attention further on.

* Rees' *Cyclopædia*.

* Thornton states that Curtis could both draw and engrave and was therefore able to superintend the work of the artist, he employed.

† It is not generally known that this specific name was originally proposed as a genus by Catesby, after Dr. Mead, Physician to George II., and a patron of the sciences.

‡ Dr. Albert Curtis, of Staines, a direct descendant of William Curtis, to whom I am indebted for all of the previously unpublished particulars of the family contained in this sketch, sends me the following note:—"I believe Curtis, the botanist, did draw some of the plants figured in the *Botanical Magazine*, but he felt the want of an artist to act under his direction. In some way he heard of Sydenham Edwards, the son, I believe, of a schoolmaster in Wales, who, as a lad, showed some talent for drawing, and had sent up to London for the purpose of having him educated as an artist."

§ Thomas Curtis, one of three brothers of the botanist, according to Dr. A. Curtis.

THE CLEMATIS.

For conservatory and other decorative purposes many of the hardy varieties of Clematis are very effective. It is those of the patens type that are the most serviceable; for, although the flowers are not so large as in the lanuginosa section, they are produced in greater abundance, and will come into flower earlier. They may be had in flower by the beginning of March, or even earlier, and where a sufficient number of plants is grown a succession of flowering plants may be kept up throughout the spring and summmer. To obtain satisfactory results the main points are, to make a suitable selection of varieties, to grow the plants on freely, to ripen them off properly in the autumn, and to introduce them into warmth at regular intervals so as to keep up a succession of bloom.

Culture.

Propagating.—The stock of Clematis may be increased either from cuttings, layering or grafting on roots; the latter is the most ready mode of propagating; by this means good plants may be obtained the same season. The best roots for the purpose are those of young seedlings of either C. flammula or C. Vitalba; or if these are not obtainab'e, roots may be obtained from old plants, selecting those with as much, fibre as possible and about the size of the scions to be used. The scions may be obtained from the young spring growths; the most tender shoots will readily unite if carefully treated, but care must be taken that they do not get withered during the operation; therefore everything should be ready, so that they can be potted and placed in the propagating case as soon as grafted. They should be potted down low enough to cover the lower portion of the graft, using small pots, and light sandy soil. If kept quite close where there is a moderate bottom-heat they will soon callus over, when they should have a little ventilation, and as soon as they begin to start into growth they should be removed to a lighter and cooler position, and it will not be long before they will be ready for potting into the pots that they are to remain in for the season. Cuttings of half-ripened wood strike freely if treated in a similar way to the grafts; the cuttings may be made from single eyes, cutting them off close below and above the point, and a small stick should be put to each to keep them firm in the pots.

Potting.—The compost should consist of good mellow loam, enriched with a little well-rotted manure, with sufficient sand added to make it porous, or a little old lime rubbish is a good addition to the soil; the plants should be potted moderately firm. They may remain in an intermediate temperature until they have made a fresh start, and after they are well established they will do better out-of-doors. When placed out-of-doors they should have a sheltered position, but should be well exposed to the sun. The pots may be sunk in the ground, covering them just above the rims; this will save a good deal of labour in watering, and will also keep the plants from being blown over in case of rough weather. Another important point is to keep the plants regularly tied as they make their growth, otherwise they will get entangled, and it will be found difficult to disentagle them without damaging the young shoots.

Varieties.

As I have before stated, the best sorts for forcing are those of the patens type, but it is not necessary to confine the selection to that section, as many of the larger flowered varieties are also valuable for pot work, especially after the plants get well established. The following are all distinct and useful kinds:—Lady Londesborough, pale mauve—very free; Miss Bateman, pure white—well formed flowers; Mrs. Quilter, white, with greenish bars, changing to pure white—one of the best for early forcing; Albert Victor, lavender, with greenish bars—a good early variety; Maiden's Blush, white, suffused with pink, with darker shade round the disc; Vesta, silvery-white, with a distinct bar; Sir Garnet Wolseley, purple, with reddish bars; Belle of Woking, double, pale lavender—very fine; Alba magna, pure white, flowers large and of great substance—extra fine; John Gould Veitch, lavender—very pretty rosette-like flowers; Duchess of Edinburgh, double white—well formed flowers; Jeanne d'Arc, silvery-grey—very pretty; Blue Gem, blue, fine large flowers—one of the best; Louis Van Houtte, purple—large and showy; Fairy Queen, white, shaded with pink—distinct pink bars; Purpurea elegans, deep blue, with purple shade; W. Kennett, pale blue—large flowers; Mrs. Hope, silvery-mauve, with darker bars. Besides the above numerous other varieties might be added, but many are very similar in colour. It is perhaps best to make a selection from plants in flower. I should add that most of the varieties vary a little according to the conditions under which they are grown. *A.*

ORANGE TREES IN POTS.

The flowering time is over, and that of small green fruits has come. From this time forward let the trees be grown in a temperature of 60° to 65° at night; they must be syringed overhead every morning at least, and must also be freely supplied with water at the roots. If any blackish sticky substance appears on the leaves it may be necessary to wash it off, but if the cause of its appearance is also done away with the trees will be all the better for it. Generally it is caused by scale on the bark, which should be scraped off with a label, and the branches where it had been clinging to should also be hand-washed with a sponge and warm soapy water. The trees are grown in good turfy loam, to which has been added crushed bones and a little leaf-mould, with a fourth part of decayed stable manure. The fruits swell rapidly under this treatment, and so full of juice are those that we have had them burst the skins before they were fully ripe. *J. Douglas.*

ROSES.

THE WINTER AND THE ROSES.

The features of this somewhat peculiar season are causing horticulturists anxious thought, as well as forcing a serious pause in their operations. Generally, a late spring favours a full fruit basket, but there are limits to the lateness, and these are likely to be overstepped if little and big falls of frost and snowstorms continue long after March is past. Seldom has vegetation been later—nor any precocious fruit nor Roses more summarily destroyed than during the last March. A peculiar feature of this pinching season, so far, has been that "March" weather, with one or two trifling exceptions, was experienced from the beginning of February. The latter, instead of partaking of its usual orthodox character of "February fill dyke," was one of the dryest months on record, and it was as harsh and cold as dry.

The frosts and the winds pierced through in not a few cases our screens of boughs that were considered protection amply sufficient for Tea, Noisette, or other tender Roses. In not a few instances these have proved too bitingly cold for Lamarque, Maréchal Niel, Triomphe de Rennes, Devoniensis, climbing or dwarf, and a few others; but generally the bracken and bough screens have preserved tender Roses intact. It is interesting to note the peculiar ways the cold has in hitting different Roses. For instance, in the case of Lamarque, most of the long partially exposed shoots are blackened from top almost to bottom; but they are hardest hit towards the top where they are least mature: though a good many single shoots if left would break their buds, few or none of them would do more. So the best way is to cut them out soon after these December frosts of 14° and 15° per night have disappeared.

Judging by the patches of snow that till lately closely hugged shady places—an almost sure and infallible sign of the continuance of cold weather—this winter will not leave us just yet. There are living signs at hand almost as infallible; these may be found among the Snowdrops, Crocuses, Hellebones, Daffodils, Primroses, Violets, and other early spring bulbs and flowers. The staying properties of the three first this year are wonderful, and as for the others, they hug the ground as in December. The wall-tree blossoms are equally inert. Neither pink Peach nor white Apricot blossoms have yet been seen on the trees. Even the precocious Ribes and Lilac wait for more genial weather before advancing in size, or clothing themselves in brilliancy; while the Laurustinus also keeps its welcome spread of pink and wbite back till Easter, or later. It is as yet too early to attempt an answer to the question of what will the harvest be? *Rosa.*

CULTIVATION OF VIOLETS IN FRAMES.

The best situation is one sheltered from the north and east, and with a good slope to the south, so that the plants can enjoy the full rays of the sun during the winter months. The beds are prepared early in April, with about two parts decayed leaf-mould and one part rotten stable dung; I make the beds the same size as the frames I intend putting on, and as I require the frames for other purposes during the summer months I put rough boards round the beds just to keep the soil in position. The beds made, I divide or rather part up my old plants (one old plant will sometimes produce ten or a dozen small ones), and taking advantage of a dull or, still better, a showery day, I plant them out about a foot apart each way, and, if it is not raining give them a good soaking. The only attention they require during the is the pinching off of all runners or offshoots, and an occasional watering of an evening in very hot weather. On the approach of frost, about the end of October the boards can be removed and the frames and lights put on; if the former are much higher than the beds they must be sunk, to bring the plants as near the glass as possible. I begin to gather the flowers about the middle of November, and we are never without large bunches of them, I may say bouquets, until the end of March. They, of course, require plenty of air during fine weather, and an extra protection on frosty nights in the shape of a thick reed mat. The best sorts, I find, are Marie Louise and Comte de Brazza. The Marie Louise have nearly finished flowering, and now they are not much more than half the size they have been. Of the Comte I have only one small frame, but it is such a splendid thing, I hope to have more next year, and I picked a large bunch yesterday. I fancy it would do well as a pot plant, as the flowers stand up well above the leaves. The most convenient size frames are 6 feet by 4 feet. Ladies generally being the pickers, they are able to shift the lights themselves without calling the gardener to their assistance, and they can get round the frames and pick without treading on the plants or injuring them in any way. I never allow a Violet to be picked until it is quite full blown, as it is then at its best. No doubt there are other sorts besides the two I have mentioned, both double and single, that will do equally well under glass in our favoured climate of South Devon. The single ones, both purple and white, do so well out-of-doors that we do not trouble to put frames over them. In other respects they should be treated in the same way as those under frames, new beds made in April, and the same mixture of leaf-mould and dung suits them well. I believe some people prefer a bed sloping to the north for them, fancying that the sun has not the same effect on the flowers after a frosty night as it would have if they were exposed to the full force of it. I have tried a bed with a northern aspect, and I must say it was not a success.

I was induced to write these notes by observing a reply in your issue of March 19 addressed to "A. B.," and if he would forward me his address I should be pleased to send him half-a-dozen old plants of Marie Louise. *J. T. S.*

Trees and Shrubs.

ABIES DAVIDIANA.

A very interesting addition has been made to the Kew herbarium in the form of specimens of this tree, originally discovered by the Abbé David in the mountains of Lon-ngan-fou, See-Tchuen, and figured and described by M. Franchet in the *Nouvelles Archives du Museum*, 1884, t. 13. The specimens received from the mountains of the Nanto district, in the province of Y-Chang, in Central China, and which we have had the privilege of examining, are sufficient to show that the plant is a near ally of A. Fortunei (*alias* Keteleeria Fortunei), illustrated in our columns on March 15, 1884, and April 3, 1886. The great interest botanically resides in the fact that we have in the two species named forms which are intermediate between the two so-called genera Abies and Picea, and which, indeed, link the two together. The trees in question have the foliage and erect cones of the silver Firs, but the persistent cone scales of the Spruces. A third so-called species, A. sancta, probably only a variety of A. Davidiana, was discovered in Southern Chensi, around the pagodas, localities which serve as sanctuaries for many a rare and interesting tree, elsewhere destroyed by fire or the axe. It is to be hoped that the seeds will germinate at Kew.

The leaf structure of A. Davidiana seems to be very similar, if not identical with that of A. Fortunei, but towards the angle formed by the junction of the upper and lower margins of the leaf in A. Davidiana there is a group of relatively very large colourless loosely packed cells which are possibly store places for water.

The localities given for the species named are: A. Fortunei, Eastern China, Foo Chow Foo, *Fortune* (!), *A. Hance, Hancock;* A. Davidiana, Western Central China mountains of Lon-ngan-fou, See-Tchuen, *Abbé David;* Central China, Mountains of Nanto Y-Chang, *Dr. Henry* (!); A. sacra, Northern China, Southern Chensi, *Abbé David.*

From these indications, and the fact that the trees are found on the mountains, it might be inferred that A. Davidiana at least would be hardy in this country; A. Fortunei we know to be tender. *M. T. M.*

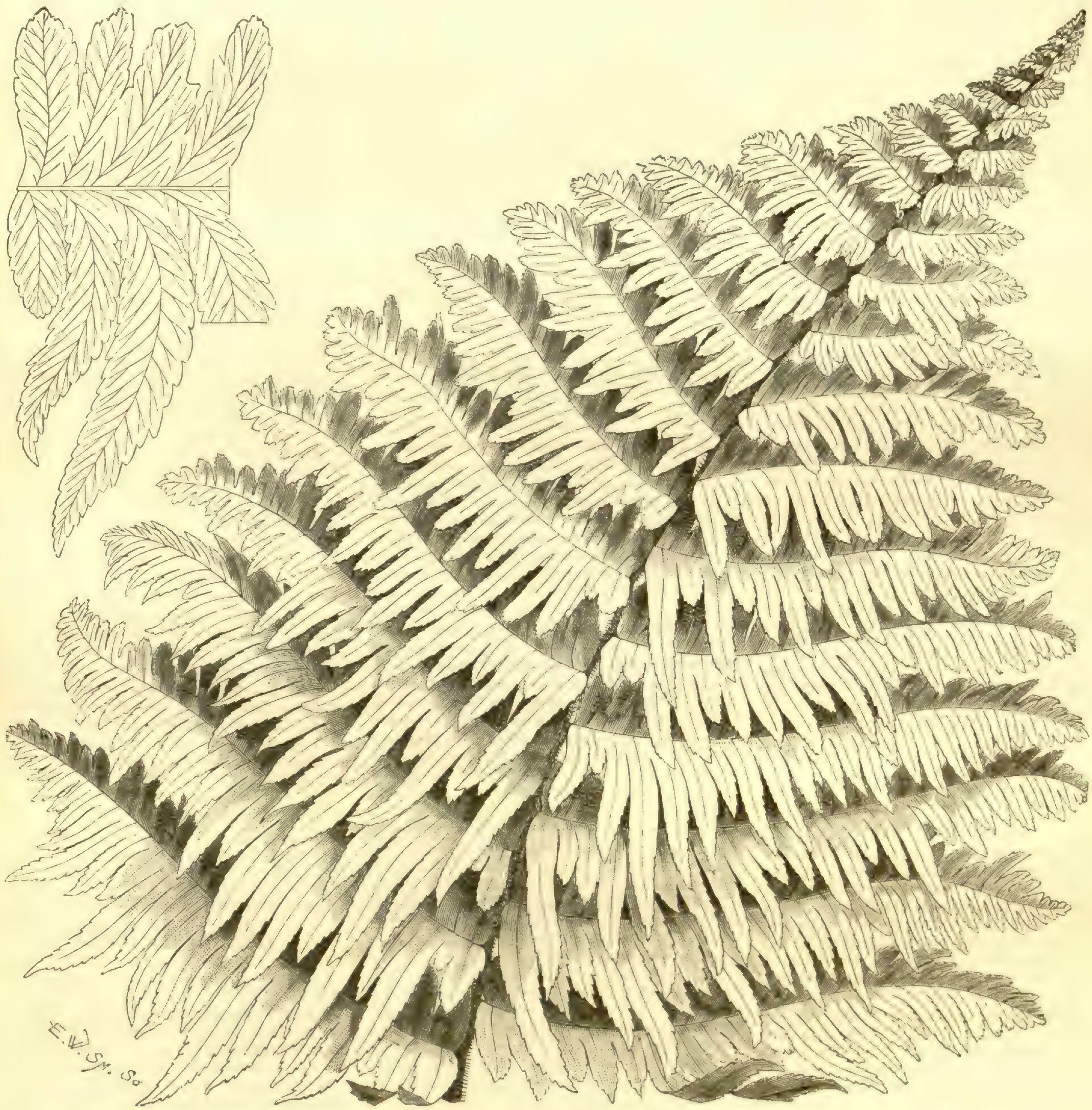

Fig. 91.—Nephrolepis rufescens var.: portion of the frond, of real size: detached pinnæ magnified two diam. (see p. 476.)

Shrubby Veronicas.

The New Zealand shrubby Veronicas form a class of plants that are becoming year by year more popular among growers of hardy flowers as the various species are being more widely distributed. At the present time there are something like sixty species enumerated, many of which are unfortunately not in cultivation at all, and a few others of the lycopodioides type will require too much care and attention to be very highly valued among the greater majority of growers. There are still a great many left, however, to choose from, varying widely in habit, shape, and colour of leaves, flowers, &c., to satisfy even the most fastidious tastes, and as they can be grown with comparative ease in ordinary garden soil, they will readily recommend themselves to those who can give but little time or attention to their gardens. Another great advantage these Veronicas have over most dwarf flowering evergreen plants is that they fill the space allotted to them with their bright green fresh-looking tufts summer and winter. Last year we saw many of the newer sorts, such as V. buxifolia, V. anomala, V. diosmæfolia, &c., exhibited as pot-plants at the Royal Horticultural Society's show at South Kensington, the sturdy, faultlessly formed little bushes calling forth general admiration. These miniature plants could be used with advantage for window-boxes during winter, grouped in corridors, or on the greenhouse stage. They will, however, and rightly so, be more largely appropriated for the rockery, and as they have passed over the present winter, so far, unscathed, there can be little doubt about their suitability to our climate. Where possible they should be grown on the most exposed positions where the ground is well drained, as I believe they suffer more from damp than cold. In shady sheltered places we have had many killed, but in the open bed none have suffered in the least. All those enumerated are easily propagated by cuttings taken off in early autumn and placed in pots of sand in a cool frame. Among those that may be obtained in the trade are V. Traversii, V. epacridea, V. diosmæfolia, V. anomala, V. ligustrifolia, V. parviflora, V. vernicosa, V. elliptica, V. glauco-cœrulea, V. pimeleoides, V. Haastii, V. buxifolia, V. Hulkeana (one of the best flowering species, throwing up many large racemes of pale blue flowers), V. amplexicaulis, V. carnosula, V. pinguifolia (the latter a glaucous leaved pretty species), V. Lyalli, V. cataractæ, &c. *D.*

Cultural Memoranda.

ALLAMANDAS.

These are very manageable plants, delighting in a compost of good sandy loam. Plants two or three years old growing in 12-inch pots, having a good drainage, and kept well supplied with tepid liquid manure at the roots during the growing season, will cover a surprisingly large area of trellis with well flowered shoots. Cuttings taken this month inserted round the edge of 4-inch pots filled with sandy soil, watered and placed in heat, will soon root, and by being potted and repotted as occasion may arise they will make nice useful plants for next year. The varieties nobilis, Schotti, and Hendersoni are all excellent, but being deciduous, require rest in the winter months, when the weak shoots must be spurred in a little. The plants should be kept moist at the roots towards the middle of February, so as to induce them to push into growth.

Panicum variegatum.

This is a useful trailing stove grass, small pots of it stood on the edge of the staging, with the ribbon-grass-like foliage hanging over, being very effective when contrasted with small plants of Maidenhair Ferns, Crotons, &c. But in order to secure fresh plants throughout the year, two batches of plants should be raised annually—one early in April and the other early in September. Three-inch pots are the most suitable to use for this purpose, and if these have a few small crocks and a little moss over them put in the bottom of each pot, then filled with light mould, having a surfacing of sand, about a dozen cuttings inserted therein, and put in heat and watered, they will soon take root.

Mignonette.

Fill well-drained pots within an inch of the rim with a mixture of three parts of fine sandy loam and one of leaf-mould, making the same firm; then strew a pinch of seed of Miles' Hybrid Spiral Mignonette, cover with a little of the soil, and put into heat after watering the soil. The young plants will appear in a few weeks, and when they have made about an inch of growth should be thinned out to three plants in each pot, the thinnings themselves being pricked out a couple of inches apart in boxes, to be transplanted to positions out-of-doors later. Top-dress the plants left in the pots with a little fine soil, and when they have made 4 or 5 inches of growth support them by four small sticks stuck round the edge of each pot, and a couple of bands of matting twisted round them. These plants, where none were raised in September last for supplying early flowers, will come in very useful for cutting from before any flowers can be had from plants out-of-doors, as well as for house and conservatory furnishing. *H. W. Ward.*

The Bulb Garden.

SPRING CROCUSES.

The Crocuses, come when they may, are always welcome in the garden, and this is more especially so in the case of the spring flowering varieties, as they begin to appear in numbers at a time when flowers of any kind almost are a consideration in the open air. Mr. Maw's sumptuous monograph, recently published, will doubtless add to the popularity these flowers enjoy. The present season has been by no means a good one for flowers of a more or less fugacious nature, as are the Crocus; but notwithstanding its protracted severity, the display of bloom has exceeded all our expectations. This genus is now being worked up in private as well as public gardens, so that instead of having autumn and spring seasons clearly defined, as heretofore, the introduction of many new species, and the diffusion of old types and varieties only seen in choice collections, enable us to enjoy these charming flowers nearly all the year round; the only intermission, indeed, being in the height of summer. The autumn section begins with C. Scharojani about the end of July, followed by C. vallicola, C. zonatus, and others, and continuing with C. Cambesedesi until the advent of C. imperati in spring. As might be expected, the spring kinds far exceed the autumn ones in number, with perhaps a greater variety of colour and markings also, but many of these have been a long time in cultivation, and the numerous varieties of C. vernus, C. biflorus, C. aureus, &c., are the consequence.

The Crocus would no doubt be more largely grown in collections were it not for the great difficulty experienced in keeping them distinct, for when grown near each other the seed of the one species is almost sure to come up in the ground allotted to another, and unless partitions of some kind are employed the young corms are also a source of annoyance to the cultivator. The least troublesome means we have seen is that of growing them on the rockery, each species having a distinct pocket to itself, and well apart from any other. They have then a chance of forming a little natural colony of their own, and thereby enhancing their usefulness for decorative purposes. The woodland and other uncultivated portions of the garden are, however, also good receptacles for Crocus corms, and the exquisite beauty of a mixed collection of these gems of spring peeping from amongst the lanky grass must be seen to be fully realised. In gardens where Crocuses are forced for greenhouse and conservatory the custom of throwing them on the rubbish-heap when done flowering is far too prevalent; if, on the other hand, they are planted in the woods or shrubberies surrounding the garden or house, where the herbage is not over rank, the experiment, as in our own case, will in the course of a few years add a very beautiful and lasting feature to the establishment. The only trouble is that of planting, and the variety of colour that can be got in this way by Crocuses alone is really wonderful, lasting two or three months in spring, and a few dwindling far into the summer.

The large number of species flowering at Kew just now gives a fair idea of the resources this genus affords for the spring gardener, and although some few differ very little in the markings, the general appearance, and time they are at their best, varies somewhat in most of them. Among the yellows the old Cloth of Gold, C. susianus, is a very pretty dwarf sort with deep orange flowers variously feathered with deep brown on the outer side, occasionally self-coloured, and often evenly suffused with brown—when full open the segments reflex, fully exposing the interior: C. chrysanthus, and its varieties fusco-tinctus, fusco-lineatus, &c., are also well worth a place on the rockery—in the type the flowers are a uniform rich orange colour, more or less suffused or marked with brown in the varieties: C. stellaris, bright orange, an old garden favourite, having been grown in the Horticultural Society's garden in Sabine's time; C. aureus, which is the parent of the old Dutch yellow, so commonly grown in our gardens—there are many varieties at present in cultivation, among which may be mentioned sulphureus, s. pallidus, s. atratus, s. lacteus, &c., all of which have value for decoration. C. Korolkowi is a new species, lately introduced from Turkestan, and likely to prove hardy in our gardens. The flowers are orange, the three outer divisions suffused on the outside with brown. C. Balansæ is a charming little species, orange suffused or entirely coated on the outside with brown. C. Suterianus, C. ancyrensis, C. Olivieri, and C. gargaricus, are all worthy of mention under this heading. The purple section, which includes C. vernus and its many varieties, C. bannaticus, C. suaveolens, C. minimus, C. versicolor, C. reticulatus, variously marked with white and lilac, are very useful for bedding, &c., as well as pots for the conservatory; C. biflorus and its many varieties, though small, give a good diversity; C. Sieberi, and var. versicolor, the latter a most handsome kind, varying from white to purple, with blotches of deeper colour near the top of the divisions; it is very interesting. Others are C. aërius, C. dalmaticus, C. Malyi, C. carpetanus, C. nevadensis, C. Tommasinianus, and others. *D.*

Chionodoxa sardensis

is now in flower at Kew, and is noteworthy for its dwarf habit and rich blue flowers, much deeper than the ordinary C. Luciliæ.

Colonial Notes.

GEELONG BOTANIC GARDENS.

The fernery, in these gardens—which, when finished, will be 300 feet long—is built of hardwood Eucalyptus posts and battens, 2 feet by 1 foot, on either side, the uprights 12 feet, with the roof rising to 16 feet in the centre, and 12 feet in width. Running the whole length is an asphalted path 5 feet wide. Between these side aisles is the central promenade, 36 feet wide, the roof rising from 16 to 25 feet. This last is elliptical in form, each end portion being 120 feet long; in the centre is an octagon, 60 feet in diameter, and 60 feet high, finishing with a point, with a vane for the finial. In the centre of the octagon is a pond 20 feet in width, extending to 36 feet in some parts; in the centre of the pond a pillar is built on a concrete foundation 10 feet square, an inch pipe rising from the centre to supply the jets forming the fountain. The pillar is built of rough rock in whorls about 2 feet 6 inches apart, each whorl having four large flat stones resting on the centre, built up with square bluestone (basalt)

blocks, and overhanging each corner of the pillar about 18 inches, and meeting in the middle. The spaces between are fitted up with small pieces, and all is cemented together; each space between the whorls is filled in with suitable ornamental stones, and plenty of soil behind in the crevices which will be stuffed with Ferns and mosses. These whorls thus become dripstones from top to bottom, the water falling into the pond below. In the pond are four jets rising from small rockeries: all around the pond are rockeries of similar stone to those of the pillars, and which are filled with rock plants of various sorts. In the eight points of the rockery are eight Victorian Tree Ferns, from 18 to 20 feet high, and in the four indentations are four tall Ferns, 35 feet high; these Ferns have all come from the Colac forest, and have been presented to the gardens. They are all, with the exception of one species, Alsophila australis; the other is called the Maori Fern, but is probably Cyathea Boylei (a form of Cyathea Cunninghami), a splendid specimen about 20 feet high; these are all fast unfolding their fronds.

There are six fountains through the middle of the centre of the fernery supplied from a 2½-inch main. Both the lines along the two walks from end to end, have rows of rocks, between which small Ferns and Sedums are planted; and all the divisions of the centre are similarly planted. We have the whole of the walls planted with a splendid collection of Ivy-leaved Pelargoniums in four blocks In the fernery are fifty-two Palms of various kinds, besides a large number of tree Ferns from 4 to 10 feet high. We have at least 600 dwarf Ferns of sorts; about sixty Rhododendrons, all the good kinds; an equal number of Azaleas; besides a miscellaneous collection of almost every suitable kind for a building of the kind. There are about 20 tons of stone in the pillar, which, altogether, cannot have cost for labour less than £50. *John Raddenburg, Curator.*

Cape Terrestrial Orchids.

The Disa grandiflora, in common with several other Cape terrestrial Orchids, is somewhat peculiar in its mode of reproduction. Although, like all Orchids, fully equipped for a specialised fertilisation by insect visitants, one never finds the pollinia withdrawn or the ovary fertilised and enlarged. The only conclusion to be drawn from this fact is, that the insect adapted to visit and fertilise the Disa is extinct. Probably this extinction occurred long ago —long even as geologic time is reckoned—for the plant has in self-defence developed a new mode of reproduction. This is by runners from the stem-crown. They break out on all sides at the neck of the larger tubers, penetrate the soil for an inch or two, and then enlarge their growing point into a small tuber. In the second or third year this tuber forms leaves and begins life on its own account, while the runner which joined it to the parent plant decays slowly away. Thus the close growth of the plant in clustered clumps, and its occurrence along a mile or two of the wet sides of the Table Mountain rivulet are accounted for.

On the same principle it follows that the removal of distinct clumps of Disa cut carefully out of the bank without disturbance of the neighbouring young plants is no factor whatever in the diminution or extinction of the species. Such holes are filled up with young growth in eighteen months, or two years at farthest. It also follows that the reprehensible practice denounced in 1886 by the *Volkeblad*, namely, the tearing up of fathoms length of the bank, picking out the large tubers, and flinging the small growth into the stream or otherwise leaving it uprooted, is exactly the way to cross the efforts of the plant at root-reproduction, and effectually to work out its extinction. It is fortunate that the attention of the Government has been directed to the matter in time, but this stringent refusal of permits to collect the plant will have the effect of considerably enhancing the price to importers. There are but few localities besides the well-known stations on the Table Mountain plateau, and most of these are in very inaccessible spots far away from Cape Town. *Capensis.*

POLEMONIUM.

Once upon a time two kings out for a walk found a plant with beautiful flowers. They quarrelled whose it should be, and the quarrel led to a war, so the plant was called Polemonium, or the "War plant." Whilst fighting they came upon another beautiful flower, which so enchanted them that they stopped the battle and made peace, so the plant which bore the flower was called Lysimachia, or the "Loose-strife." Such are the absurd stories often invented to account for plant names; but we read in Cicero and Pliny that the plants Aristolochia and Euphorbia were so called after Greek physicians who discovered their medicinal properties. Now as Greece supplied physicians to all the ancient world, and as Lysimachus and Polemon were common Greek names, we may conclude that these names were applied to plants for similar reasons. Still there is no evidence that the plant called by the ancients Polemonium was the same as that now known as Jacob's Ladder or Greek Valerian.

The genus Polemonium contains about eight species, and as all of them are native to North America we cannot do better than follow Asa Gray, the best authority on North American plants, in describing them. Two of the species are found also in Europe and Asia, one being a native of England. There is much confusion in the names applied to Polemoniums in English gardens. I have seen only four species in cultivation, though at least twice that number of names are prevalent.

Polemonium cœruleum (Linnæus), the commonest in cultivation, is a wild British plant. Its flowers vary from blue to white. In North America many varieties are found, some being of dwarfer growth and bearing flowers of larger size than the type. One of these is wrongly called P. Richardsoni, a name belonging to a distinct species. Another, also by an error, is distributed as P. pulchellum. An interesting variety with divided or bipinnate leaflets comes up abundantly in my garden from seed of P. cœruleum. In Sweet's *Flower Garden*, t. 182, this variety is figured as P. sibiricum, the name having been given by Don, who claimed to have distributed all the plants of it in cultivation; but it is likely to originate in any garden where the soil is rich, and where P. cœruleum is grown. Another large variety, called var. piliferum, is figured in Edwards' *Botanical Register*, t. 1303. The only variety named by Asa Gray is var. acutiflorum (Ledebour), found in high northern latitudes. I have not seen this variety in cultivation.

P. reptans (Linnæus).—This is figured in *Bot Mag.*, t. 1887. It is common in gardens, where it is seldom rightly named. There is an excuse for this, as its habit does not correspond with its name. Though described in the *Botanical Magazine* as "of a somewhat creeping habit," it is a compact grower, spreading slowly, and I have never seen it creep in gardens, and A. Gray says it never creeps as a wild plant. It may be known by the few and large pinnæ of the leaves, which distinguish it at once from P. cœruleum. It seldom reaches a foot in height, and the flowers are few and large, pale blue in colour.

P. humile (Willdenow) is a more creeping plant than the last, having a prostrate and tufty habit. The leaflets are many—often twelve on each side of the leaf, nearly round and even, making parallel sides to the leaf. The flower-stalk is abont 6 inches high, and the flowers are small. The plant is identified by A. Gray with P. Richardsoni of *Bot. Mag.*, t. 2800; whilst P. humile, of *Bot. Reg.*, 1304, is referred to var. pulchellum of Bunge. A. Gray also refers P. pulcherrimum of *Bot. Mag.*, t. 2979, to the same variety.

P. confertum (A. Gray) is the dwarfest form in cultivation, and has the smallest and narrowest leaflets, which are sub-divided and crowded together, so as to appear to be in whorls. The flower is large for the size of the plant. I have found this species difficult to keep; it requires a dry sandy soil, and an exposed situation, and is not common in gardens.

Besides these four species, to one or other of which all the forms I have seen in cultivation are to be referred, A. Gray describes four others:—

P. viscosum.—Apparently intermediate between P. confertum and P. humile, with densely crowded and imbricated leaflets.

P. foliosissimum.—A tall and very leafy variety, with small shabby flowers; inferior as an ornamental plant to P. cœruleum.

P. carneum.—A Californian plant, with very large leaflets and salmon-coloured flowers; perhaps not hardy in English gardens.

P. macranthum.—An insignificant annual species, not worth cultivating. *C. Wolley Dod, Edge Hall, March 2.*

THE KITCHEN GARDEN.

THE HERB GARDEN.

This useful department of a well appointed garden should now be overhauled, and, if necessary, re-arranged and replanted; most of the perennial kinds are easily propagated by division, while others, such as Sage, Rue, and Lavender, are best increased by layers or by cuttings under a hand-glass placed in a shady place outside. The annual section may also be sown at any time now in convenient beds outside, selecting a warm situation and light rich soil. These should include such useful kinds as Sweet Basil, Ice-plant, Knotted Marjoram, Borage, Carraway, and Chervil. Permanent beds of Tarragon and Spearmint are much benefited by being top-dressed with a mixture of rotten dung and leaf-soil in equal proportions; provision also should be made by planting into pots or boxes young plants of the two last-named sufficient to meet demands, these to be afterwards stood outside and attended to with water, &c., in order that they may become thoroughly established and prepared for next winter's forcing.

The Main Crop of Carrots.

Any time from the present onward to the second week in the month is a good time to sow the main crop in drills 15 inches apart, and on trenched ground which has been manured for a previous crop. If the surface has been top-dressed with soot or wood-ashes and forked in so much the better. During the growing season an occasional light top-dressing of salt and soot, in equal proportions, may be given with advantage to all crops of Carrots. For this sowing selected forms of James' Intermediate and Long Surrey will be found the most suitable. To meet requirements, and for convenience, small sowings of the Horn section are best made on beds or narrow borders, where young roots can be obtained by successional roots.

Beetroot.

For early use a small sowing of Pragnell's Exhibition Beet should be made at once in drills, and under similar conditions to Carrots, the main crop sowing being deferred until a fortnight later on. Whenever the young plants appear above ground an occasional dusting of fine quicklime should be given to prevent their being taken by slugs, &c.

Silver-skinned Onions.

These are best sown broadcast on firm but rather poor soil, and the seeds lightly covered

Globe Artichokes.

The protecting material afforded these in autumn may now be entirely removed, any sufficiently decomposed being allowed to remain on the ground to be forked in. If the plants last autumn had any appearance of weakness and failed to develope their flower-buds properly, advantage should be taken of the present time to assist them in the coming season by removing the soil from around the stools to the width of a foot or so, and deep enough to come in contact with the roots below, and refilling the space with good rotten stable-manure. To have good strong plants, some portion of the numerous suckers should be removed, retaining on each stool from three to four of the strongest growths only. If required the suckers so removed will be available for making new plantations. To forward them they may be potted into 6-inch pots, grown on in gentle heat, and finally planted out, these suckers should be taken off with a heel to them, and if possible a few roots attached. Rich trenched ground should be selected for planting in, and the plants ranged from 3 to 4 feet apart each way. *John Austin, Witley Court.*

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GARDENERS' CHRONICLE OFFICE TELEGRAMS.

NOTICE to Correspondents, Advertisers, Subscribers and others. The Registered Address for Foreign and Inland Telegrams is "GARDCHRON, LONDON."

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

TUESDAY,	Apr. 12	Royal Horticultural Society: Council, and Scientific, Fruit, Floral, and Narcissus Committees. National Rose Society: Executive Committee.
FRIDAY,	Apr. 15	North of Scotland Horticultural Association.

SALES.

WEDNESDAY,	Apr. 13	Importations of Orchids, received direct, Orchids in Flower, 7500 Lilium auratum from Japan, at Stevens' Rooms. Lilies, Roses, and other Plants, at Protheroe & Morris' Rooms.
THURSDAY,	Apr. 14	Imported Orchids, from F. Sander, 7500 Lilium auratum, from Japan, at Stevens' Rooms.
FRIDAY,	Apr. 15	Imported Orchids, at Protheroe & Morris' Rooms.

Frost and Vegetation.

We have already alluded to the publication of the long-delayed Frost Report,* in which the Rev. George Henslow has tabulated, at the cost of much labour and pains, the results of the severe winters of 1879-80 and 1880-81; but its importance necessitates further notice now, and will demand frequent reference in future. The Report originated in a suggestion of Mr. Elwes at the Scientific Committee of the Royal Horticultural Society in 1880. Schedules were issued to various gardeners in that year, and also in the year following, and on the information thus acquired the present Report is based. It comprises indeed a truly formidable amount of detail, and the trees are so many and so thickly set that, to use a popular phrase, it is difficult to see the wood. Nevertheless, as a work of reference the list is unsurpassed, and it is well worth taking some pains to understand the meaning of the concisely arranged, but complex-looking, indexes. The ordinary gardener, for instance, has not much time or inclination to study meteorology or vegetable physiology in the abstract—he wants tangible results. Well, here he has them in abundance. Does he want to know which Broccolis are hardiest? He will find numerous references giving the experience of his colleagues in various counties; and so with Borecoles, Cabbages, Cauliflowers, Brussels Sprouts, Potatos, Apricots, Peaches, Cherries, and many other plants in which he is specially interested. The evidence is not complete nor is it unexceptionable; it could not be so; it is only valuable as affording indications the value of which must be tested on consideration of other factors than the mere register of the thermometer. For instance, the altitude and exposure, the preceding circumstances, the stage of growth, the varying conditions of soil and atmosphere, and a host of other conditions both external to the plant and intrinsic to it, have to be considered and taken account of. Nevertheless, when all allowances are made for these necessarily inconstant factors, the present record stands out as the most complete and useful that has been yet issued. It is a credit to the Editor, on whom the burden of the work has mainly fallen—it is a credit to the Society, whose publications during the last few years have been such solid and valuable contributions to horticultural literature as to show that the Society is eminently one of public utility, and not, as some people think, a mere fashionable lounge or trade-certificate factory.

The planter, again, who is planting either for ornamental purposes or for timber, will find a mine of valuable information in these pages, though he too will be embarrassed by the amount, the complexity, and, in some cases, the apparent inconsistency, of the evidence. He will not, for instance, be surprised that the Douglas Fir should have been injured by a temperature of 2° below zero; but that being so, it may perhaps strike him as singular that at another place the tree withstood—13°, or 45° of frost. Varying local circumstances of course account for the apparent discrepancy, and it is in these local circumstances that the Report before us has special value. It would not be of much use to a planter, say on the East Coast, to know what plants survived the winter in the Scilly Islands, but it would be important for him to know what species were hardy in his own immediate neighbourhood. This information is to a large extent supplied in the book before us.

Take, for instance, St. Margaret's Bay, near Dover, a bleak spot—so bleak that seventy Lawson's Cypress are recorded as having been killed, together with 600 Austrian Pines, and 1000 Scotch Firs—and all this havoc near the sea, where the temperature is usually more equable; but, says the reporter, Mr. Swinnard, the plants and shrubs were more injured by the cold easterly winds than by the frost; and from our knowledge of the spot we can well understand that this may be so, and it is further confirmed by the testimony of Mr. Lawrence, of Betteshanger, a few miles from St. Margaret's Bay, and where we are told that the trees of all kinds suffered more from the cold winds of May, 1880, than they did from the wet of 1879 or the frost of 1879-80. Similar testimony is given by other observers. A frozen mist is spoken of as very inimical to Hollies near Bedford. In Dumfries half the Roses were killed in 1879-80, though in the previous winter, 1878-79, when the temperature went down to 2°, not a Rose was killed. The explanation is that there were in 1879, 50 inches of rain, and only one month in the year (July) without frost. In Gloucestershire we find Sir Brooke Kay remarking that in his opinion the cold winds and dry weather of spring completed the damage done in the past winter (1880-81). The injuries would not have been half so great had it been succeeded by a milder and damper spring. Many Roses and other things that were just touched by the frost died afterwards.

The foregoing remarks will serve to show the nature of the contents of the Frost Report. What seems to be specially wanted now is that some one with adequate knowledge of plants and their mode of life and with a competent acquaintance with meteorology and physical geography—needless to add, with unlimited time, should go through Mr. Henslow's mine of facts, and by careful collation and corelation evolve a climatic history of plants cultivated in the open air in this country, and work out the relations of local climatic conditions to the varied phases and idiosyncrasies of plant life.

Another thing must forcibly strike those who are interested in the Royal Horticultural Society. An under-current of discontent prevails because it is said the Society does so little for the provinces, and that provincial exhibitors and gardeners are unfairly treated in comparison with their metropolitan brethren. We do not intend to discuss that matter now; suffice it to say, that the Society clearly might enjoy the good-will of the country horticulturists, if it chose, and it has it in its power to avail itself of the help of provincial gardeners. This was shown by the really phenomenal Apple Congress, and to a less extent by those which followed, as well as by the Report before us.

There being such conclusive evidence of the desire of the provinces to co-operate and help the Society in its legitimate work, we may well wonder why the Society does not cement these ties by appointing a prominent country gentleman in every county as Vice-President, or whatever honorary office the Charter will permit, and by securing a head-gardener of repute, or other competent person, in every division of every county as a local secretary. They would not all work for the Society, but it is obvious that some would do so. Again, why should not those gardeners, or a select number as representative men, who have contributed to these reports and conferences, be elected as Honorary Associates? It would cost the Society nothing, while the appreciation of the compliment would be shown by the increased and more widely diffused interest manifested in the Society and its work.

* *The Journal of the Royal Horticultural Society*, vol. viii., "The Frost Report," &c., edited by the Rev. George Henslow, M.A.

Covent Garden Sales.—Our columns have frequently—much too frequently—borne evidence of the unsatisfactory nature of the market-reports published in our own and other journals, and of the meagre returns in many cases obtained by growers for market from their salesmen. Indeed, we have heard of an instance where the grower was even made his salesman's debtor. As the sales are conducted in the early morning, it is not easy to attend at the disposal of one's articles; consequently, there is no guarantee of the salesman's fair-dealing; and in saying this, we desire to cast no imputation on individuals, but merely on a system which they follow because others do, but which excites the gravest dissatisfaction among growers in general. We are glad to learn that Messrs. J. W. Draper & Son, whose reputation is so well known, and who have hitherto confined their business to foreign fruits, are making an advance in this respect. Owing to its having been represented to them that they would benefit the producer by introducing into their public auction sales home-grown hothouse fruits, flowers, &c., but not outdoor produce, they will, as they inform us, conduct public sales on Mondays, Wednesdays, and Fridays, at 10·30 a.m., in Covent Garden Market, when, as will be seen, the prices obtained can be easily recorded. A fair commission will be charged, which will cover all expenses except carriage; and thus the grower will be able to feel that he has received the proper market value of his articles. We heartily wish that this move of Messrs. Draper may prove a success, and see no reason why it should not be so. Let those of our readers who are disposed to part with their hothouse produce make a trial of this system.

Lælia anceps alba.—Carrying out our intention to present our readers with latest additions to the fine varieties of Lælia anceps, we figure on p. 485 (fig. 92) a flower-spike of L. a. alba, from a flower exhibited from Baron Schröder's collection by Mr. H. Ballantine on January 11 of this year, at the Royal Horticultural Society's meeting. This is a pure white variety, remarkably chaste and

beautiful, the sepals and petals broad as in L. a. Dawsoni, with lip embellished with a pale yellow disc. The usual season of flowering is December and January.

"Reichenbachia."—The seventh part of this sumptuous publication has just been issued. It is a veritable *ouvrage de luxe*, while the character of the text adds a useful feature too often overlooked in publications of this class. The plants now figured are:—

Maxillaria Sanderiana, t. 25.—This is a magnificent new species, the flowers of which look more like those of a Lycaste Skinneri than those of a Maxillaria. It was discovered by Klaboch in the Andes of Ecuador, and was first exhibited in flower by Baron Schröder at the Orchid Conference in May, 1885. It comes from an elevation of 4000 feet, and must therefore be considered to require cool-house treatment. Very few plants are in Europe at present, as most of those collected died during the voyage. The flowers measure 5 inches across in transverse diameter, while from above downwards they are 2½ inches. The three sepals are ovate deltoid, rose-coloured, with a deep crimson blotch at the base. The petals ascend at an acute angle, they are of similar form and colouring as the sepals, but small. The lip is oblong, slightly 3-lobed, with numerous crenulate lobules and a thick wart on the disc. In colour it is yellow, with purplish spots.

Odontoglossum Edwardi, t. 26.—A species from the Andes of Ecuador, where it was discovered by G. Klaboch, at an elevation of 7000 feet, and should, therefore, be cultivated in a relatively cool moist house, such as suits O. macranthum, O. Phalænopsis, &c. The plant flowers only in alternate seasons, and then sends up from the base a long-stalked, much-branched panicled cyme with very numerous flowers of a reddish-violet colour with a bright yellow callus. The flowers are very fragrant, and measure about an inch in their longest diameter.

Vanda teres, t. 27.—This Orchid is said to flower more freely on the Continent than in Britain, probably on account of the greater intensity of light to which it is subjected on the Continent. The plants must be grown in a hot and moist house, fully exposed to the sun; they must be syringed several times during hot and dry days, and must never be allowed to become dry at any season. Formerly the plants were allowed to become dry, to give them a period of rest, but this practice is found not to be desirable. The colouring of this plate does not seem to us to give an adequate idea of that of the flower—a circumstance which will not be surprising to those who are familiar with the plant.

Odontoglossum Hallii var. xanthoglossum, t. 28.—The finest of the luteo-purpureum section, native of the Andes of Ecuador, where it has been known for a long period, though it is not common in cultivation, owing to the difficulty of importation. At the port of shipment (Guayaquil), and across the Isthmus of Panama, the temperature often rises to 120° F., which is fatal to this mountaineer. "This Orchid," says Mr. Sander, "must be kept growing all the year round, and only during the time that it is in bloom should it be kept a little drier. A cool and moist atmosphere, abundance of light (but not direct sunlight), and thorough ventilation, are the essential conditions to observe in the treatment of this fine species."

Fig. 92.—Lælia anceps alba: flowers white. (see p. 484.)

Great Sale in Ghent.—We learn that while many of the Orchids, Nepenthes, &c., will be transferred from Ghent to the "Horticulture Internationale," about to be established in Brussels under the direction of M. Lucien Linden, yet that a large collection of Orchids, Palms, Cycads, foliage plants, Azaleas (more than 100,000 plants), Camellias,

specimen plants for winter gardens or exhibitions, &c., will be sold at Ghent on May 16 and following days. A catalogue will be issued on May 1.

Emigration.—We are very often asked to supply information as to the advantages of this or that colony to intending emigrants. It may readily be understood that we feel some hesitation in replying to such questions. In future we shall refer our querists to the Emigrants' Information Office, 31, Broadway, Westminster, which issues quarterly circulars containing, in clear language, valuable information regarding the means and cost of transit, the outfit, tools, time of making the journey, arrangements on landing, demand for labour, capital required, the general features of the colony, its population, religious and educational advantages, railway, postal, and telegraphic facilities, the cost of living in the colonies, the cost of clothing, the average rate of wages. These and similar details are given for each one of the colonies. From the lists before us we find that in Ontario gardeners' wages are about 1.25 to 1.50 dollar a day without board (a dollar is equal to 4*s*. 2*d*.), and 15 to 20 dollars a month with board. At Port Arthur the rates are as high as 1.75 and 2 dollars per day without board, and 40 to 50 dollars per month with board; and about the same rates rule in Winnipeg. In New South Wales gardeners get £40 to £65 a year, with board and lodging. In Victoria, 15*s*. to 25*s*. per week with board; in West Australia gardeners obtain from 5*s*. to 8*s*. a day; in Tasmania £30 to £45 a year, with board and lodging; at the Cape of Good Hope, 20*s*. to 40*s*. per week. The small capitalist and the healthy man who can turn his hand to anything are the men most in demand. For respectable women-servants there is a large demand in all the colonies; while, on the other hand, artisans, mechanics, and especially clerks, are warned off as not required.

"Botanical Manipulations."—This is the translation of the title of a recent work of M. Paul Girod, which we recommend to botanical students desirous of obtaining a knowledge of the microscopic structure of plants. Although there are now several treatises, some of great excellence, we do not know of one so simple, and therefore useful to the beginner, as this. It shows what instruments and re-agents are necessary, and then explains their use. Numerous lithographic illustrations afford additional aid to the student by directing his attention to what he ought to see, and by explaining the significance of what he really does see.

The Burridge Relief Fund.—Mr. R. Dean writes:—"Will you permit me to announce in your columns that I have received in contribution the sum of £10 15*s*., and that the same has been placed to the credit of Mr. T. K. Burridge, at the National Provincial Bank of England, Limited, at Ipswich? The fund is now closed." Mr. T. K. Burridge, writing on the 4th inst., says:—"Although the sum raised is small, I am just as grateful as if a larger one had been received; it has, I assure you, been a source of great comfort to myself and wife."

Bedfordshire Horticultural Society.—The fourth annual exhibition of this Society will take place on Wednesday, July 13. Several classes for Roses and one for cut flowers of hardy perennials, in which handsome prizes are offered, are open to all England.

"Lindenia."—The following plants are figured in the last number:—

Cypripedium concolor var. tonquinensis, t. 77.—A variety of C. concolor with cream-coloured flowers spotted with red, and with a white lip similarly spotted. The leaves are dark green, elegantly marked with paler spots.

Miltonia Roezlii (t. 78.), better known as Odontoglossum Roezlii, is remarkable for its flattened flowers with white segments blotched with crimson at the base, and with a broad roundish flat white lip with a yellow blotch at the base.

Phalænopsis amabilis, t. 79.—For the culture of this plant the Editors recommend a high temperature with abundance of moisture, especially in the growing season, taking care not to allow the leaves to remain wet. Thrips should be sedulously watched for, and care taken not to injure the flat roots which grasp the sides of the baskets or pots in which the plants grow. The plant should not be allowed to overflower itself, and after flowering it should be kept dry for a space of two months.

Galeandra devoniana var. Delphina, t. 80.—In this the perianth is spreading, the segments lanceolate, cinnamon-brown, bordered with yellow, and with a large projecting white lip rolled into a tube, spotted with red. The plant is a native of the disc or anterior lobe flattish, streaked and Venezuela, where it was discovered by M. Bungeroth, and it differs from the type in being more slender, in the deeper colour of the perianth segments, and the white lip.

The Earthquake on the Riviera.—Our esteemed correspondent, M. C. Naudin, remarked lately before the Academy of Sciences that the sea at Antibes receded about 3 feet, but soon returned with considerable velocity to its normal level. M. Naudin attributes the phenomena to the resistance offered by certain parts of the terrestrial crust to the electricity generated in the globe itself. It is pointed out, says *Nature* (from which we take this extract), that these disturbances occur always in districts destitute of forest-growths, which might serve to discharge the atmospheric electricity; and on this is founded a fresh argument for replanting lands that have become disafforested. We are glad to learn also that our valued friends, Dr. Bennet, and Mr. Hanbury of Mentone, and their respective gardens, have suffered no injury from the earthquakes.

South Hayling Horticultural Society.—This is a new Society, Mr. John Hepper, formerly of The Elms, Acton, being one of its principal promoters. The first exhibition is fixed for August 11.

Tobacco Culture.—According to the researches of M. Mueller, abstracted in the last number of the *Annales Agronomiques*, it would seem undesirable to employ highly nitrogenous manures. in the culture of this plant. These may indeed induce a more luxuriant growth and a larger proportion of albuminoid matters, but these latter are objectionable during fermentation, and communicate an unpleasant odour to the Tobacco when burning. Too many leaves should not be removed, for the fewer leaves retained the greater the proportion of the objectionable albumenoids. Potash manures are indicated as favouring the accumulation of the hydrates of carbon.

Royal Horticultural Society of Aberdeen.—Councillor Lyon, chairman of the acting directors of this Society, has just received from Dr. F. Maitland Moir, Aberdeen, a beautiful silver cup, to be competed for at the summer exhibition of the Society, for the best Scotch Thistle. This will be quite a new feature, and a strong and spiney competition is anticipated!

Phœnix rupicola.—This handsome Palm has become a great favourite for decorative purposes, and is accordingly grown on a large scale by those who devote themselves to the culture of this class of plants, as, for instance, Mr. Kinghorn, of Sheen Nursery, Richmond, where a fine collection of these Palms is grown. A variegated variety has now appeared, which is figured in the January number of the *Illustration Horticole*.

Gardeners' Royal Benevolent Institution. — We understand that a scheme is being promoted to enable the Committee of the Gardeners' Royal Benevolent Institution to make a pecuniary grant to each of the 122 pensioners and to the ten unsuccessful candidates at the last election on the occasion of Her Majesty's Jubilee.

Royal Horticultural Mutual Improvement Society. — The members of the above Society supped together on Friday evening, April 1, at the Bolton Hotel, Chiswick, when twenty-five persons met to celebrate the conclusion of the first session, and passed a very pleasant evening.

Tobacco Culture in Russia.—In a report on the trade of the ports of the Sea of Azoff for the year 1886 the cultivation of the Tobacco plant is said to be receiving yearly greater attention, and it is expected that it will soon become an article of export. "Last year the Imperial Government sent several persons to Turkey and Holland to study the culture and the different qualities of Tobacco, likewise the principal markets. They also visited the districts of Taganrog, and the data collected by them show that the climate and soil are admirably suited to the growth of certain Tobaccos which meet with ready sale abroad. Several kinds of seed have been brought to Russia. A manual for the culture of Tobacco is to be published, and encouragement given to extend the plantation. The average excise levied on this article for the past three years has been 17,522,014 roubles, and the sum paid yearly for Tobacco licences 1,767,180 r. At Rostoff Messrs. Asmoloff & Co.'s Tobacco manufactory turn out annually 6,000,000 r. worth of Tobacco and cigarettes."

Harpenden Horticultural Society.—The ninth annual show of the above Society has been fixed for Wednesday, August 24.

A "Dodge" for Gardeners. — Mr. J. T. Saltau, Little Efford, Plymouth, has forwarded us an ingenious, inexpensive, and useful contrivance which he employs for lessening the stream of water flowing from a watering-pot, as is often necessary when watering small plants, cuttings, &c. The usual way of securing the end in view is by partly blocking the orifice by the finger. Mr. Saltau procures a cork, and burns a hole through its centre by means of a hot iron, and then inserts a portion of a goose-quill which is slightly longer than the cork itself. The cork tapers so that it will suit almost any can. We think our readers may find the contrivance of use, and one that anybody can easily manufacture for himself.

Special Prizes.—As instigating gardeners to good cultivation of Roses, Begonias, Chrysanthemums, table plants, Dahlias, fruits of various kinds, Potatos, and vegetables, Messrs. W. Wood & Son, Wood Green, London, N., offer a number of special prizes—Silver Cups, Medals, &c.—at numerous exhibitions to be held this year in the metropolis and the provinces. One cup is of the value of five guineas, others are of four guineas, and lesser prizes run down the scale to money prizes of 5*s*,

Daffodil Committee.—A member of the Daffodil Committee writes as follows: — "Members and growers of white Daffodils will very much oblige by bringing cut blooms of Narcissus tortuosus to the next sitting of the Daffodil Committee. The blooms must be from the stock as known by that name prior to the 1884 Conference, and have been in their possession for three years."

Publications Received.—*Colonial and Indian Exhibition: Reports on the Colonial Sections.* Edited by H. Trueman Wood, M.A. (London: William Clowes & Sons, Limited, 13, Charing Cross, S.W.)—*Lawns, &c.: their Formation and After-management.* (London: J. Carter & Co., 237 and 238, High Holborn.)—*Smithsonian Institution Report for* 1884. Part II. (Washington, U.S.S., Government Printing Office.)

TRADE MEMORANDUM.

The address of Francis & Co., Telegraph Engineers, late of Eagle Telegraph Works, Hatton Garden, London, E.C., is asked for.

Plants and Their Culture.

STOVE FLOWERING PLANTS.

Many of this section are now making good progress, and will require ample space to develop, so that their young growths may be sturdy and short-jointed: this is a point of importance more often overlooked in the management of plants than fruit. Another matter deserving notice is shading. This is sometimes overdone, and the sparse flowering of Allamandas, Stephanotis, Clerodendrons, Hibiscus, &c., may not unfrequently be attributed to undue carefulness in this direction. Where the mealy-bug has a footing it is almost certain to lodge in the trusses of the Stephanotis, Medinilla, Clerodendron fallax, Mussaenda, Ixora, and beneath the buds of Gardenias; these should therefore receive attention before they expand their blossoms, for if neglected the eradication of this pest will entail increased labour, accompanied with less satisfactory results. The shoots of Dipladenias, Stephanotis, and the strong-growing Hoyas, &c, as they lengthen should be run out over trelliswork near the glass, so as to expose them to air and light; this mode of treatment is far preferable to that of training round a balloon trellis or crowding upon single wires or columns, as it increases the plant's capability of free-flowering. If it is desirable to blossom the plants upon formal trellises, such training can be accomplished as soon as a disposition to flower is shown. Hoya bella is a moderate growing species, and produces its delicate clusters of flowers profusely; but if over-potted, or too freely watered, it will soon show symptoms of ill-health; it requires a light position. These cultural remarks also apply to Epiphyllums. Jasminum Sambac and J. gracillimum, after they have finished flowering, should have their weak growths removed, and should be assisted to make strong growths with occasional applications of weak liquid-manure. In order to equalise the growth of such robust plants as Allamandas and Bougainvilleas the points of their strongest shoots should be stopped; this will cause them to break, and improve the general appearance. Rondeletias and Franciscea may receive like treatment; the latter should be guarded from bright sunshine. The young shoots of the two last-named plants will now root freely if placed under a bell-glass in a brisk temperature. In syringing, the wetting of the spathes of Anthuriums Andreanum, Scherzerianum, &c., must be avoided if their durability is to be effected. The formal way in which they are sometimes seen staked, marring the natural beauty of the plants, is a practice unworthy of adoption. Young or weak plants should have their spathes removed as they appear, when an improvement in their condition will soon be manifested. *Thomas Coomber, Hendre Garden, Monmouth.*

Nursery Notes.

Mr. Vertegans, whose nursery at Chad Valley, Birmingham, we have lately visited, has taken as the motto of a trade announcement the words of a certain emperor, "I would rather get my people a new kind of fruit than build a hundred porcelain towers," a sentence which forms a good maxim for one who makes a business of introducing plants. Mr. Vertegans thinks that we are too limited in the number of our fruits and vegetables, and that much remains to be done by the introduction of new sorts as delicious to the palate as they are attractive in appearance. He believes in Blackberries.

The American Blackberries, he says, may be classed in two sections, as "ironclads," adapted to the climate of the Northern States, and the "ordinary varieties" of the warmer States, such as the tender Kittatinny and Lawton. In our climate we can only rely on the former section, and especially on "Snyder," which is, however, but a small variety, and cannot be the coming Blackberry, of which we have been for some time advised.

No doubt all defects may in time be dealt with, but whether this has been accomplished in Mr. Vertegans' "Best of All" Blackberry we cannot say. He hopes so, and so do we.

Among novel fruits on trial here, we desire to mention the Persimmon, Diospyros Kaki, from Japan, a tree described by Mr. G. F. Wilson, of Heatherbank, Weybridge, who has exhibited it at South Kensington, as grown by him in an orchard-house, the fruit being of a rich red colour, the size of a small round Tomato, and an ornament to the dinner-table. Being astringent, it should be kept some time in the fruit-room, when it becomes soft as a Medlar, and transparent, with a sweet and pleasant, but rather mild flavour (p. 576, 1872).

Mr. Vertegans has just announced a blue Currant, called Blue King, and he is also developing the Juneberry, Amelanchier canadensis, a well-known tree 32 feet high, with white spring blossoms and yellow autumn foliage, another tree of North America. The Japan Chestnut, the size of a Walnut, is a nut of novelty, of superior flavour, it is said, with leaves like those of the Peach. This brings us to Mr. Vertegans' "Melon-Pear" (a species of Solanum, see *ante*, p. 386) from the interior highlands of the central North American States, a greenhouse plant which may be set out like the Tomato, and which may perhaps stand the winter in Devonshire or Cornwall; elsewhere cuttings should be taken in autumn and planted out in June; or it should be grown in an orchard-house.

The ornamental flowering Brambles from the Rocky Mountains are made a speciality here, including Rubus nutkanus, R. odoratus, and R. spectabilis, and R. deliciosus, which Torrey named and described as long ago as 1822. It was tested and found hardy at Kew, both as a standard and against a wall, growing about 8 feet high, and blossoming in May when protected, and 4 feet as a graceful bush in the open, when its slender sprays of snow-white flowers are produced about the third week in May: see fig. 101, *Gardeners' Chronicle*, vol. xv., p. 537. The double rose-flowered Bramble is a spreading bush with large double flowers—a novelty for lawns, and worth a trial in warm sites, as well as the white flowered variety, whose limited growth at present may be due to its rather tender habit. It is a winter flowering plant, very noticeable and attractive in warm situations, and in mild winters, or in a greenhouse. Mr. Vertegans recommends among his little-known shrubs Rhodotypus kerrioides, which is sometimes called the white Kerria, and which we have noticed as a pretty shrub in bloom in the Oxford Botanic Garden (*Gardeners Chronicle*, p. 730, 1885). Its leaves are like those of the old Kerria japonica, and its white flowers like those of the single Bramble, with the addition of a large leafy calyx. It grows 4 or 5 feet high, and is quite hardy in this country. In Japan it is a favourite shrub of common culture under the name of Jamabuki.

Other shrubs grown here are the evergreen Azara microphylla and Pavia macrostachya, or small-flowered Buckeye, the former having highly-scented small orange-yellow flowers, and proving hardy in the warmer western counties, and the latter being a shrub of the river-sides in North America, and quite hardy. It may be found at Kew when in flower in July, on the west side of the Palm-house, conspicuous as a dense broad shrub, throwing up numerous suckers in a moist site, and bearing many spikes of fragrant flowers lifted above the foliage, and distinguished by feathery-looking stamens. It has been compared, not inaptly, to a little Horse Chestnut. The usual height is 3 to 6 feet, and its proper position is in the front part of the shrubbery, or on the lawn itself, where it is not starved or crowded, and can lie down on the lawn, so to speak, furnished with foliage to the grass.

The depth of winter is not the best time for inspecting an open garden, but we walked through the stock of alpine plants—a good and varied collection—and observed the beds of Campanula persicifolia coronaria, one of the best of the white flowers now popular everywhere, this one being in great demand.

A lot of promising Poinsettias filled one of the houses. In another there were Palms and Dracænas by the thousand, and a quantity of young Ferns grown from the spores, and including the uncommon Pteris tricolor. In the propagation of plants Mr. Vertegans not only commences as far back as he can in the case of the Ferns, but he strongly recommends sowing the seeds of trees, so as to avoid subsequent transplanting. Naming the plants that caught one's eye, we observed in the houses Bouvardia corymbifolia, white Primulas, Asparagus tenuissimus, and other sorts of the same graceful plant; Beauty of Malvern Tropæolum, and several varieties of Calanthe grown in baskets, and suspended in the best position for light where at the same time they do not monopolise space. It is well to avoid adjectives in these descriptions, or we should say that Euphorbia (jacquiniflora) fulgens is one of the "best" winter flowering plants; at any rate, we could not pass it without notice, nor the Rose Sunset, which was still in blossom in November, and which had not been without one or more specimens of its rich fawn-coloured flowers since it arrived here the previous April.

Other things we noticed must be omitted for the sake of reaching the Lapagerias. They are grown in a house which is kept as cool as possible, a stove being quite unsuited to the habit of the Lapageria, which may be seen sometimes in hothouses completely spoiled by too much heat. That the system pursued here suits the plant is evident from the stout shoots produced in the layers by which it is propagated. Even on the shoots of last year's layers there are already plenty of blossoms. After blossoming continuously since last June the white Lapageria still carries many buds which will open in turn, through the winter, but for the moment the blossoms had vanished to satisfy the large demand for them. In the same house Lapageria rubra superba had been in blossom five months, and was so still, as were a number of 3-year-old plants in pots. This is undoubtedly an improved variety, the flowers being nearly twice as large as those of L. rosea.

Plants in Flower at Mr. W. Bull's.

In spite of the usual summer exhibition here that opens in May, and for which a great number of things are being retarded, there is in the numerous houses much of interest. The Masdevallia-houses are full of healthy stuff bristling with flower-buds; the few with flowers open were M. Chelsoni—a fine variety of this; the pale M. triangularis and M. Harryana cœrulescens. Odontoglossums in flower included plants of O. hebraicum luteolum, a flower with yellow ground colour, with lighter brown spots; a variety of crispum, named Victoriæ; a bloom of circular outline and thick substance, such as most growers admire, but which might be taken for a single Camellia at a short distance. Several other nice forms of O. crispum, both white and yellowish-white, were furnished with strong spikes, and many—the majority—had yet to open their flowers. Late as it is, O. Cervantesi decora was still covered with bloom, perhaps a trifle past its best; and the singular looking O. maculatum, with lip of yellow, was in bloom in the O. crispum house. The two forms of O. Rossi majus, the white-ground and the lilac-ground flower, were showing quantities of flowers of medium size. Of Dendrobiums we noted a beautiful group of citrosmum, robust, and with well knotted short pseudobulbs, certain to carry numerous flowers. D. crassinode var. Barbieriana, a variety with prettier markings than the old form, and the showy D. macrophyllum giganteum.

The flowering plants of species of Oncidiums were not many, O. pachyphyllum, of the Cavendishi type, with a massive spike of yellow and brown flowers, was conspicuous, as were O. Phalænopsis, a plant with a few blooms; O. cucullatum, a heavily spiked O. macranthum, O. Kramerianum, a large group, making a fine show of spikes, most of which have yet to expand; O. sarcodes, and O. Marshallianum: the

flower-spike of this species, was of a goodly length, and still growing.

The species and varieties of Cypripedium in flower were not numerous, and consisted of Argus, callosum, Warneri, ciliare, and vernixium.

The remarkable Cirrhopetalum picturatum was found in flower, the plant carrying one spike of its green and brown blooms with purple crest.

A large number of medium-sized plants of Odontoglossum (Miltonia) vexillarium was observed, which will make a conspicuous display at a later date; there were few or no flowers visible, but of M. Roezlii and M. R. alba there were numbers carrying flowers.

Of Cattleyas showing for a rare harvest of bloom are—C. citrina, on blocks, which is regarded as a shy bloomer; C. purpurata, C. gigas, C. Skinneri, and C. Trianæ. The healthy dark leaves, and stout shining pseudobulbs, speak of the suitable cultivation pursued at this nursery. Cymbidium Lowianum, and the dark variety, atropurpureum, show well for bloom, as do the plants of C. eburneum. A plant of Epidendrum nutans was carrying its racemes of green and white flowers, and the handsome Chysis bractescens also bore a solid looking spike of bloom.

Of miscellaneous plants noted may be mentioned Aristolochia elegans, figured in the *Gardeners Chronicle*, of which a large stock exists; several varieties of Clivia, of fine colours and form, raised at the nursery; the Tillandsia Lindeniana vera, each plant with a spike or two of flower, not yet showing its lovely blue colour; Azalea japonica balsaminiflora, a neat double flower, the colour pink, going off to pale flesh at the edges of the petals, and resembling the better known Glory of Sunninghill. *M.*

THE GARDENIA-ROOT DISEASE.*

This disease is occasioned by Heterodera radicicola, a small worm belonging to the order of the Nematoids, and is also related to the Heterodera Schachtii, Schmidt, the much dreaded Beetroot parasite. Other and more generally known allies are Anguillula devastatrix, the wide-spread plant-destroyer from our fields and gardens, and Anguillula aceti, from the vinegar-bottle of our dinner-table.

A great number of plants are affected by the same worm which affects the Gardenia roots, and the morbid condition caused by the worm is curiously similar in widely different plants. The occurrence of Heterodera radicicola has been observed by myself and others (especially Licopoli, Frank, and Carl Müller) in the following plants:—

Monocotyledons.—Poa annua, P. pratensis, Elymus arenarius, Triticum repens, Saccharum officinale, Musa rosacea, M. dacca, Phœnix dactylifera, and Chamærops humilis.†

Dicotyledons.—Clematis vitalba, Berberis vulgaris, Balsamina hortensis, Vitis Labrusca, Cistus aconitifolia, Euphorbia cyparissias (?), Daucus Carota, Angelica sylvestris, A. archangelica, Carum carui, Sempervivum tectorum, S. glaucum, Sedum reflexum, Onobrychis sativa, Ornithopus sativus, Trifolium incarnatum, T. pratense, Medicago sativa, Erythrina crista-galli, Dodartia orientalis, Coffea arabica, Ixora aurea, I. flammea, I. crocea (Hamiltonia spectabilis), Dipsacus fullonum (?), Plantago lanceolata, Cucumis sativus, Taraxacum officinale, Lactuca sativa, Cichorium Intybus, Cirsium arvense, Sonchus macrophyllus; and probably the same parasite occurs in many other plants, especially in hothouses.

* References may be made to Carl Müller, *Neue Helminthocecidie und deren Erzeugung*, Berlin, 1883; to Frank, *Ueber das Wurzel Aelchen*, &c., *Berichte d. Deutsche Bot. Gesellschaft*, bd. 2, p. 145, 1884; and to Carl Müller, *Bemerkungen zu meiner* (dissertation, &c.), *Berichte d. Deutsche Bot. Ges.*, bd. 2, p. 221, 1884.

† Treub considers the Heterodera of Saccharum officinale as a new species, called by him Heterodera javanica (*Ann. d. Jard. Bot. d. Buitenzorg*, vol. vi., p. 4, 1886), but this assumption is based only on the microscopic measurement of his material in comparison with the numbers given by C. Müeller for the H. radicicola. My own numbers regarding the last species are much nearer to those found by Treub than to those of Müller.

It may be seen from our fig. 93 that the effect of the parasitic worm on the Gardenia roots—and so it is in other plants—consists in a remarkable and very irregular hypertrophy or tumour of the root-tissues, which runs either along the full length of the root or is localised in small circumscribed places in this organ, in which last case the

Fig. 93.—Diseased roots of Gardenia.

deformed roots assume an aspect reminding one of the normally moniliform root of Spiræa filipendula. The whole structure belongs to the endlessly varied gall productions, and it is certainly a very interesting specimen of this group of physiological alterations of the common mode of growth.

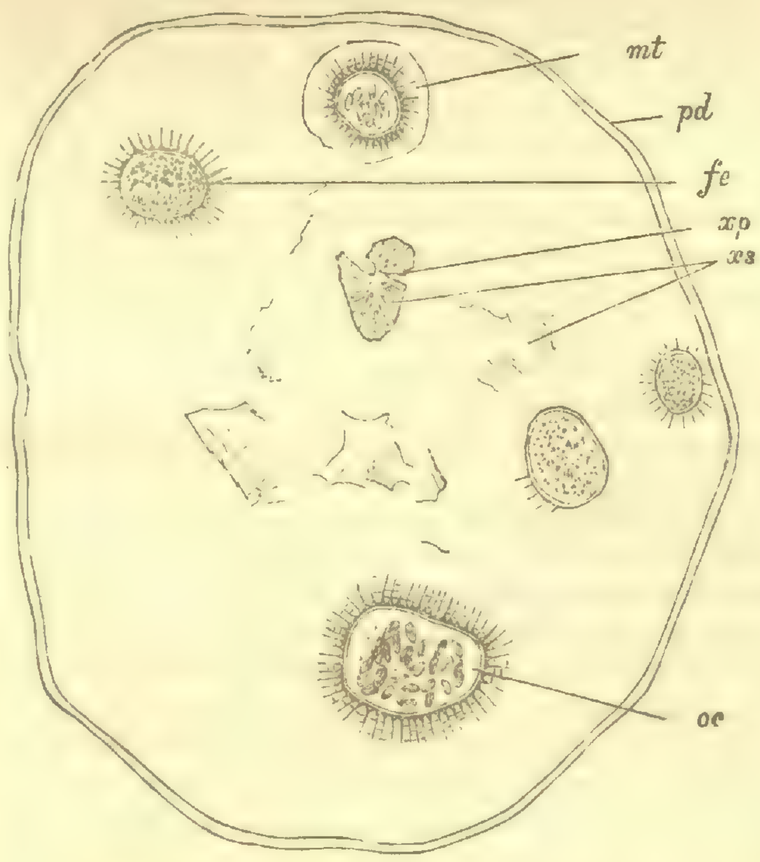


Fig. 94.—Disease of Gardenia roots.

By making with a razor a thin transverse section of a thickened root, and submitting it to microscopical examination, there is revealed without difficulty, and by the relatively small magnification of from 50 to 200 diameters, a very curious sight. There we see, as shown in fig. 94, that a great number of small spherical or somewhat irregular cavities are disseminated through the morbid tissues of the root. The contents enclosed in these cavities are very different, according to their age, and in one and the same microscopic preparation there may be found in some of these cavities (the youngest) a protoplasmic mass with minute oil drops, in others a great number of eggs, with or without young worms fully developed; and, in the oldest, a considerable number of these little worms, hatched from their eggs, and in active movement. All this will at once be understood when it is known that every single cavity is filled with, or rather consists of, a so-called ova-cyst, that is, the strongly swollen portion of the body of a viviparous maternal animal (see fig. 96 *i*) filled with eggs, in different gradations of development.

Before entering on the details of the bodily structure of the animal itself I must direct further attention to fig. 94 and fig. 95, showing sections of a hypertrophied root. The roots from which these preparations were taken were rather old, and their primary structure was altered by secondary or cambial growth. Now, it is a remarkable fact that the wood which is the product of this growth never acquires, under the influence of the parasitic cysts, the hardness and consistency of the normal secondary wood, as found in healthy roots, but remains from the time of its birth by the division of the cambium cells until the moment of its premature death, in a parenchymatous, soft and sap-filled condition. In other cases of pathological alterations of plants similar observations may be made; for example, in the reproduction of a morbid parenchyma, instead of hardwood, in the case of the gum disease of certain trees,* and just in the same masses as these may be found in the last case fully normal wood proceeding from the unaffected cambium; so we see by the transverse sections of the Gardenia roots affected with Heterodera insular masses (fig. 94 *xp*) of a woody structure identical with the wood of the healthy root, tracing their origin from mother-cells lying far distant from the parasitic cysts.

After this short description of the altered organ of the plant, let us now return to the zoological side of the question.

It is said above that the cysts are nothing else but the overgrown posterior part of the body of the females, completely filled with eggs. These eggs hatch in the mother-womb, and the young worms of the new generation find their way to the outer world by boring a hole through their dead mother's body. The life-history of these little animals is not fully cleared up; it seems that they live in the damp soil surrounding the roots, as dormant animals, till their reproductive organs begin to develope, and that the moment of their invasion of the roots coincides with their accelerated growth, which neccessitates a better supply of food. From the observation of Carl Müller it appears that the process of copulation and fertilisation, which have not yet been directly seen, must take place in the inner parts of the root itself; but, to my mind, this part of the question is still very obscure. New observations in this direction would be of great value, as well for the natural history of the Nematodes in general as for the pathology of the worm disease in particular.

By preparing the young worms from the eggs which are to be found in such great numbers in the ova-cysts, we find that the just-hatching animals must be of different length and girth (fig. 96, *c*, *d*, *e*). The meaning of this difference is not yet cleared up, and it seems possible that it may bear upon the several differentiations which, if we may trust the observations of C. Müller, become somewhat later very great, as illustrated in our fig. 96, in *f*, *g*, *h*, *i*.

The following references apply to the above woodcuts:—Fig. 93, Diseased root of Gardenia, real size. Fig. 94, Transverse section of diseased Gardenia root, with immature cysts *f e*, and mature cysts *o c*, with eggs, in which the young worms are coiled up; *m t*, characteristic morbid tissue; *x p*, primary, *x s*, secondary wood; *p d*, periderm, × 50. Fig. 95, Longitudinal section, references as before. Fig 96, *a*, egg; *b*, egg with young worm; *c*, *d*, *e*, worms of various lengths, all × 180; *f*, adult male worm, after C. Müller, × 75; *g*, male cyst, after Müller; *h*, young, and, *i*, adult female cysts, with eggs, × 75, after Müller. *M. W. Beijerinck.*

[Dr. Beijerinck's drawings have been slightly reduced. For other references to the observations of Berkeley, W. G. Smith, and Michael on the Cucumber root worms, see *Gardeners' Chronicle*, 1855, p. 220; xv. (1881), p. 331; xvi. (1881), p .721; xxv. (1886), p. 500; xxvi. (1886), p. 172, and in Orchid leaves (1886), p. 41. Ed.]

* I recently saw this fact with unrivalled clearness in a specimen of Theobroma Cacoa of Surinam, for which I am indebted to Professor Suringar, of Leyden. Here, as formerly described in these columns for the first time, a parasitic fungus was the distinct cause of the gummosis.

Fruits Under Glass.

MELONS.

The stopping, thinning, and tying of the shoots to the trellis must be attended to daily, for if neglected for only a few days the shoots will become overcrowded, and the vigour of the plant retarded to the injury of the fruit. Plants now swelling off their fruit will, where the bottom-heat is supplied by hot-water pipes, require frequent supplies of tepid liquid-manure at the roots. There should not be any surface-waterings, but a thorough soaking should be given when necessary, allowing the soil to get moderately dry before again watering, and keeping it away from the stems or collars of the plants in doing so. Moreover, if the roots of the plants are growing in a rather confined space—such, for instance, as pots, boxes, or narrow shallow borders, well drained—applications of warm diluted liquid-manure will be required more frequently at the roots than would otherwise be necessary. Ventilate in accordance with the state of the weather, admitting a little air on bright mornings when the thermometer indicates 80°, shutting it off in the afternoon at 90°, with plenty of atmospheric moisture in the house, and run up to 95°, which will be none too high a temperature for houses or pits in which the fruits are swelling. Those plants should have the supports put under their fruit. These supports can be easily made of an ordinary piece of board of deal or Lime, 6 or 7 inches square and half an inch thick, suspended by four pieces of string from the trellis, and in a sloping position, to prevent the lodgment of water; or a piece of garden netting, or two broad bands of matting tied crosswise may be substituted for the boards. See that successional plantings receive due attention, that a drier and airier atmosphere is maintained where the plants are in flower, until they have set their fruit, which process should be assisted by impregnating the larger blossoms daily with the smaller ones when the pollen is dry. Select from three to six of the best placed and most even-sized fruits. As the roots push through the hillocks add some more soil of about the same temperature as that in which the plants are growing. Make successional sowings and plantings at intervals of about three weeks during the next three months.

Frames.

Plants growing in frames on hotbeds which have been treated during the interval as recommended at p. 322, will by this time have set their fruits. These, when they have attained to the size of a bantam's egg, should be elevated above the foliage on small flower-pots. The shoots should be kept well thinned to prevent crowding. These plants will not require water being given at the roots more than once or twice, but they should be damped overhead with tepid water at shutting-up time (a little before 3 o'clock) on bright afternoons. The frames should be covered with mats and Fern at night, and the linings should be kept well up to the top of the frame, more with a view to keeping cold out than imparting heat to the interior of the bed. *H. W. Ward, Longford Castle.*

Forestry.

DRAINAGE, &c.

The mouths of closed drains should be looked to at least once a week, and any accumulations cleared away. Iron gratings are of much value when placed on the mouths of closed drains by preventing rubbish from finding its way into the drain. Where these are not provided a few Larch stakes driven into the bottom of the ditch, across the current, and within 2 inches of each other, will serve a similar purpose. A light "drag" with a rather long handle is the best implement I know of for removing obstructions in drains. Gratings alongside roads are apt to get choked up with sand and leaves during storms.

Fencing.

Tree guards in fields where horses are allowed to roam should be maintained in a perfectly efficient state to prevent damage being done to the trees. The cheapest and simplest tree guard we know of is formed by nailing Larch posts or rails of 8 feet in height, and within 6 inches of each other, on two

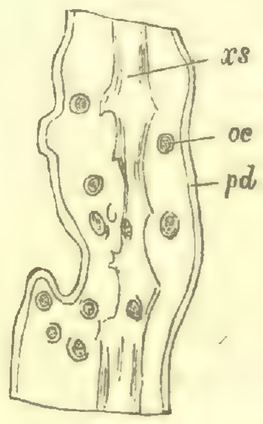


Fig. 95.—Disease of Gardenia Roots.

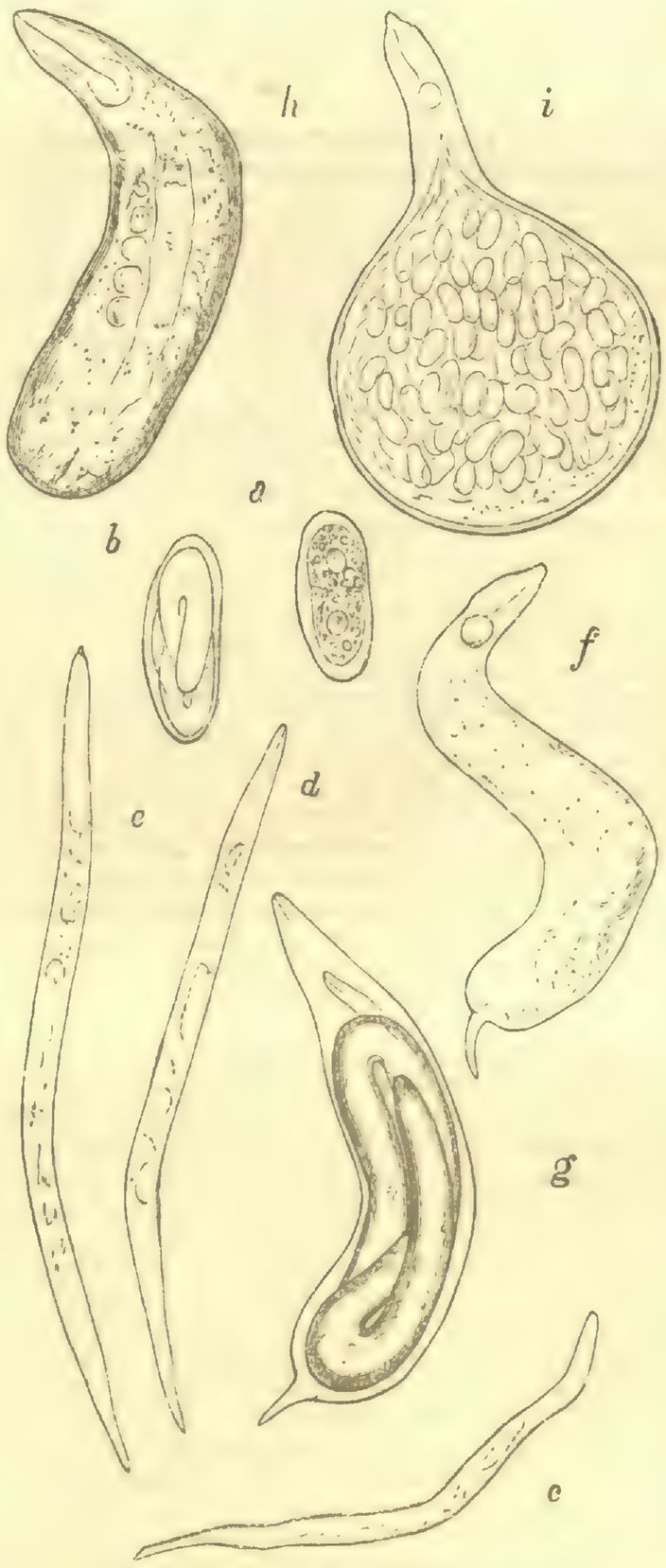


Fig. 96.—Disease of Gardenia Roots.

wooden or iron hoops, which should encircle the stem at 2 feet and at 6 feet from the ground. These are readily formed, cost but little, and when properly made are not unsightly.

Specimen trees generally must be kept from the attacks of game, and for those with bare stems for 3 or 4 feet in length we find nothing to equal a piece of Oak, Elm, or Larch bark placed around the stem and held in position by a couple of wires. It looks neat and natural, and serves the purpose better than anything else I know of. Rabbit-proof nettings will require examination, as rabbits will endeavour to burrow underneath the fence. Woodland fences should be repaired when needed to prevent the ingress of farm stock.

Hedging.

This work should be pushed on, for in a few days, should warm weather set in, growth will commence, and hedge-trimming for the season will then be at an end. Gaps in live fences may still be made up with stout Quicks, Hornbeam, or Beech, but this work would have been all the better if performed three months ago. Where mending has to be done, substitute fresh loam for the worn-out soil in which the Quicks were growing, and be careful not to injure overmuch the roots of the plants at the sides when making the holes for the new plants. A reserve of strong, bushy plants should be kept in the nursery for gap-filling.

Roads and Walks.

The present is a good time to make new or renovate old roads. Pick well the surface of the road before putting on fresh metalling, thereby causing the stones to bind quickly. After spreading the road metal, pass a heavy roller over the road to make a smooth, even surface. Paths will likewise require an occasional inspection, the state of the drainage and general cleanliness being attended to. Cut back from the sides of walks or paths all overhanging branches. Finely sifted coal-ashes make a capital woodland walk, being at all times dry, comfortable, and requires but little looking after, as weeds fail to grow on a walk that is formed of such material. The verges of drives, roads, and walks, may now be put in order. *A. D. Webster, Penrhyn Castle.*

The Orchid Houses.

CATTLEYAS.

As Cattleya Trianæ gets out of flower it should be put in order for the growing season. If the pots were nearly filled with crocks when last potted, the whole of the old peat and sphagnum can be removed without much trouble from the roots of those that are safe to stay in their pots another season. This work will afford a good opportunity to examine the rhizome and clean away any white-scale that is hidden about it, for if this insect is not dislodged from these parts of the plant it will be a source of trouble during summer by spreading over the pseudo-bulbs and leaves. If Cattleyas become infested with this scale they always suffer in health, the parasites draining the sap from the growth-buds until these become quite black. For cleaning purposes there is nothing better than a toothbrush and clean water. Cattleya Eldorado that may be now growing, should be put in a warm moist corner and rather near the roof-glass, using a very light shading when necessary, and cover the stage under the plants with some material that can be kept constantly moistened.

Lycastes.

When these Orchids cease to flower they are generally starting new growth, and should therefore be at once potted if that be necessary. This should be done lightly. A very good compost consists of fibrous peat, sphagnum, a few lumps of light loam, and a good sprinkling of half-decayed Oak leaves that have been broken rather small; the pots should be half filled with crocks for drainage. The cleaning of these plants should be well attended to, or the foliage will soon appear unhealthy; in addition to brown-scale the under side of the leaves are subject to attacks of red-spider. This insect is so small that it is often overlooked by beginners in Orchid growing. Cymbidiums are often disfigured by this spider.

Miscellaneous Plants.

Anguloas, if not already done, can be potted or top-dressed, the same kind of compost being

employed as that recommended for Lycastes. I think those which require repotting should be placed in an intermediate-house for a time, but as the weather becomes warmer it will be found that a cool house will grow them best. Dendrobium Falconeri should be watered lightly overhead morning and evening, using a fine rose pot for the purpose. Keep the heat turned off from the cool houses if the inside temperature does not fall lower than 50°, but a little should be turned on during the night, so as to guard against frost. The tobacco-vapour process should prove a great boon to Orchid growers, destroying the insects without injury to the plants. *C. Woolford, Downside, Leatherhead.*

HOME CORRESPONDENCE.

A GARDENERS' BENEFIT SOCIETY.—The suggestions that are being made in the *Gardeners' Chronicle* and also in the columns of some of your contemporaries as to the necessity that exists for the formation of a Gardeners' Benefit Society, are my justification for calling the attention of the gardening fraternity to the fact that such a Benefit Society already exists, and so prosperous is it, and so well managed, as to deserve the support of any anxious to avail themselves of the advantage offered by a society of such a character. The United Horticultural Provident and Benefit Society, was founded about 1866, and it was established by gardeners, and it has ever since been managed by gardeners for the benefit of those of the craft who are desirous of making provision for old age, and such accidents or calamities as may overtake them. "It is a benefit society and a savings bank combined, the payments not being more than those required by the ordinary benefit societies whose members have no claim on the surplus funds. The overplus of the funds is equitably divided amongst the members yearly, and invested for them in the Bank of England. Each member has a separate account, the accumulated fund, with all interest accruing, being payable on the death of a member to his nominee, or it can be drawn by himself at the age of seventy years. Some of the earlier members of the Society have at the present time sums accumulating to between £40 and £50 credited to them on the books of the Society, and when such a sum is reached, the yearly interest accruing nearly amounts to the yearly payments required from each member. This is submitted as a point of the greatest importance, for it means—and the matter is commended to the attention of young gardeners—that in the course of time, nearly or quite all the sums paid as contributions, will be added to the members' deposit account, the interest meeting all liabilities that entitle such members to all the benefits of the Society. There are two classes of members. The payment of 6*d.* per week, or 26*s.* per year, insures 10*s.* 6*d.* weekly in case of sickness; 9*d.* weekly, or 36*s.* a year, insures 16*s.* weekly. Members contributing 26*s.* yearly to the sick fund pay 2*s.* annually to the benefit fund; those paying 36*s.* yearly contribute 3*s.* annually to the above fund; and all pay 2*s.* 6*d.* annually to the management fund. These are the whole of the liabilities; and it may be stated, as showing the very light nature generally of the demands on members, that the payments to sick members generally during the financial year ending December 31 last amounted to £17 17*s.*, this being met by deducting only 1*s.* 8*d.* from those members who contribute 26*s.* a year, thus leaving £1 4*s.* 4*d.* of their subscription to be added to their deposit account. When a member is wholly unable by sickness to follow his employment he is entitled to full sick pay; but it is not necessary that he refrain from all work, when able to do a little, to entitle him to a proportion of sick pay. Gardeners in private situations will perceive the value of that provision, both to the members and the Society. The benevolent fund is established to enable the committee to grant extra allowances, beyond sick pay, where additional assistance is needed, as, for instance, to meet heavy doctor's bills, accidents, and unforeseen calamities. The qualification for membership requires that the member shall be over eighteen and not above forty-five years of age, and that he has worked not less than three years in a garden. Mr. William H. Heale, the first secretary to the Society, and now the manager of the King's Acre Nurseries, Hereford, writing to me a few weeks since remarked in reference to this Society, "I have been a member for twenty-one years, my contribution of 9*d.* per week amounting in round numbers to £41, and yet the balance standing in the books of the Society to my credit is about £50, so that after paying my share yearly of sick pay, I have £9 added as interest to my capital, and this is yearly increasing. What other society can show a balance-sheet like this? Urge all gardeners and nurserymen to join." The working expenses of the Society are very low indeed. It is managed by a committee of gardeners, a portion of whom retire annually. The Society is enrolled under the Friendly Societies Act, and the sum of £3650 is invested in Consols, the property of the members. I may add that the Secretary is Mr. W. Collins, The Gardens, Chevos House, Poynder's Road, Clapham Park; and the Treasurer is Mr. J. Hudson, The Gardens, Gunnersbury House, Acton, W. *R. Dean, Ealing, W.*

HUGE CINERARIAS.—Your correspondent, Mr. Hussey, p. 423, does not mention the size of pots his plants are grown in. We have some here flowering at the present time that are growing in 5 and 6-inch pots, and which measure 6 and 6½ feet round the head of flower. The seeds of these plants were sown about May 26 last, and had no manure-water given them till they showed signs of flowering. *T. H., Holmwood Park Gardens, Tunbridge Wells.*

BLIGHTED LEAVES AND FLOWERS OF NARCISSUS TRIANDRUS VAR. PULCHELLUS.—These are affected by a blight I never noticed before. The dozen bulbs came last autumn from a garden in North Wales, where they have grown for many years. The specimens sent have been grown in a greenhouse, but some of the same lot planted in the open ground are showing signs of the same, which must therefore have come with the bulb. The pot which contained the enclosed is the only one so affected out of thirty or forty containing Narcissus amongst which it stood. Can you kindly get it reported on? *C. Wolley Dod.* [The case cited by Mr. Dod is a remarkable one, and from the evidence he adduces the disease seems, as he says, to be derived from the bulb. In the examples sent the flower-stems and leaves have very extensive dark brown, almost jet-black patches, and these patches have a tendency to become hard and brittle. The disease strongly resembles externally the "fire-blight" of American Pear trees or the "anthracnose" of Vines. The microscope reveals nothing in Mr. Dod's examples, but further investigation might possibly lead to the detection of micrococci. The Amaryllidaceæ are free from the attacks of parasitic fungi, and, as far as we know, none of the numerous fungi peculiar to the Liliaceæ have ever been known to stray on to the Amaryllidaceæ. A note as to the condition of the bulbs of the blighted plants would be instructive. *W. G. S.*]

WHITE TRUMPET DAFFODILS.—As the season has again come when we can make progress with the classification and arrangement of our white Daffodils, I should like to ask all growers of them, and especially Irish growers, who have old gardens in which they are established, and who may not previously have paid any very special attention to them, to notice his blooms very carefully, and to note down any particulars in which they appear to differ from the ordinary form of Cernuus. We have talked a good deal about a trial of white Daffodils, which no doubt will be a very excellent thing when we are ready for it. I have collected all possible materials to ensure its being as successful and as complete as possible. "*Eile mit weile*" is a safe rule, and one which in this case we must follow, if we do not wish to be obliged to undo each year the work of the preceding. I specially ask Irish gardeners to notice their white Daffodils, because several beautiful forms which appear to have become extinct in, or may never have existed in English gardens, have been found established in old Irish gardens, and I believe that there are still forms which have not yet come into the possession of those who have made a specialty of this section. Although I make this request specially to Irish growers, I by no means limit it to them. I have had several good white Daffodils sent to me from gardens in different English counties, and I have no doubt but that they are to be found in old English gardens as well as in Irish ones. If the owners of any forms which appear to them distinct would be kind enough to forward blooms of them to the Narcissus Committee, which meets on April 12, 26, and May 10, they will confer a favour on all who are specially interested in these very beautiful flowers; or if they prefer to send blooms to me I shall be glad to receive them, and will let the senders know whether they are forms which we already have or not, and whether they are worth sending on to the Committee. Differences might be looked for in the following particulars:—Flowers either unusually large or small, very wide or very narrow trumpets; perianth longer than the trumpet, or much shorter; perianth divisions very broad or very narrow. *H. M. White, Charleville, Roscrea.*

PARASITIC FUNGI OF TOBACCO PLANTS.—In the *Gardeners' Chronicle* for February 8, 1887, p. 50, I warned growers of Tobacco against the possible attack of the Potato fungus, Peronospora infestans, as this parasite has been recorded on the Nicotianeæ. Prof. W. G. Farlow now records the presence of another species of Peronospora, viz., P hyoscyami on Nicotiana glauca at San Diego, and fears are entertained that the latter parasite may extend to the cultivated Tobacco of Virginia. It is quite possible therefore that cultivated Tobacco in this country may be attacked by both the above named species of Peronospona. Peronospora hyoscyami is British, and was illustrated and described in the *Gardeners' Chronicle* for February 7, 1885, p. 176. *W. G. S.*

MORE GARDENERS THAN GARDENS.—A writer in a contemporary lately stated that he treated his young men to an all-round training in the garden, and remarked that gardening is fast becoming a question of pounds, shillings and pence, and the man that perseveres and obtains the greatest amount of knowledge of his calling is the one who is most likely to get to the top in the profession. On this question of young gardeners the idea has often occurred to me, that the principal gardens (training schools) in this country are worked by too many journeymen aspiring to become head gardeners themselves, and by this means the market has become overstocked. Gardens where only five or six men are kept, have, as a rule, two, and sometimes three, young men working up for head places, to say nothing of the numbers in larger establishments. Through the competition thus engendered the wage of gardeners is cut down, and good men are obliged to take places much below their merit, rather than drag out a miserable existence waiting for something better to turn up. Could not my brother gardeners themselves do much to stop this gardener-making? Mainly this might be done by working the gardens in their charge with intelligent labourers of the district, and young men not aspiring to become head gardeners. Let the journeymen have an all-round training, but let there be fewer of them. There is no necessity to draw so many young men into the profession as is done at the present time, and who after years of hard work and study find so little chance of procuring such a position as their abilities and character entitle them to. I am aware there are many ways of looking at this suggestion for and against, according to circumstances, and my desire at the present time is to point out to head gardeners the importance of this subject, so that means may be found to check the growing evil. By employing labourers skilled in most kinds of garden work a number of capable men acquainted with the master's methods of work would be created in most establishments, taking the places formerly filled by journeymen, and much of the inconvenience of constant changes would be averted. When one turns to the advertising columns of the horticultural papers and sees the numbers who advertise for places, and compares these with the number of vacancies notified, it would seem to be time that the attention of our craftsmen should be drawn to the matter. *W. Watson, Eaglehurst, Fawley.*

THE HARDY FRUIT GARDEN.

STRAWBERRIES FOR AUTUMN FRUITING.

A good variety to use for this purpose is the Vicomtesse Héricart de Thury, plants of which, after having been fruited under glass, may be gradually hardened off in a cold frame, and afterwards planted out on a warm border, previously prepared by the ground being well manured and trenched. After planting a good mulching of long stable litter should be applied, and should the weather be dry an occa-

sional watering will be necessary until they become established. From these plants there can be gathered a good supply of fruit for the dessert in the month of October. To lengthen out the supply plants can be grown in frames or cold pits, but where such means do not exist old lights placed over the earliest varieties will greatly assist in bringing on early fruit.

General Work.

Still continue to push on with the grafting, and so have all finished as early as possible, also attend to the clay on the early grafted scions, occasionally damping it, and renewing the moss when found to be necessary. The stock of netting should be examined in bad weather, and where found requisite, should be repaired with fine twine, and notes taken of further requirements, so as to have all in readiness at an early date. *E. Ward, Hewell Gardens, Bromsgrove.*

SOCIETIES.

TORQUAY HORTICULTURAL.

The spring exhibition of this Society was held on March 31 in the Bath Saloons. The various classes were generally well contested, and the exhibits in most classes, especially the Hyacinths, were superior in quality to those of former years.

For six stove and greenhouse plants Mr. H. Yelland, gr. to Miss Loch, Villa Como, was 1st, with two fine specimen Azaleas, Prince Albert and Reine des Doubles, a huge Begonia miniata, and other good plants.

In a class for three plants ditto, Mr. H. Yelland, who had a magnificent Azalea Stella and a large well-flowered Chorozema, was 1st, and was followed by Mr. A. Watson, gr. to H. W. C. Tweddle, Esq., whose collection included a splendid Phaius grandiflora with from twenty to thirty grand spikes of flower.

Mr. F. Ferris, gr. to J. W. Kimber, Esq., was the most successful exhibitor of three Primulas, doubles, distinct, taking the 1st prize here, and also for six singles, with, perhaps, the finest and best flowered plants that have ever been exhibited at this Society's show.

Polyanthus Narcissi, and Tulips were very well shown, Mr. H. Yelland carrying off the leading honours in both classes, while Mr. Ferris was 2d. This exhibitor was 1st in another class for Tulips, showing very fine flowers.

For nine Cinerarias, distinct, Mr. J. Hunt and Mr. F. Ferris took prizes in the order of their names. both the collections comprising remarkably well bloomed plants with large flowers. The 1st prize lot contained very distinct and beautiful colours. Mr. Hunt also staged the best six.

The class for twelve Hyacinths brought a strong competition, all the exhibitors showing unusually fine blooms. The 1st prize fell to Mr. J. Slowman, gr. to Captain Fane Tucker, whose blooms were conspicuous above the others for size and compactness, and well deserved the award.

Three Orchids.—1st, Mr. Geo. Lee, gr. to W. Lavers, Esq., who exhibited a fine plant of Lycaste Skinneri, Cattleya Harrisoni, and Dendrobium nobile; 2d, Mr. Medland, with Cymbidum eburneum, Dendrobium Dalhousieanum, and Odontoglossum Halli.

Mr. Yelland and Mr. Tucker were respectively 1st and 2d for a specimen Azalea, and they also took the leading prizes in the classes for a collection, Mr. Yelland showing the best six, and Mr. Tucker the finest three. The latter also had the 1st prize for Cyclamens and for Camellias. Deutsias were best represented by Mr. Yelland, who had plants 4 feet through, a mass of bloom.

The best lot of Lily of the Valley came from Mr. Ferris; and Mr Cole staged the best Ferns and Spiræas.

Vegetables were extensively represented, Mr. Kent having the finest collection.

Special Prizes.

For the best arranged group of plants, flowering, foliage, and Ferns, to occupy a space 10 feet by 6 feet. Prizes offered by Col. H. St. George Tucker, C.B.—1st, Mr. Slowman, who included in his collection Roses, Hyacinths, Tulips, Orchids, Azaleas, Ixias, Palms, Crotons, Ferns, which were tastefully set up.

Best six Cinerarias (Smale's Superb), prizes offered by Mr. W. B. Smale, The Central Horticultural Depot. Torquay—Mr. J. Hunt and Mr. Yelland, each showing splendidly grown and flowered plants, receiving prizes in the above order.

Messrs. Curtis, Sandford & Co., of Torquay, offered prizes for twelve cut Roses, not more than two blooms of one variety, and here Mr. Cole secured 1st with good blooms well set up.

The prizes offered by Messrs. R. Veitch & Son, Royal Nurseries, Exeter, for twelve Hyacinths, grown from their own bulbs, brought out the finest specimen in the whole exhibition. The same exhibitors as were awarded the prizes in the Society's competition were also successful here, retaining the same order, viz., 1st, Mr. Slowman; and 2d (good), Mr. F. Ferris.

The competitors' classes were supplemented by several fine private collections. Moreton Sparks, Esq., staged a fine lot of plants, principally Orchids, having a goodly number of Odontoglossums and Dendrobiums; also Lycaste and Cymbidium.

A nice collection, also principally Orchids, came from W. Lavers, Esq., who had Lælias, Lycastes, Odontoglossums, &c., with Palms and Ferns interspersed.

Mr. R. W. Beachey, Fluder Nursery, Kingskerswell, staged boxes of Violets in great variety, Polyanthuses, Narcissi, &c.

Messrs. Veitch & Son, Exeter, made a special display of Narcissus. being a fair representative group of the best varieties. These were backed by a fine lot of the Japanese Maple, which made a fine effect, the same firm sent also a variety of Orchids, Ferns, Palms, &c., with many choice and seasonable flowers.

Mr. W. B. Smale, Barton Nursery, Messrs. Philips & Co., Messrs. Horn & Sons, Mr. Mitchell, all of Torquay; and Mr. Burridge, Paignton, sent splendid collections of flowering plants suitable for decorative purposes.

Messrs. Curtis, Sandford & Co. contributed a fine collection of miscellaneous flowering plants, &c., as also some splendid boxes of Maréchal Niel Roses and others. *A Correspondent.*

ORCHID NOTES AND GLEANINGS.

DENDROBIUM MICANS ×.

This beautiful hybrid between D. lituiflorum and D. Wardianum is in flower at Messrs. James Veitch & Son, Royal Exotic Nursery. Its flowers are as large as an ordinary D. Wardianum, the sepals and petals pure white, suffused with bluish-lilac; the labellum is white, with dark crimson throat and well defined front portion tinged with the same pleasing hue as the petals—a colour in which blue and rose seem to blend and produce a tint unlike the colour of any other Dendrobe. D. micans is a free grower, profuse flowerer, and altogether a gem of the first water.

Phalænopsis ×.

A new hybrid, an interesting cross between P. Schilleriana and P. amabilis. has just opened its flowers in Messrs. Jas. Veitch and Son's nursery. As was anticipated, it gives much the same colouring as P. Stuartiana in flower and leaf, but in Mr. Seden's hybrid the lip is very distinct from that of P. Stuartiana, its labellum almost entirely corresponding with that of P. amabilis, its side lobes being broad and rounded, and the middle one wide and angular in the upper portion, as in P. amabilis.

Masdevallia Chelsoni splendida.

A very brilliant thing. The beautiful Chysis Chelsoni and other fine hybrid Orchids are also in flower in the Royal Exotic Nursery, where a great profusion of flowers will be found in all the Orchid-houses. *J. O'B.*

Cattleya Skinneri.

This beautiful Orchid is now in bloom in the stove here. The plant has nine pseudobulbs, five of which bear seven flowers each, making it very attractive with its elegant dark rose-coloured flowers. This lovely plant can be easily grown in any ordinary stove by affording a little extra attention in placing it where it gets light and free admission of air on all fine days, and is near the glass. During the sunny part of the day in summer time the plant requires to be shaded with some thin material. Cattleya Skinneri is much benefited, after having flowered, by being placed in a structure where an increased amount of air and moisture can be given it until the growths are completed. *Wm. Smythe, Basing Park, Alton.*

MR. LOUIS DE SMET.

It may interest many readers of the *Gardeners' Chronicle* who had not the pleasure of the personal acquaintance of Mr. Louis De Smet, whose death was lately announced, to be made acquainted with some of the leading features in his career. He was one of the foremost of the men who, by their energy and perseverance, have contributed to make Ghent known far and wide as a centre of horticultural activity.

At an early age Mr. De Smet entered the establishment of Mr. Alexander Verschaffelt, at that time the most important in Ghent, and from there he passed to the world-famed nursery of Mr. Louis van Houtte, in which he occupied the leading position for sixteen years. Here Mr. De Smet was quite at home, proving himself a valued coadjutor to the renowned founder of the establishment, who, a genius of a high order, and an exceptionally good judge of men, found in Mr. De Smet a man after his own heart, passionately attached to his work, not content with victories achieved but ever planning fresh conquests, and, after the manner of men of this stamp, usually scoring fresh victories. In 1856 Mr. De Smet commenced business on his own account, immediately made his mark, and took his place in the front rank. He brought to bear his vast knowledge of plants and their habits, and made collections of many genera which in commercial gardening had received but scant attention. By thus going out of the beaten track he was largely instrumental in importing into horticultural pursuits fresh objects of interest, and may fairly be claimed to have been a pioneer in many paths, which, although now well-trodden, lay then entirely unexplored. From a business point of view the main points in Mr. De Smet's character may be said to have been energy, activity, and perseverance in an unusual degree, and to them may be added a downright passion for work which no exertion seemed to tire, and he upheld by precept and example the doctrine of the dignity of labour. Nothing pleased him more than to witness in others the characteristics so prominent in himself. He very soon perceived the advantage likely to accrue from becoming an exhibitor of rare and well cultivated plants, and with such ardour and success did he throw himself into it that the substantial signs of his prowess, which he leaves to his family in the collection of medals, if to be equalled in number or value, would not be readily surpassed. The salient features in the man's character seemed to have found embodiment in his face and figure—a frame spare, lithe, and active even to the last, eyes full of fire and intelligence, a voice clear and melodious, gave even to a stranger an indication of what manner of man he was. In private life he was loved to a degree, and those who knew him best regret him the most; and it will be long before the void made in the circle of his friends by his removal is filled, for, as Mr. Auguste van Geert well observed. Mr. De Smet will be wanted many a time. He lived an honourable life, rich in the esteem and respect of his friends, and he had also the high satisfaction of knowing that his efforts to advance an interest of great commercial importance to the town in which he lived had been appreciated in the highest quarters, as was evidenced by the bestowal by the King of the Cross of Chevalier of the Order of Leopold. A very large concourse composed both of townsmen and strangers, assembled to pay the last tribute of respect to one who had so long and so valiantly fought life's battle, and addresses full of sympathy and appreciation were delivered by Mons. le Comte de Kerchove de Denterghem, Mr. Auguste van Geert, and Mr. Louis van Houtte, and others.

THE WEATHER.

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 42° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature.				
		Accumulated.			
	Above or below the Mean for the week ending April 4.	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 4, 1887.	Below 42° difference from Mean since Jan. 4, 1887.
Principal Wheat-producing Districts.		Day-deg.	Day-deg.	Day-deg.	Day-deg.
0. Scotland, N. ...	1 above	15	18	+ 39	− 19
1. Scotland, E. ...	3 above	33	11	+ 49	− 9
2. England, N.E. ...	1 above	32	12	+ 16	+ 51
3. England, E. ...	1 below	35	19	− 58	+ 139
4. Midland Cos. ...	1 below	37	19	− 39	+ 121
5. England, S. ...	2 below	37	18	− 54	+ 124
Principal Grazing, &c., Districts.					
6. Scotland, W. ...	1 above	28	11	+ 2	+ 8
7. England, N.W. ...	2 below	23	11	− 28	+ 93
8. England, S.W. ...	2 below	38	16	+ 71	+ 138
9. Ireland, N. ...	1 above	34	6	− 23	− 7
10. Ireland, S. ...	0 (aver.)	38	10	− 12	+ 51
— Channel Islands	1 below	30	1	− 108	+ 74

Districts.	Rainfall.			Bright Sunshine.	
	More or less than the Mean for the Week.	No. of Rainy Days since Jan. 4, 1887.	Total Fal since Jan. 4, 1887.	Percentage of possible duration for the Week.	Percentage of possible Duration since Jan, 4, 1887.
Principal Wheat-producing Districts.	Tenths of Inch.		Ins.		
0. Scotland, N. ...	2 more	60	12.1	14	21
1. Scotland, E. ...	2 less	43	5.4	27	32
2. England, N.E. ...	2 less	38	3.8	28	31
3. England, E. ...	0 (aver.)	33	3.7	33	34
4. Midland Cos. ...	2 less	35	4.2	20	27
5. England, S. ...	1 less	34	4.2	37	28
Principal Grazing, &c., Districts.					
6. Scotland, W. ...	3 less	47	9.8	36	26
7. England, N.W. ...	2 less	38	6.0	31	29
8. England, S.W. ...	5 less	38	5.5	48	36
9. Ireland, N. ...	1 less	47	7.3	28	27
10. Ireland, S. ...	5 less	40	7.7	42	34
— Channel Islands	4 less	42	4.5	62	43

THE PAST WEEK.

The following summary record of the weather for the week ending April 4, is furnished from the Meteorological Office:—

"The *weather* has remained in a changeable unsettled condition. At the commencement of the week fair dry weather was experienced generally, but on March 31 and April 1 squalls and showers of hail or sleet extended over the kingdom from the northward. At the close of the period some improvement was observed, but the sky remained cloudy, with rain over the more northern districts.

"The *temperature* has been a little above the mean in Scotland, England, N.E., and Ireland, N., and about equal to the normal in Ireland, S., but below it elsewhere. The highest of the maxima which were recorded on irregular dates, varied from 62° in the Midland Counties and Ireland, N., to 55° in Scotland, N., and England, N.W. The lowest of the minima which were recorded in most places either on the mornings of the 1st or 2nd, ranged from 26° in Scotland, N., and 27° in Scotland, E., and England, S.W., to 31° in England, E., England, S., and England, N.W.

"The *rainfall* has been less than the mean in all districts excepting 'Scotland, N.,' where it has been slightly in excess of the normal, and 'England, E.,' where the average has just been reached.

"*Bright sunshine* has been upon the whole much less prevalent than it was last week, the percentages of the possible amount of duration ranging from 14 in 'Scotland, N.' and 20 in the 'Midland Counties,' to 48 in 'England, S.W.' and 62 in the 'Channel Islands.'"

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING APRIL 9. (AVERAGE OF THIRTY-THREE YEARS.)

April 10	47°.3	April 14	47°.9
„ 11	47°.5	„ 15	48°.1
„ 12	47°.6	„ 16	48°.3
„ 13	47°.7	Mean for the week ...	47°.8

ENQUIRIES.

"He that questioneth much shall learn much."—Bacon.

The Latest Hardy Pears for Bushes in a Northern County.—Can any of our correspondents give "Kilternan Abbey" the names of two dessert Pears of high quality, very late (February to May), very hardy, good growers, and good bearers, suited for bush culture in the North of England or Ireland, in a windy exposed situation on freestone subsoil? Winter Nelis, Bergamot d'Esperen, Beurré Bosc, and Glout Morceau will not do.

NOTICES TO CORRESPONDENTS.

Intelligent Readers, do please Note *that letters relating to* Advertisements, *or to the supply of the Paper, should be addressed to the* Publisher, and that all communications intended for publication should be addressed to the Editor. Such communications should be *written on one side only of the paper*, and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Chinese Primrose: *W. F.* We are much obliged for your specimens, but we doubt if any true cross has been produced, even in the seedlings with the yellow eye. Still the thing is not impossible, and we recommend you to continue your experiments with the utmost care, so as to prevent mistakes.

Books: *Ignoramus. Plant Life*, or the articles in Cassell's *Popular Gardening*.

Cypripedium Lawrencianum: *E. M.* Thanks; the occurrence is not very unusual.

Cytissus: *Florist.* There is no work treating of the cultivation of this plant. Cuttings of half-ripened wood will strike easily if taken off with a slight heel, and inserted in well drained pots in sandy peat with an upper layer of sand, and placed in a cool, close propagating frame. Bottom-heat is better avoided. Pot off as soon as rooted, and get the plants well rooted before winter: therefore an early strike of cuttings is essential.

Eucharis: *J. E.* Yes, swarming with mites.

Frost and Shrubs: *E. J. Wilcox.* The 27° of frost which was experienced in your garden, have had an effect on the shrubs that has more the appearance of having been caused by fire. It was fortunate for the plants that a covering of 17 inches of snow lay on the ground, and so afforded protection to roots, &c.

Galanthus Bulbs Rotting: *I. J., Dersingham.* The bulbs forwarded to us are too advanced in putridity for an opinion as to the original cause of the decay. A great deal of the decay in bulbs is started by imperfect harvesting, packing, and by slight bruising. Bulbs are frequently sold in a slightly unsound state, and this bad condition increases when the bulbs are planted. Various fungi and minute insects rapidly accelerate the decay of slightly bruised or sweating bulbs. A fungus named Polyactis galanthina helps to rot bulbs of Galanthus, but this fungus has no power to start disease on sound bulbs. On referring to the indexes of past volumes of the *Gardeners' Chronicle* you will see several articles on the cause of decay in bulbs. The subject is a very extensive one. *W. G. S.*

Large Oak with a Covering of very strong Ivy, &c.: *E. A.* The Oak would perhaps suffer in health from the removal of the Ivy; the mischief is already done; *Horticultoral Buitding*, by F. A. Fawkes (London, Swan, Sonnenschein, Le Bas & Lowrey), will suit your requirements.

Malodorus Manure Water: *D.* You can do nothing to reduce the smell. Why not use the water for grassland, on compost heaps, and for kitchen garden crops; and use some good artificial manure for indoor plants?

Names of Plants: *J. W. B.* Magnolia acuminata, probably.—*R. M.* Epidendrum cucullatum; Dendrobium Wardianum—a fine, not extraordinary variety. Varieties of D. nobile: 7, a small light var.; 8 and 9, very good in colour; 9, approaching D. n. nobilius; 12, a pretty variegated variety, if constant. Thanks for the Phalænopsis. — *G. H.* Cedrus atlantica, both specimens.

Orchid Peat: *W. W. & Son.* The peat comes from a good source, and is well adapted for the purpose intended.

Skeleton Leaves: *C.* Apply to Mrs. Hodgkins, 5, Beaufort Avenue, Willington.

Vines: *A. B.* You need not be alarmed. The proliferous growth of the leaves is an indication of vigour from high feeding, but it is in this case in no sense a disease, and will do no harm.

CATALOGUES RECEIVED.

R. B. Laird & Sons, 17, South Frederick Street, Edinburgh, N.B.—Florists' Flowers and Greenhouse Plants.

Thibaut & Keteleer, Rue Houdan 107, Sceaux, Seine, France—Plants,

V. Lemoine, Rue de l'Étang, Nancy, France—General Plant List.

Schultheis Brothers, Steinfurth, near Bad Nauheim, Hessen, Germany—New Roses for 1887.

Rawlings Brothers, Old Church, Romford, Essex—Dahlias.

B. Field, Swan Place, Old Kent Road, S.E.—Horticultural Sundries.

R. W. Adlam, Maritzburg, Natal, South Africa—Bulbs, Orchids, &c.

Robertson Munro, Abercorn Nurseries, Edinburgh, N.B.—Alpine and Herbaceous Plants.

Communications Received.—H. Little.—E. J. L.—A. D.—J. D.—P. G.—J. A.—D. R.—T. H. Hewitt & Co.—T. Coomber—E. A.—Florist (next week).—J. S. J., British Guiana.—W. H. D. (next week).—Robertson Monro.—W. L.—F. Roemer, Quedlinburg (please send in German).—Jas. Veitch & Son.—L. L.

MARKETS.

COVENT GARDEN, April 6.

Market dull in view of the holidays. *James Webber, Wholesale Apple Market.*

Vegetables—Average Retail Prices.

	s. d. s. d.		s. d. s. d.
Artichokes, per doz...	6 0– ...	Lettuce, Cos., Fr., each	0 6– ...
Asparagus, French, per bundle... ...	4 0–12 0	Mushrooms, punnet	1 6– 2 0
— English, per 100	14 0– ...	Mustard and Cress, punnet	0 4– ...
Beans, Kidney, lb. ...	2 6– ...	Onions, per bushel ...	4 0– ...
Beet, red, per dozen	1 0– 2 0	Parsley, dozen bunch	8 0– ...
Brussels Sprouts, lb.	0 6– ...	Peas, per quart ...	6 0– ...
Carrots, per bunch...	0 6– ...	Potatos, per cwt. ...	4 0– 5 0
Cauliflowers, per dozen	3 0– ...	„ kidney, per cwt.	4 0– 5 0
Celery, per bundle ...	1 6– 2 0	Rhubarb, per bundle	0 6– ...
Cucumbers, each ...	0 6– 1 0	Seakale, per punnet	2 6– ...
Endive, per dozen ...	1 0– 2 0	Shallots, per lb. ...	0 3– ...
Green Mint, bunch...	0 9– ...	Spinach, per bushel...	5 0– ...
Herbs, per bunch ...	0 4– ...	Sprue, bundle ...	1 0– ...
Leeks, per bunch ...	0 3– ...	Tomatos, per lb. ...	4 0– ...
Lettuce, per dozen ...	1 6– 2 0	Turnips, new, bunch	1 6– ...

Potatos.—Markets very heavy, at the following prices:—Regents, 80s. to 100s.; Magnums, 70s. to 110s. per ton.

Fruit.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Apple, ½-sieve	1 6– 5 0	Pears, per dozen	2 0– 4 0
— Nova Scotia, brl.	8 0–12 0	Pine-apples, Eng., lb.	1 0– 1 6
Grapes, per lb.	3 0– 8 0	— St. Michael. each	1 6– 6 0
Kent Cobs, 100 lb.	60 0– ...	Strawberries, per lb.	4 0– 6 0
Lemons, per case	12 0–21 0		

Plants in Pots.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz.	6 0–18 0	Ferns, in variety, per dozen	4 0–18 0
Arum Lilies, dozen	18 0–24 0	Foliage plants, various, each	2 0–10 0
Azaleas, per dozen	24 0–42 0	Fuchsias, doz.	9 0–12 0
Cinerarias, per doz.	6 0– 9 0	Genistas, per doz.	10 0–12 0
Cyclamens, dozen	12 0–24 0	Hyacinths, 12 pots	6 0– 9 0
Cyperus, per dozen	4 0–12 0	Lily-of-Val., 12 pots	12 0–24 0
Daffodils, 12 pots	9 0–10 0	Marguerite Daisy, per dozen	6 0–12 0
Dracæna terminalis, per dozen	30 0–60 0	Mignonette, doz.	6 0– 9 0
— viridis, per doz.	12 0–24 0	Myrtles, per dozen	6 0–12 0
Erica hyemalis, per dozen	12 0–24 0	Palms, in var., each	2 6–21 0
— various, dozen	18 0–42 0	Pelargoniums, scarlet, per doz.	6 0– 9 0
Euonymus, in var., per dozen	6 0–18 0	Primula sinensis, doz.	4 0– 6 0
Evergreens, in var., per dozen	6 0–24 0	Solanums, per dozen	9 0–12 0
Fairy Roses, doz.	10 0–12 0	Spiræa, per dozen	12 0–18 0
Ficus elastica, each	1 6– 7 0	Tulips, 12 pots	6 0– 8 0

Cut Flowers.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Arum Lilies, 12 blms.	3 0– 5 0	Mignonette, 12 bun.	3 0– 6 0
Azaleas, 12 sprays	0 6– 0 9	Pelargoniums, scarlet, 12 sprays	0 9– 1 0
Bouvardias, per bun.	0 6– 1 0	Primroses, 12 bun.	0 8– 1 0
Camellias, 12 blooms	1 0– 3 0	Primulas, single, 12 bunches	4 0– 6 0
Carnations, 12 blms.	1 0– 3 0	— double, 12 sprays	0 9– 1 0
Cyclamen, 12 blooms	0 4– 0 9	Roses, Tea, per doz.	2 0– 4 0
Daffodils, single, 12 bunches	3 0– 6 0	— coloured, dozen.	3 0– 6 0
— double, 12 bun.	2 0– 4 0	— red, French, doz.	1 6– 2 0
Eucharis, per dozen	4 0– 6 0	— Saffrano, Fr. doz.	1 0– 1 6
Gardenias. 12 blooms	3 0– 6 0	Tropæolums, 12 bun.	1 0– 2 0
Heliotropes, 12 spr.	0 6– 1 0	Tuberoses, 12 blms.	2 6– 4 0
Jasmine, white, bun.	0 6– 0 9	Violets, 12 bunches	0 6– 1 0
Lilies of the Valley, 12 sprays	0 6– 1 6	— Parme, French, per bunch	2 0– 3 0
Marguerites, per 12 bunches	3 0– 6 0	— Czar, Fr., bunch	1 6– 2 0

**** *These prices may be higher for the Easter-time.*

SEEDS.

London: *April* 4.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., report a steady sowing demand for Clover and other farm seeds. Prices generally stand at a remarkably low level—a most welcome fact to buyers at this period of agricultural depression. Spring Tares are also cheaper than ever before known. The supply of Timothy is small. For perennial and Italian Rye-grasses last week's moderate currencies still prevail. Lucerne and Rape seed continue firm. Less money is accepted for Canary and Hemp seed. Rather more inquiry is shown for Blue Peas. The values now quoted on Mark Lane for Haricot Beans are unprecedentedly low. Increased attention is given to sowing Mustard seed.

CORN.

Averages.—Official statement showing the average price of British corn, imperial measure, in the week ended April 2:—Wheat, 33*s.* 3*d.*; Barley, 24*s.* 4*d.*; Oats, 16*s.* 1*d.* For the corresponding week in 1886:—Wheat, 30*s.* 6*d.*; Barley, 27*s.* 10*d.*; Oats, 19*s.* 4*d.*

POTATOS.

King's Cross: *April* 4.—Accompanying are the ruling prices in the station yard for the week ending April 2, viz.:—Magnum Bonums, good samples:—Bedfords, 70*s.* to 75*s.*; Blackland, 55*s.* to 60*s.*; Lincolns, 65*s.* to 70*s.*; Kents, 75*s.* to 80*s.*; Yorks, 87*s.* 6*d.* to 90*s.*; Scotch, grey soil, 75*s.* to 90*s.*; do., red soil, 100*s.* to 130*s.* per ton. Regents:—Lincolns, 70*s.*; Kents, 80*s.* to 90*s.*; Yorks, 75*s.* to 80*s.*; Scotch, grey soil, 70*s.* to 75*s.*; do., red soil, 90*s.* to 100*s.* per ton. Beauty of Hebron:—Lincolns, 100*s.* to 110*s.* per ton. Champions:—Lincolns, 60*s.*; Kents, 65*s.* to 70*s.*; do., Scotch, grey soil, 55*s.* to 60*s.*; do., red soil, 65*s.* to 70*s.* per ton.

During last week 420 trucks arrived at King's Cross, and 490 were emptied; 104 arrived to-day, and 583 trucks are in stock. There is a scarce supply of Scotch and York Magnums, and in consequence a much stronger demand. Regents not much trade for. Inquiry for seed quiet. Should there be a spell of warm weather there will probably be a fluctuation in the above quotations, which may have a downward tendency. *F. W. Foord.*

Imports.—The imports into London last week consisted of 420 bags from Hamburg, 124 Boulogne, 671 Harlingen, 3059 Ghent, 338 cases 130 casks 113 boxes from Malta.

"ARCHIMEDEAN"
AMERICAN LAWN MOWERS.

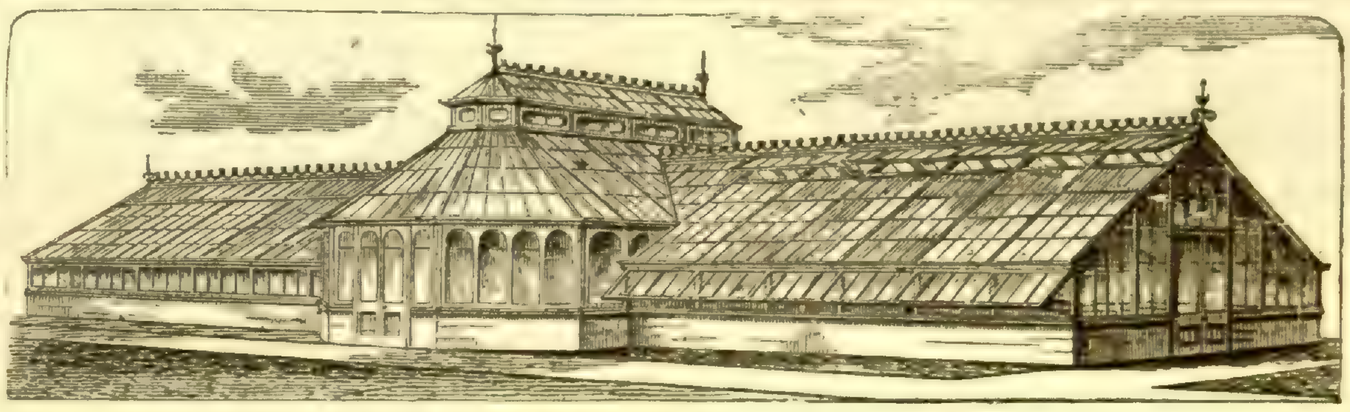
AWARDED
HIGHEST PRIZE
AT THE
Paris Exhibition, 1878;
and the JURY, in their REPORT, say:—
"The 'ARCHIMEDEAN' did the BEST WORK of any Lawn Mower exhibited."
ALSO AT
Sydney Exhibition, 1879-80
AND AT
Melbourne Exhibition, '80-1

Opinions of the Press:
"Far superior to any of ours."—Vide *The Field.*
"Remarkably easy to work."—Vide *Gardeners' Magazine.*
"The quickest, most simple, and most efficient mower ever used."—Vide *Gardeners' Chronicle.*
"We feel bound to recommend it to our readers as one of the best mowers we have as yet made acquaintance with."—Vide *Floral World.*

PRICES FROM
25s.
Delivered Carriage Free to all Railway Stations in Great Britain.

WILLIAMS & CO. (Limited), Manufacturers and Patentees.
SELLING AGENTS: J. G. ROLLINS & CO. (LIMITED), AMERICAN MERCHANTS,
OLD SWAN WHARF, LONDON. E.C.

Five 1st Prize Medals recently awarded in open competition.



Five 1st Prize Medals recently awarded in open competition.

R. HALLIDAY & CO.,
HOTHOUSE BUILDERS and HOT-WATER ENGINEERS,
ROYAL HORTICULTURAL WORKS, MIDDLETON, MANCHESTER.

Vineries, Stoves, Greenhouses, Peach Houses, Forcing Houses, &c., constructed on our improved plan, are the perfection of growing houses, and for practical utility, economy, and durability cannot be equalled. We only do one class of work, and that THE VERY BEST.

Conservatories and Winter Gardens designed architecturally correct without the assistance of any one out of our firm, from the smallest to the largest. **Hot-water Heating Apparatus,** with really reliable Boilers, erected, and success guaranteed in all cases. **Melon Frames, Sashes, Hotbed Boxes, &c.,** always in stock.

Plans, Estimates and Catalogues free. Customers waited on in any part of the Kingdom.

Our Maxim is and always has been—
MODERATE CHARGES. FIRST-CLASS WORK. THE BEST MATERIALS.

PASTUPLANTA.
A Concentrated Chemical Food for Plants. The true food of plants is to return in the form of fertilisers to the soil the elements taken from it by the growth of the plants themselves. **PASTUPLANTA** contains these elements in a peculiar degree combined in a convenient and concentrated form.
Sold only in Tins, containing about 2 lb., 1s. each, or free by post 1s. 6d. each.

SULPHIDE OF POTASSIUM
(HARRIS'S). A perfect Remedy for Mildew.
Sold in Bottles 1s. each, or free by post 1s. 3d. each.
Both the above are obtainable of any Nurseryman or Seedsman in the United Kingdom.

Wholesale Agents:—OSMAN & CO., 14, Windsor Street, Bishopsgate, London, E.
SOLE MANUFACTURERS:—
PHILIP HARRIS & CO. (LIMITED), BULL RING, BIRMINGHAM.

HIGH-CLASS KITCHEN GARDENING. A Handy Manual for the Improved Cultivation of all Vegetables. By William Earley, Author of "How to Grow Mushrooms," "How to Grow Asparagus," &c., &c. Crown 8vo, with Coloured Frontispiece, price 4*s.* 6*d.*
London; Bradbury, Agnew, & Co., Bouverie Street, E.C.

THE

"EASY" LAWN MOWER.

Has an
OPEN STEEL ROLLER.
A lady can work a
20 inch
and a man a
30 inch Machine,
cutting grass 5 inches high clean to its roots.

Before ordering elsewhere send for List to your Ironmonger or Seedsman, or to the Sole Licensees

There is
No Easier Working,
No Better Finished,
No Stronger,
No more Durable Mower
in the Market.

SELIG, SONNENTHAL & CO.,
85, Queen Victoria Street, London, E.C.

HILL & SMITH'S

BLACK VARNISH

for preserving Ironwork, Wood, or Stone.

(Registered Trade Mark.)

An excellent substitute for oil paint, at one-third the cost. Used in all London Parks, at Windsor, and Kew Gardens, and on every important estate in the Kingdom. Has stood the test of forty years' trial. Requires no mixing; can be applied cold by any ordinary labourer.

Price 1*s.* 6*d.* per gallon at the manufactory, or carriage-paid to any railway station, 1*s.* 8*d.* per gallon in casks of 36, 20, or 10 gallons.

CAUTION.—Every cask bears the above Registered Trade Mark. Beware of cheap imitations.

HILL & SMITH,

Brierley Ironworks, Dudley;
118, Queen Victoria Street, London, E.C.;
47, Dawson Street Dublin.

RALPH WALLER AND CO. (Limited), 45, Dale Street, Manchester, Manufacturers of all kinds of GARDEN NETTINGS and HOTHOUSE SHADINGS, made in pieces 30 yards long, 54 inches, 72 inches, and 100 inches wide; also TIFFANIES, 20 yards long, 38 inches wide. Samples and prices on application.

GARDEN REQUISITES. — COLE & BLACKBURN, two doors from Flower Market, Wellington Street, Covent Garden, W.C., supply Raffia, Mats, Fibre Refuse, Sticks, Labels, &c., at lowest market prices. Price List on application

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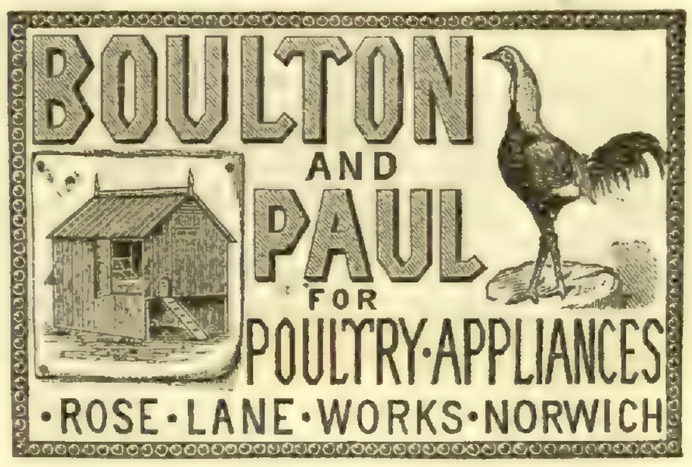
The Handiest Watering Can.—Will not Slop.

Apply to PATENTEE, 4, Mayola Road, Clapton, E.

Ladies' Cans from 2*s.* 6*d.*; Parcel Post, 4½*d.* One Gallon, with two roses, 4*s.* 6*d.*; Parcel Post, 6*d.*

GARDEN POTS.
Best Quality.
LARGEST STOCK.
1½ to 30 in. diam.
1 doz. or 100,000 sent.
J. Matthews,
Royal Pottery,
Weston-super-Mare.

TO THE TRADE.
Large Stock.
LONG TOMS,
and others.
State Quantity.
Send for
Price List.



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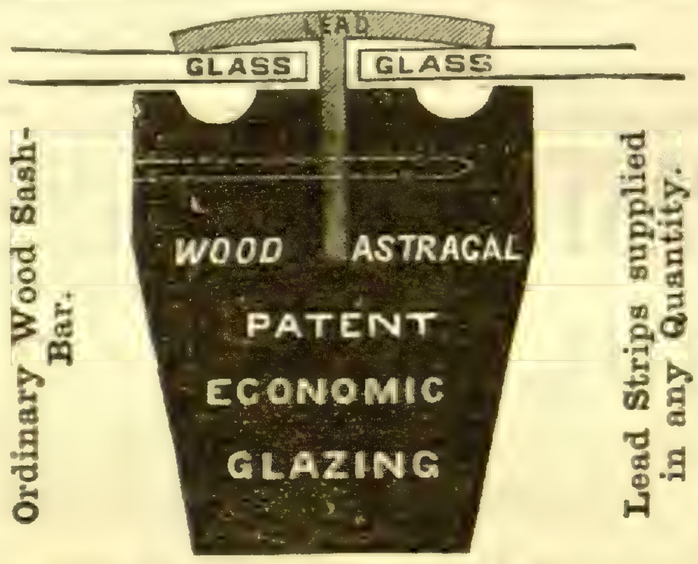
HOTHOUSE SHADINGS.
TIFFANY.

RIGBY, WAINWRIGHT & CO.,
MANUFACTURERS,
Neptune Works, Manchester,
Cotton Wool and Wadding
for Florists and Nurserymen.
Send for Samples and Prices.



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CAN BE FIXED BY ANY ONE.

FOR PARTICULARS APPLY TO

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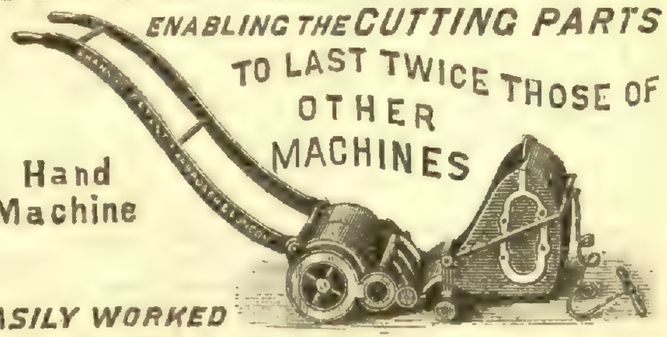
LAWN MOWER

THE ONLY LAWN MOWER FITTED WITH
DOUBLE EDGED SOLE PLATE
ENABLING THE CUTTING PARTS TO LAST TWICE THOSE OF OTHER MACHINES



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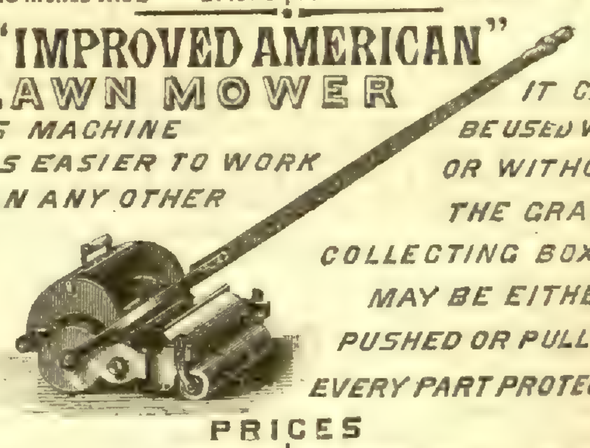
MAKING THE LAWN LIKE VELVET
DOES NOT GET OUT OF ORDER

PRICES

To cut 10 inches wide	£3. 10. 0	To cut 19 inches wide	£8. 0. 0
To cut 12 inches wide	4. 10. 0	To cut 22 inches wide	8. 10. 0
To cut 14 inches wide	5. 10. 0	To cut 24 inches wide	9. 0. 0
To cut 16 inches wide	6. 10. 0		

The "IMPROVED AMERICAN"
LAWN MOWER



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IT CAN BE USED WITH OR WITHOUT THE GRASS COLLECTING BOX
MAY BE EITHER PUSHED OR PULLED
EVERY PART PROTECTED

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10 inch machine	£3. 0. 0	14 inch machine	£4. 15. 0
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HORSE AND PONY MACHINES
ILLUSTRATED LISTS
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GARDEN ROLLERS
OF ALL SIZES

ALEX. SHANKS & SON
DENS IRON WORKS, ARBROATH
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A LARGE STOCK OF MACHINES OF ALL SIZES ALWAYS KEPT AT 27, LEADENHALL STREET
WHERE REPAIRS CAN ALSO BE EXECUTED
SMALL LAWN MOWERS
6 inch 25/-, 7 inch 35/-, 8 inch 45/-,

SUPERIOR VARNISH,

For Preserving Ironwork, Wood, or Stone.

It is applied cold, and may be laid on by any farm labourer or other unskilled person. It dries quickly, giving a hard, brilliant polish, and looks equally as well as oil paint, yet at one-fourth the cost. Price:—Black, 1*s.* 6*d.* per gallon, in casks containing not less than nine gallons, delivered at most railway stations. Casks extra. Brushes for coating Ironwork, Wood, or Stone, 1*s.* each. Catalogues of all kinds of Iron and Wire Fencing, Gates, &c., free on application.

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GARDEN SHADINGS, TIFFANY and SCRIM, COTTON WOOLS, WADDINGS.

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"FRIGI DOMO"
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CONSERVATORY BLINDS made to order,
of Plain or Striped Material.

NEW CANVAS SHADING.
It is perfectly rot-proof, keeps sound under conditions where other fabrics have shown fungoid growth and incipient decay.

FOR PRICE LIST & PARTICULARS ADDRESS:
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PEAT—LOAM—SAND.—50 Acres Light Brown PEAT, full of fibre, 9s. per yard, in truckloads. Yellow Fibrous LOAM, best in England), 10s. per ton, in truckloads. SILVER SAND, 10s. per ton, in truckloads.
BRINKWORTH AND SONS, Reading.

PEAT—PEAT—PEAT.

CATERELL & SON, RINGWOOD, HANTS,

Are now prepared to receive Orders for the above.
GOOD SOUND PEAT, very fibrous, for Orchids, in sacks only; do., for Stove, Greenhouse, Hardwooded Plants, and Rhododendrons, in any quantity.
GOOD YELLOW FIBROUS LOAM, Coarse and Fine SILVER SAND, SPHAGNUM, &c.
Special low terms to the Trade. Price List on application.

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The Best Garden Manure.
In Tins, 2 lb., **1s.** *Larger quantities are charged less,*
MILLER & JOHNSON, 30, Mark Lane, E.C.
Ground BONES, FISH GUANO, POTASH, CRUSHED HOOFS and HORNS, and all other MANURES, at lowest prices.

MECHI'S SOOT AND SEWAGE MANURE.

A dry powder, carefully manufactured by Mechi's process,
WHICH IS DISTINCT FROM ALL OTHERS.
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35s. per Ton loose; 40s. per Ton in bags; 4s. per Cwt. in bag.
Delivered Free on Rail or Boat.
Extract from the London DAILY CHRONICLE, *Jan.* 6, 1887.
"The Metropolis Sewage Company succeeded in proving that *sewage rendered a poor gravel farm of* 200 *acres or* 300 *acres the most productive piece of land in the United Kingdom.* They had grown superb Strawberries of very good flavour, capital Corn, Maize 15 feet high, and Vegetables as good as Covent Garden ever exhibited."
Post-office Orders payable at Mark Lane.
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Cloth and Fumigating Mixture,
Is celebrated throughout the United Kingdom, and acknowledged to be best, safest, and strongest it is possible to obtain, and contains the pure essence of Tobacco only. 6 lb., 4s. 6d.; 14 lb., 10s.; 30 lb., 20s.; the above is carriage paid to London or any railway station in Kent. Parcels sent by Post, paid:—2 lb., 22 stamps; 3 lb., 2s. 6d.; 7 lb., 5s. 6d.; 11 lb. 8s. 6d. Safe delivery is guaranteed on all parcels. Imported Tobacco Paper, &c., at lower rates. Our Tobacco Paper, Cloth, and Fumigating Mixture still stand the best extant. Used in Royal Nurseries, the gardens of the Nobility, by leading men of the Profession, &c. TRADE INQUIRIES SOLICITED.
Manufacturers, Merchants, and Importers,
DARLINGTON BROS.,
NEW ROAD, CHATHAM, KENT.
P.O.O., Cheques, &c., Darlington Bros., Chatham.

Gravel!—Gravel!—Gravel!
JOHN KNIGHT, Upper Bourne, Farnham, having a very large quantity of beautiful Red Binding Farnham GRAVEL for Carriage Drives and Garden Paths, will sell the same at a very reasonable price, as the ground must be cleared. Apply as above.

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TWO PRIZE MEDALS.
Quality, THE BEST in the Market. (All sacks included.)

PEAT, best brown fibrous ...	5s. per sack;	5 sacks for 22s. 6d.
PEAT, best black fibrous ...	4s. 6d. ,,	5 sacks for 20s.
PEAT, extra selected Orchid	5s. 6d. ,,	5 sacks for 25s.
LOAM, best yellow fibrous ...	1s. per bush., 3s. per sack. (sacks included).	
PREPARED COMPOST, best		
LEAF MOULD, best only		
PEAT MOULD, ,,		
SILVER SAND, coarse, 1s. 6d. per bush., 14s. half ton, 24s. ton.		
RAFFIA FIBRE, best only	1s. per lb.	
TOBACCO CLOTH, finest imported ...	8d. lb., 28 lb. 18s.	
TOBACCO PAPER ,, (Spécialité)	8d. lb., 28 lb. 18s.	
MUSHROOM SPAWN, finest Milltrack ...	5s. per bushel.	

CHUBB'S "PERFECT" FERTILISER, the Best Food for all kinds of Plants, Flowers, Fruits, Vegetables, &c. ...	Tins. 1/6	7lb. 3/-	14lb. 5/-	28lb. 8/-	56lb. 14/-	1 cwt. 22/-
CRUSHED BONES, best quality	1/2	2/-	3/6	6/-	12/-	
VIRGIN CORK, best quality only	—	3/-	5/6	10/6	17/-	

In bags.
HORTICULTURAL CHARCOAL, ditto, 2s. 6d. per bushel.
COCOA-NUT FIBRE REFUSE (by Chubb's special process), sacks, 1s. each; 10 sacks, 9s.; 15 sacks, 13s.; 20 sacks, 17s.; 30 sacks, 25s.; 40 sacks, 30s. Truck-load, loose, free on rail, 25s. Limited quantities of G., special quality, granulated, in sacks only, 2s. each. Terms, strictly Cash with order.
CHUBB, ROUND & CO.,
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JENSEN'S

NORWEGIAN
FISH-POTASH GUANO
has given splendid results with
VINES, ROSES, CHRYSANTHEMUMS, AND TENNIS LAWNS.

The following Analysis is guaranteed:—
7 per cent. Ammonia. 20 per cent. Phosphates.
15 per cent. Potash. 10 per cent. Magnesia.
Only 5 per cent. Moisture.

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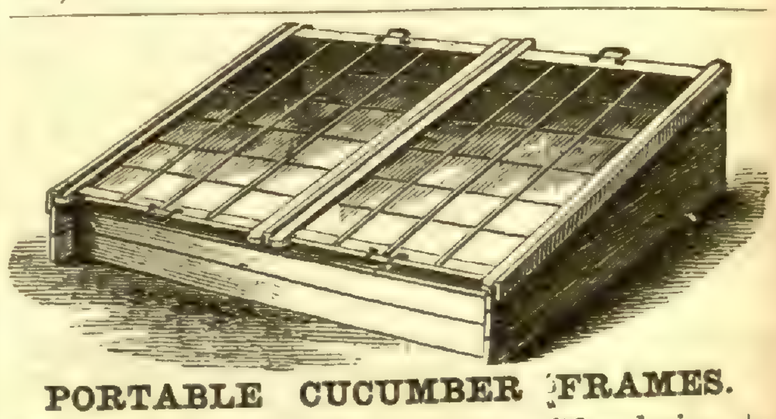

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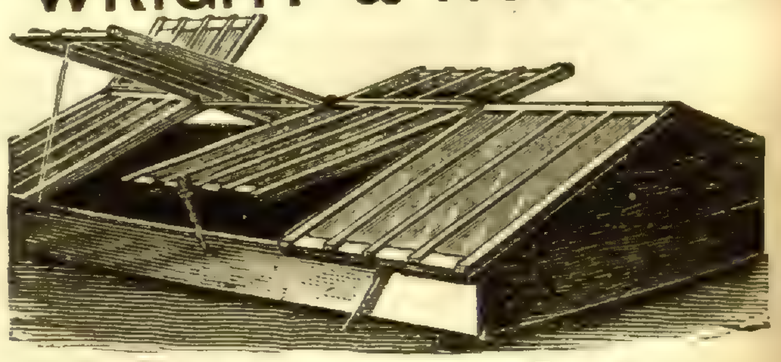

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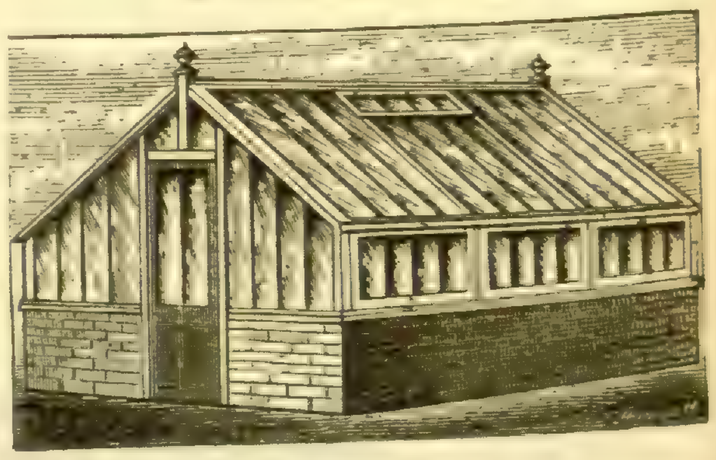

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MILLER, W., Coombe Abbey.
MOORE, F. W., Glasnevin Botanic Garden.
O'BRIEN, T.
RICHARDS, G. H., Somerley Gardens
ROBERTS, J., Gunnersbury.
RUST, J., Eridge Castle.
SAUL, M., York.
SHEPPARD, J., Wolverston Gardens.
SMITH, J., Mentmore Gardens.
SMYTHE, W., Basing Park.
TEMPLE, M., Carron House, N.B.
THOMAS, O., Chatsworth Gardens.
THOMSON, W., Clovenford (Vines).
WALLIS, J., Keele Gardens.
WARD, E., Hewell Grange, Bromsgrove.
WARD, H. W., Longford Castle Gardens.
WATSON, W., Royal Gardens, Kew.
WEBSTER, J., Gordon Castle Gardens.
WILDSMITH, W., Heckfield Gardens.
WILSON, D.
WILSON, G. F. (Lilies).

ROSES :—

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D'OMBRAIN, Rev. H. H.
FISH, D. T., Hardwick, Bury St. Edmunds.
FISHER, Rev. O.
GIRDLESTON, I. W.
PAUL, G., Cheshunt.
PAUL, W., Waltham Cross.

VEGETABLE PHYSIOLOGY :—

BENNETT, A. W.
BOULGER, Prof.
DARWIN, Charles, the late.
FOSTER, Prof. Michael.
GARDINER, W., Cambridge.
GLAISHER, James (Meteorology.)
HENSLOW, Rev. G.

THE GARDENERS' CHRONICLE.

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26 words, including name and address, 1*s*. 6*d*., and 6*d*. for every additional line (about 9 words) or part of a line.
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Tiles for Lining Walls of Conservatories,
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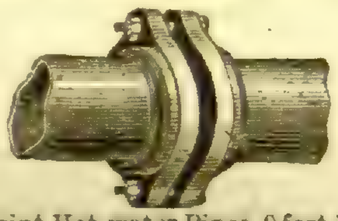

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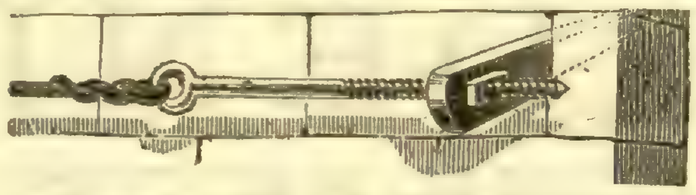

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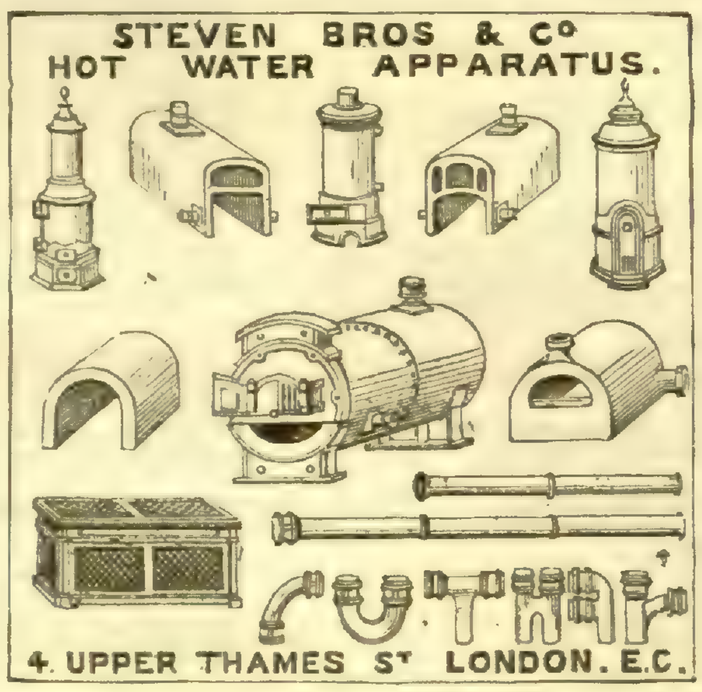
From Mr. F. BROCKINGTON, *The Gardens, Parkfield, Hallow, Worcester*, for a Range of Metallic Hothouses, Hot-water Apparatus, heated by my Flued Saddle Boiler, as above illustration:—"The houses are standing well, and the heating is simply grand,—so very steady; scarcely varies a degree."

From Mr. A. WARD, *The Gardens, Stoke Edith Park, Hereford*:—"I am most pleased to tell you what a great success the new Boiler is. It maintains a steady temperature in all the different houses, and does not require any driving, and I also find that it is much more economical than the Trentham Boiler was. It is quite a pleasure to the young men to stoke, after all the driving we had with the old one, and then they could not get the heat up. I have got a new chimney-pot, 14-inch bore, from Doulton's, and have had it put higher than the old one was, as you advised; so that altogether I can pronounce it a perfect success."



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NOTICE TO THE TRADE.—We shall be pleased to submit sample of our pure Blood, Phosphatic, and Alkaline GRASS MANURE for Parks and Cricket Grounds. Price on enquiry.
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Our special Grass, Potato, Fruit, and Plant MANURES; PEATS, SOILS, &c., are offered in bulk at rates to suit all requirements.
W. WOOD AND SON, Manufacturers, Wood Green, London, N.

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PROCTOR AND RYLAND'S
well-known
Special Garden Manures.
Pure Ground Bone for Vines, Potting, &c.
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FOR SALE, very cheap, 50 strong PIT LIGHTS, 8 feet by 6 feet. Price 4*s*. 6*d*. each, unglazed.
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A large quantity of all descriptions and sizes in stock, at the lowest possible prices.
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WANTED, a HEAD WORKING GARDENER, where two are kept. Understands his business. Married, without family, preferred.—State age, wages, references, &c., L., Mr. Maggs, Post-office, Melksham, Wilts.

WANTED, a HEAD WORKING GARDENER, about 30 years of age (married), who understands the general routine of Gardening, and accustomed to Mowing with Machine. One other kept.—Apply by letter, stating all particulars, wages, &c., to Mrs. CHALCRAFT, Hewshott, Liphook, Hants.

WANTED, a HEAD WORKING GARDENER, to take entire Management of a Large Nursery for Growing Forced Fruit, Flowers, and Vegetables. As entire management is left with him he would be required to invest an agreed sum in the same—say £200—and could have option at Michaelmas of renting Nursery himself.—Answer to A. D., 41, Wellington Street, Strand, W.C.

WANTED, a JOURNEYMAN, age about 20.—G. W. CUMMINS, The Grange, Wallington, will be glad to hear from any Gardener who can thoroughly recommend a young man; must have some knowledge of Hardy Fruit and Orchid Culture.

WANTED, TWO active steady young MEN. Must be well up in Cucumber Growing, Watering, Potting and Tying for Market. Wages 18*s*. per week. Good references required.—WILLIAMSON, Bloomsbury Nursery, Timperley, near Manchester.

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WANTED, a young MAN, for the Pleasure Grounds.—One who thoroughly understands his work. Wages, 18*s*. per week and Bothy.—Apply, with full particulars, to C. GOLDSMITH, Wickham Lodge, Kelsey Manor, Beckenham, Kent.

WANTED, a young MAN for the Houses. Quick at Potting and Tying.—Apply, stating salary, to B. & A. MATTHEWS, Nurseries, Waltham Cross.

WANTED, a SALESMAN, by a Market Florist for Covent Garden. One with a connection preferred, and able to fill up time in the Houses. Good wages. Good references required.—Z., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

WANTED, for Cut Flower Department in a Provincial Nursery, a young MAN, of good address and thoroughly competent to make Wreaths, Crosses, Bouquets, Sprays, &c. A part of his duties will be to Attend to Customers.—Apply with references, salary required, &c., to 20, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

WANTED, by April 18, an experienced young MAN, to Assist in Shop and with Furnishing. State age, wages, and references to WILLIAM HOOPER, Florist, 186, Oxford Street, London, W.

GARDENING APPOINTMENT.

MR. ALEXANDER BLACK, who was till recently Foreman at Duncombe Park Gardens, Helmsley, has been appointed Gardener to the Duke of LEINSTER, Carlow Park, Maynooth, Ireland.

Mr. T. NORREBY, late Gardener at The Elms, Torquay, has been appointed Gardener to W. MELLIAR FOSTER-MELLIAR, Esq., North Aston Park, Deddington, Oxon.

Mr. JORN POWELL has been appointed Head Gardener to Mrs. HOLE, Quorndon Lodge, Loughborough, Leicestershire.

WANT PLACES.

THE LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, The Vineyard and Nurseries, Garston, near Liverpool, are at present in a position to recommend a competent man of excellent character as HEAD GARDENER, and also another MAN, who, in addition to being a good General Gardener, has had great experience as an Orchid Grower. Both men are capable of Managing Large Establishments.

Gardeners.

THOMAS KENNEDY AND CO. have on their Register a number of first-class GARDENERS, FORESTERS, &c., wishing engagement, and will be glad to furnish particulars to any one in want of same.—THOMAS KENNEDY AND CO., 108, High Street, Dumfries, N.B.

RICHARD SMITH AND CO. beg to announce that they are constantly receiving applications from Gardeners, seeking situations, and that they will be able to supply any Lady or Gentleman with particulars &c.—St. John's Nurseries, Worcester.

To Noblemen and Gentlemen requiring Land Agents, STEWARDS, BAILIFFS, or GARDENERS.

JAMES CARTER AND CO. have at all times upon their Register reliable and competent MEN, several of whom are personally well known to Messrs. Carter. Enquiries should be made to 237 and 238, High Holborn, W.C.

Situations Wanted.

JOHN LAING AND CO., having filled many important places, can RECOMMEND with every confidence, energetic and practical MEN of tested ability, and first-rate character. Ladies and Gentlemen in want of Gardeners and Bailiffs, or Gardeners for first-rate Establishments, or Single-handed situations, can be suited, and have full particulars by applying to us. No fees charged.—JOHN LAING AND CO., The Nurseries, Forest Hill, S.E.

Gardeners, Under Gardeners, Bailiffs, &c.

WM. CUTBUSH AND SON have at the present time on their List MEN whose characters will bear strict investigation, and such as from their personal knowledge can recommend as to abilities, &c.—Ladies and Gentlemen requiring either of the above can be suited with reliable, first-class men by applying to Wm. Cutbush & Son, Highgate Nurseries, N.

GARDENER (Head).—Age 27; thirteen years' practical experience in all branches of the profession; five years Foreman in present situation. Good references.—W. HARRISON, The Gardens, Elmete Hall, Roundhay, Leeds.

GARDENER (Head); age 29.—J. Hope, Gardener to the Earl of Bradford, Weston Park, Shifnal, can with confidence recommend his Foreman, Thomas Croxford, to any Lady or Gentleman requiring the services of a practical man in every branch of gardening.

GARDENER (Head).—G. Beddoes, six years Head Gardener and Orchid Grower to the late R. P. Percival, Esq., of Clevelands, Birkdale, Southport, is open to an engagement with any Lady or Gentleman requiring the services of a thoroughly practical man.—Address as above.

GARDENER (Head); age 29.—D. Walker, Gardener to B. H. Collins, Esq., Dunorlan, Tunbridge Wells, can with every confidence recommend his Foreman, Joseph Anderson, to any Lady or Gentleman requiring a good practical Gardener.—For further particulars apply as above.

GARDENER (Head); age 34, married.—Wakefield Christy, Esq., Brooklands, Chelmsford, would be pleased to recommend his late Head Gardener to any one requiring a thorough trustworthy man. Well up in all branches of the profession. Three years' character. Teetotaller.—JOHN F. RAGGETT, 14, Rundell Road, Paddington, W.

GARDENER (Head).—John Hughes, many years Gardener at Ince Hall, near Chester, wishes to recommend his son to any Lady or Gentleman wanting a thorough good Gardener, who has learnt his profession in some of the best Noblemen's gardens in England. Character excellent.

GARDENER (Head); age 28.—Mr. Geary, Gardener to the Earl of Portsmouth, Eggesford Gardens, Wembworthy, North Devon, can highly recommend his Foreman, Elias Dawe, to any Lady or Gentleman requiring the services of one. Good testimonials from previous employers.

GARDENER (Head); age 36, married, one daughter.—£10 Bonus will be given for information that leads to advertiser obtaining a good situation as Head Gardener; experienced, especially Orchids, Grapes, Peaches, Melons, Tomatos, Flower and Kitchen Garden. Excellent testimonials and certificates from various shows.—W. P., 119, Milkwood Road, Loughborough Junction, S.E.

GARDENER (Head Working); single at present.—Those desirous of securing the services of a really first-rate all-round Gardener (Scotch), can have all particulars of same, on application, in first instance, to J. KNIGHT, The Oaks, Epsom.

GARDENER (Head Working); one boy (age 14).—A Gentleman wishes to recommend a Gardener, Head Working; twenty years' experience in all branches; take charge of Gentleman's House if required. Good references.—H. T. G., 5, Queen's Terrace, Windsor.

GARDENER (Head Working).—The late Lady Ogle's Secretary wishes to recommend her Head Gardener, who for eight years proved his thorough knowledge of all branches of Gardening, and high character. An excellent man.—EDWARD C. SOUPER, Esq., Stanford Avenue, Brighton.

GARDENER (Head Working); age 34, married, one child (age 8).—F. Simmonds, who has lived at Sandridge Park, Melksham, Wilts, close upon four years as above, is at liberty to engage wirh any Lady, Nobleman, or Gentleman requiring a thoroughly practical man, who has a thorough general knowledge of the working of a good Garden in all branches.—Address as above.

GARDENER (Head Working).—Age 31, married. Thoroughly experienced in all branches, Inside and out. Seven years' excellent character.—W. MITCHELL, The Grange, 23, Highbury New Park, London, N.

GARDENER (Head Working).—Age 26; total abstainer. Seven years' personal character.—C. J. H., Widmore Lodge, Bromley, Kent.

GARDENER (Head Working).—Age 36, married; twenty years' thorough practical experience in the usual requirements of a Gentleman's establishment. Land and Stock if required. Excellent testimonials for character and ability from present and previous employers.—G. HOOKE, Gardener, Tockington House, Almondsbury, Gloucestershire.

GARDENER (Head Working, or good Single-handed), where help is given.—Age 40, married; three in family, eldest seventeen. Thoroughly competent in the usual requirements of a Gentleman's establishment. Twenty years in last place. Highest references as to character and ability.—S. ELKINGTON, Nelson Street, Buckingham.

GARDENER, where one other is kept, or good Single-handed.—Age 30, married, no family; well up in general routine of Gardening.—E. POSNETT, Bell Lane, Hoddesdon, Herts.

GARDENER (good Single-handed) or help given).—Age 30, single at present; thoroughly understands all branches of the profession. Six years in present situation. Can be well recommended.—F. MARSH, Brookthorpe, Gloucester.

GARDENER (Single-handed or good Second).—Age 23; nine years' experience in Houses, Flower and Kitchen Garden. Two years' good character. Abstainer.—JOHN LEECH, 61, Tanfield Road, Croydon.

GARDENER (Second or Single-handed).—Married, age 30. No objection to a pony.—W. MARDELL, New Town, Codicote, Welwyn, Herts.

GARDENER (Second), in a Gentleman's family, where three or four are kept.—Age 23; good character.—G. BIGGS, The Tile House, Denham, Bucks.

GARDENER (Second).—Age 21; four and a half years' experience—chiefly glass.—H. L., Heath Lodge, The Common, Uxbridge, Middlesex.

GARDENER (Second).—Age 21; experienced in Vines, Peaches, Ferns, and Flowers, also Flower and Kitchen Garden. Good references from two last employers.—J. YOUNG, Bodicote House, Banbury, Oxon.

GARDENER (Second), where two or three are kept.—Age 27; six months' good character. Five and a half years' previous.—E. H., Mrs. Riddles, Findon, Worthing, Sussex.

GARDENER (Second), where others are kept.—Age 25; eleven years' practical experience in the routine of Gardening. Good character from present and previous employers.—Reference to Mr. Banks, The Gardens, The Logs, Hampstead.

GARDENER (Second), or JOURNEYMAN (First), in the Houses.—Age 25; eight years' experience Inside and Out. Two years' character from present employer.—H., Mrs. J. Williams, Wolverley Forge, Kidderminster.

GARDENER (Under).—Age 22; seven years' experience Good character.—F. LANCASTER, Mr. Dean, Post Office, Shirley, Croydon.

GARDENER (Under), to work Inside and Out.—Age 19; four years' experience.—W. FENTON, Lullington, Burton-on-Trent.

GARDENER (Under); age 19.—A Clergyman can recommend a steady and industrious young man. Six years' good character.—J. SMITH, Burley, Oakham.

GARDENER (Under), Inside and Out.—Had good experience in Gentlemen's Private Gardens. Good character.—C. BRAZIER, Whatscombe Cottage, Cul-de-Sac Road, East Molesey, Surrey.

GARDENER (Under), or GARDEN ASSISTANT.—Age 27; married, no family. Accustomed to plain Gardening, &c. Well recommended.—G. P., 4, Sefton Terrace, St. John's, Worcester.

FOREMAN, in the Houses.—Age 24; nine years' experience in the Cultivation of Stove and Greenhouse Plants, Vines, Peaches, Melons, &c. Good character.—C. LINK, Everingham, York.

FOREMAN, in the Houses.—Age 23; nearly ten years' experience. Can be well recommended by past employers.—A. SMITH, 20, Castelnau Villas, Barnes, Surrey.

FOREMAN, in a good establishment or department.—Age 27; twelve years' experience in good places. Good character.—WALTER ADAMS, Cottage Hill, Oxted, Surrey.

To Nurserymen.

FOREMAN, Outside.—Age 37; long experience in the Cultivation of Fruit Trees, Roses, and General Outdoor Nursery Stock, Execution of Orders, &c. Twenty years with Messrs. R. Smith & Co., Worcester.—THOMAS POWELL, Middle Road, St. John's, Worcester.

FOREMAN (General or Department).—Age 27, single; fourteen years' experience in first-class Gardens; trustworthy and energetic. Highest references given. Abstainer.—W. GOLDSMITH, Polesden, Dorking, Surrey.

FOREMAN (General or Department).—Age 26; twelve years' practical experience in all branches of the profession in Well-managed Gardens. Over two years in present situation, three in previous. Good references.—C. STYLES, The Gardens, Handcross Park, Crawley, Sussex.

FOREMAN, in a good place.—Age 25; eleven years' experience. Excellent testimonials.—H. BENIAMS, Downton Castle Gardens, Ludlow.

To Nurserymen.

FOREMAN, or GROWER.—Age 27; permanent; twelve years' experience in Plant and Cut Flower Market Nurseries. Good Wreath, Cross, and Button-hole Maker.—T. J. VIGOR, 176, Western Road, Brighton.

FOREMAN, in a small place, or JOURNEYMAN in a good establishment.—Age 21; excellent testimonials.—E. PREECE, Downton Castle Gardens, Ludlow.

FOREMAN, in the Houses, or good SECOND.—Age 26, single; three years' character as Foreman.—GARDENER, Mr. Moss, Lane End, High Wycombe.

FOREMAN, or SECOND, in a good establishment.—Age 28, single; Twelve years' experience. Bonus offered. Distance no object.—J. G. WARENS, Garratt Lane, Tooting, S.W.

PROPAGATOR and GROWER of Hard and Soft-wooded Plants.—Nine years' experience, four years with last employer.—C. MILLER, Old House Farm, Hayward's Heath, Sussex.

FLORIST, in Greenhouses.—Age 18; three years' experience; good reference.—A. W., 10, Portman Street, Portman Square, W.

JOURNEYMAN (First); age 23.—T. Lockie, Oakley Court, Windsor, would be pleased to recommend a young man as above; steady and trustworthy, with good general knowledge of his work. Bothy preferred.

JOURNEYMAN (First), in the Houses.—Age 22; eight years' experience and good character. Well recommended. Bothy preferred.—E. N., Croft House, Bridge Street, Witham, Essex.

JOURNEYMAN, in a large establishment.—D. Melville, St. Vincent's Gardens, Grantham, can with confidence recommend a good all-round man. Three years in present situation.

JOURNEYMAN, in the Houses, in a good establishment.—Good character.—J. BAKER, Hunton Hill, near Maidstone, Kent.

JOURNEYMAN, in the Houses, under a Foreman, where one or two more are kept.—Good reference.—C. HYATT, The Gardens, Cannon Hall, Barnsley, Yorks.

JOURNEYMAN, in a good establishment.—Age 23; seven years' experience. Excellent reference from present and previous employers.—J. BROOKS, The Gardens, Ruxley Lodge, Esher, Surrey.

JOURNEYMAN, in the Houses; age 19.—E. Underdown, Head Gardener, Colehays, Bovey Tracey, Devon, can with every confidence recommend to any Gardener a steady, persevering, trustworthy young man, who has been with him four years.

JOURNEYMAN, or Second, in a good establishment.—Age 24; total abstainer. Good character. Leaving through establishment being reduced.—J. ROLLINS, 6, Burr Road, Merton Road, Wandsworth, S.W.

TO NOBLEMEN and GENTLEMEN.—Wanted, by a respectable young man, of good appearance (age 18), a situation in a Gentleman's Garden. Bothy preferred. Strong, active, and willing. Two years in Houses in a Market Nursery. Can be well recommended.—MILNE, Florist, New Hampton, Middlesex.

TO GARDENERS, &c.—A young man seeks a situation in the Houses under a good Gardener. Four years' good character. Total abstainer. Age 22.—W., 5, Spencer Road, Upper Mitcham, Surrey.

TO GARDENERS.—Wanted, by a youth, a situation under a Gardener. Age 16; good character.—F. A., 3, Orleans Road, Twickenham, Middlesex.

APPRENTICE.—Wanted to place a well-educated youth as an Apprentice with a good Nurseryman.—H. H. EDWARDS, 69, Bath Row, Birmingham.

TO GARDENERS, &c.—Wanted, a situation by a Lad in a Garden; age 17; willing and obliging. Two years' good character.—A., Mr. Neal, Norbury Park, near Dorking, Surrey.

MANAGER or TRAVELLER.—Advertiser seeks engagement as above either in Nursery or Seed Department. Twenty years' experience with well-known firms.—X. Y. Z., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

Seed Trade.

SHOPMAN (Second), or WAREHOUSEMAN.—A young man, with a thorough knowledge of the business, wishes a situation as above. Character can bear the strictest investigation.—M., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

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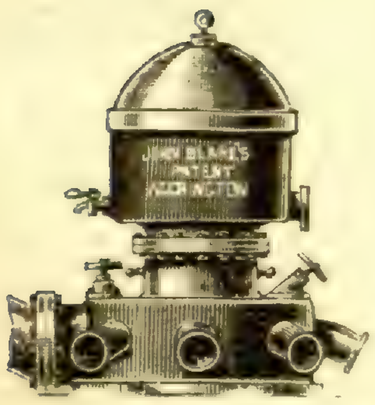
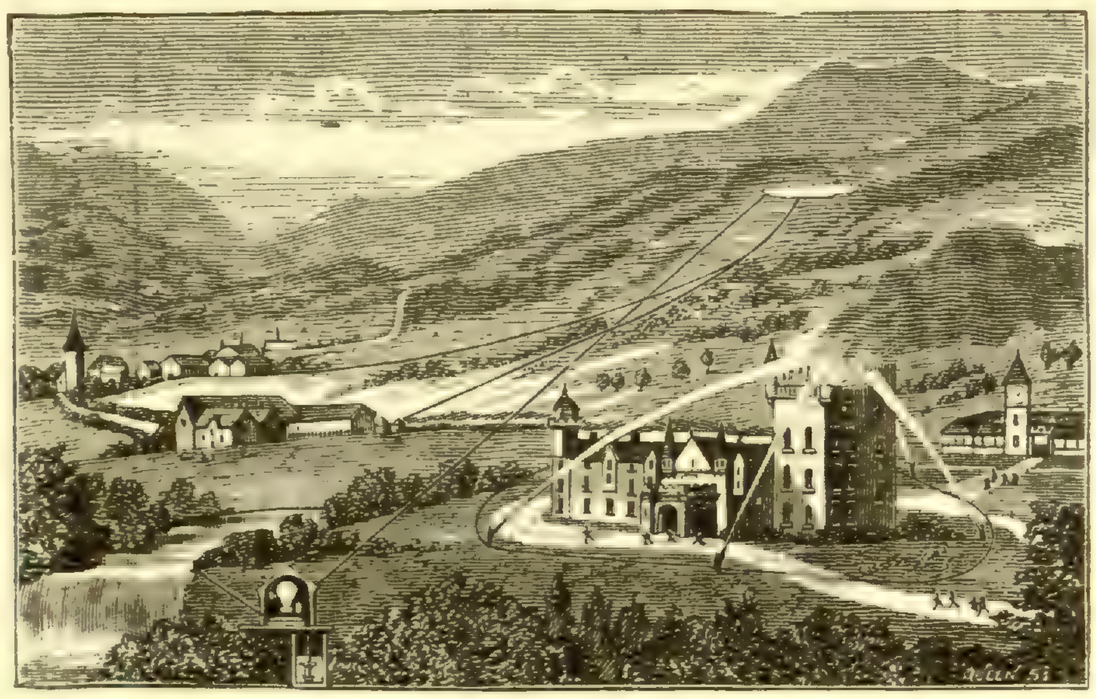
NO OILING OR PACKING REQUIRED.

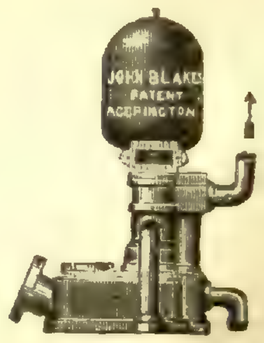
MADE IN SIZES TO RAISE FROM **300** TO **500,000** GALLONS PER DAY. WILL FORCE TO A HEIGHT OF **1500 Feet.**
SPECIAL RAMS for HIGH FALLS, to send up One Third of the Water passing through them.



This Ram will force up **200,000** gallons per day to medium heights. The patterns vary with the different sizes.



This View represents a Ram worked by impure river water, whilst pumping pure water from a well and forcing it to a small reservoir on the hill, at an elevation of 295 feet, and a distance of 1 mile, from which reservoir the water is gravitated for fire extinguishing and general requirements of mansion, stables, farm and village.



This Ram will force a part of the same water that works it, or will force clean water from a well or spring whilst worked by a stream of impure water. Rams on this principle can be supplied to force to a height of **1500** feet.

EXTRACTS FROM TESTIMONIALS.

From Sir FREDERICK A. MILBANK, Bart., M.P, 2, Moreton Gardens, South Kensington, London, March 30, 1886.

"Dear Sir,—I have much pleasure in saying that the Hydraulic Ram you put down for me at Thorpe Perrow gives great satisfaction, the materials supplied were of the best quality. I have had the Ram at work from the time it was put down and have never heard a complaint. It worked well all through the long winter, which I consider was a great and severe trial, as we had the thermometer, for weeks together, registering from 22 degrees to 10 degrees of frost.

"Yours truly, FREDERICK A. MILBANK."

From Colonel YOUNG, Agent to the Right Hon. Lord Londesborough, Londesborough Estate Office, Market Weighton, April 6, 1886.

"Dear Sir,—I have pleasure in stating that the Ram you put down in the park here, to supply Lord Londesborough's house and the village of Londesborough with water, in August last, has done its work remarkably well up to the present time, and we have had no alteration to make in it since it was completed and started by your workmen, and I consider it a great improvement upon the one previously in use for the same purpose.

"I am, yours very truly, THOMAS YOUNG."

From Mr. J. A. RUTHERFORD, Agent to C. F. H. Bolckow, Esq., Estate Office, Marton Hall, Middlesborough, September 26, 1883.

"Dear Sir,—I am glad to say that the Rams you put down on the Hambleton Estate, for Mr. C. F. H. Bolckow, are working very well. You undertook, with 16 gallons per minute, to send up 1500 gallons a day, and with enough water to work the Rams at full power, 2000 gallons a day. With a sapply of 11¾ gallons per minute they are lifting 2200 gallons, and when working full power, 3105 gallons per day are sent up to a height of nearly 400 feet. They made a clear start and have gone well since."

The Delivery Pipe, in the above case, is 9000 feet in length.

From HORATIO R. B. PEILE, Esq., Commissioner to Sir Michael Shaw Stewart, Bart., Mansion House, Greenock, August 13, 1883.

" am glad to say that the Ram you fixed at Castle Farm, in November last, for Sir Michæl Robert Shaw Stewart, Bart., continues a great success. The smallness of the driving water—2¼ gallons per minute—is not more wonderful than the large proportion of water it sends up, viz., 720 gallons per day, through about 400 yards of delivery pipe, to an elevation of 75 feet."

From V. F. BENETT-STANFORD, Esq., M.P., Pyt House, Tisbury, Wilts, August 20, 1880.

"I have no hesitation in saying your Self-Acting Hydraulic Ram and Apparatus for extinguishing fire, which you laid down here, including about 1 mile of pipes, are very satisfactory. The Ram forces upwards of 5000 gallons per day to a service reservoir holding 25,000 gallons, at an elevation of 295 feet, being 70 feet above the roof of the house, from which reservoir the water is distributed to the house, stables, home farm, and several cottages, and in case of fire four jets can be thrown on to the house from different sides at a great force and large volume. I consider the work has been done well and efficiently, and does you credit."

From RICHARD MERCER, Esq., Sandling Place, Maidstone, December 10, 1883.

"Dear Sir,—I have much pleasure in stating that the Ram you started here about three years ago is still a great success. It is driven by water falling only 5 feet 6 inches, and sending up about 1500 gallons per day to a height of 126 feet, and delivering 50 per cent. more water than you promised."

From G. REDMAYNE, Esq., Brathay Hall, Ambleside, May 11, 1875.

"Sir,—I am glad to say that so far the Self-Acting Hydraulic Ram of your make, and supplied by Mr. W. A. Fell, of Troutbeck Bridge, is working very satisfactorily, and throwing up much more water than you promised to a height of 75 feet with a fall of only 3 feet 3 inches, Mr. Fell having previously fixed a Ram by a reputed maker, which was an utter failure, as it could not deliver any water at the elevation required."

From JOHN TAYLOR, Esq., The Rocks, Bath, August 22, 1878.

"The Self-Acting Hydraclic Ram you fixed here in March of last year continues to work well. It has only the same quantity of water and fall to work it as the water-wheel and pump which I used previously to force to a height of 294 feet, and yet the Ram sends up more than double the quantity of water that the wheel did to the same height."

JOHN BLAKE, ENGINEER, ACCRINGTON, LANCASHIRE, ENGLAND.

Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
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The Gardeners' Chronicle

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CONTENTS.

Anæctochilus, the ...	515
Apiary, the	520
Apples, cheap storage for	515
"Botanical Magazine," the	514
Bulb garden, the ...	518
Cattleya (Trianæi) Schroederæ	512
Chrysanthemums, late .	519
Coleonema alba	517
Crocuses and the birds ...	519
Crocus iridiflorus ...	520
Cypripedium almum × ...	512
Dendrobiums, seedling ...	519
Flower garden, the ...	513
Forestry	518
Fruits under glass ...	518
Galeandra flaveola ...	512
Gardeners' Orphan Fund	516
" Royal Benevolent...	519
Gardening appointments	530
Grapes in the open air ...	512
Guildford Castle: plan of grounds at	510
Haarlem bulb garden in March	518
Hardy fruit garden ...	517
Landscape Gardening, Guildford	510
Lapagerias	519
Law notes:—	
Lewisham Board v. Cobb	523
Milton's Cottage in Bucks	509
Horticulture in Natal ...	516
Nematoid worms ...	519
New York Experiment Station	51J
Oakwood, flowers at ...	519
Odontoglossum + histrionicum	512
Phloxes, herbaceous ...	519
Roses, cut, from America	516
Royal Horticultural Society	519
Scotland	521
Skimmia japonica ...	519
Societies:—	
Royal Caledonian ...	521
Royal Horticultural ...	522
Tobacco, English ...	517
Trees and shrubs... ...	520

ILLUSTRATIONS.

Crocus byzantinus, home of	521
Cypripedium Marshallianum	513
Guildford Castle grounds, plan of	511
" " section	510
Honey Crate	520
Natal, Sir T. Shepstone's garden in. (See Supplement.)	

NOTICE TO SUBSCRIBERS.—All Numbers of the "Gardeners' Chronicle" from January 1 of this year are still to be had.

ROYAL HORTICULTURAL SOCIETY.
NOTICE!
Volume VIII. of the *Journal*, entitled "THE FROST REPORT," on the Effects of the Severe Frosts on Vegetation during the winters of 1879-80 and 1880-1, by the Rev. GEORGE HENSLOW, M.A., F.L.S., F.G.S., may be had free of charge by the Authors of the Reports, as well as by Fellows, on application to the Secretary, Royal Horticultural Society, South Kensington, S.W. The Report may be purchased, price 5s., from Messrs. MACMILLAN AND CO., 29, Bedford Street, Covent Garden, W.C.

LEEDS HORTICULTURAL SOCIETY.
ANNUAL SHOW, JUNE 21, 22, 23, 24, 1887.
Schedules of Prizes, Now Ready, may be had of
J. H. CLARK, Sec., 15A, Briggate, Leeds.

NATIONAL CHRYSANTHEMUM SOCIETY.—Schedules now ready, and may be had (free) on application to WILLIAM HOLMES, Hon. Sec.
Frampton Park Nurseries, Hackney, E.

BRIGHTON and SUSSEX FLORICULTURAL and HORTICULTUBAL ASSOCIATION.
A GRAND SUMMER EXHIBITION and a GRAND AUTUMN EXHIBITION will be held this year. Dates and particulars will be shortly announced.
EDWARD CARPENTER, Secretary.
Secretary's Office: 96, St. James' Street,
Brighton, March 28, 1887.

New Zonal Pelargonium,
QUEEN OF WHITES IMPROVED.—It is without doubt the best White Zonal ever offered. It has been in flower all the winter at our Nurseries, and will be ready to send out May 1. £1 per dozen, strong plants. Certificate Royal Botanic Society, May 19, 1886.
PHILIP LADDS, The Nurseries, Bexley Heath, and Swanley.

"Imperator" Potato.
PETER LAWSON AND SON (Limited), Edinburgh, are prepared to Book Orders for the "IMPERATOR" POTATO, as sent out by them, also other leading kinds. Prices upon application.

Bedding Begonias.
JOHN LAING AND CO. have a grand stock of Tubers, carefully and specially selected to colour for bedding from our outdoor beds last summer, three shades of crimson, orange-scarlet, magenta, pink, rose, scarlet, white, &c. Per dozen, post-free, 6s. Cultural Directions in CATALOGUE.
JOHN LAING AND CO., The Nurseries, Forest Hill, S.E.

CALCEOLARIA Golden Gem. — Several thousands, surplus, to dispose of, at 40s. per 1000.
THOMAS HOWES AND SON, Highbury Nursery, Blackstock Road, Finsbury Park, N.

Ferns—Ferns—Ferns.
HERBERT TITE can still supply a few thousand small FERNS for growing on at a low price for cash.
The Nurseries, Hampton-on-Thames, Middlesex.

A PAIR of CHAMÆROPS EXCELSA, 5 feet high, 12 Fronds on each. Good healthy plants, 30s. each.
GARDENER, Holly Lodge, Stamford Hill, London, N.

Fruiting Vines.
PAUL AND SON have still a fine stock of Hamburgh and Muscat VINES of their usual good quality. The "Old" Nurseries, Cheshunt, N.

Important Notice.
To Florists, Seedsmen, Horticultural Builders, &c.
PLANTS, FLOWERS, FRUITS and VEGETABLES a Specialty.
WM. J. WELCH begs to call particular attention to his productions for
ILLUSTRATING BOOKS, MAGAZINES, CATALOGUES, and for ADVERTISING PURPOSES.
For Specimens see *Gardeners' Chronicle*, 1883 to 1886.
ADDRESS:—25, Wellington Street, Strand, London, W.C.

EUCHARIS—EUCHARIS—EUCHARIS.—Highest Market Prices guaranteed for well packed Blooms of above.
WISE AND RIDES, Covent Garden, W.C.

MESSRS. GREGORY AND EVANS, NURSERYMEN, Sidcup, and 285, 286, 287, 288, Flower Market, Covent Garden, W.C., are open to RECEIVE CONSIGNMENTS of Choice CUT FLOWERS in any quantity for their Commission Department. Boxes and Labels supplied.
Telegraph Address—"COMMISSION, SIDCUP."

SQUELCH AND BARNHAM, North Row, Covent Garden, W.C., are OPEN TO DISPOSE OF any quantity of MUSCATS and BLACK GRAPES, TOMATOS, CUCUMBERS, FRENCH BEANS, STRAWBERRIES, CHOICE FLOWERS, &c. Highest Market Prices obtained. Account Sales daily; Cheques weekly or as preferred by Sender. Baskets and Labels supplied. References given.

A. BROWN, FRUIT and FLOWER SALESMAN, Central Avenue, Covent Garden, W.C., will, upon receipt of Consignments, return money the following day.

WANTED, Large Plants of Fielder's WHITE AZALEA and WHITE IXORA in EXCHANGE for ORCHIDS. HEATH AND SON, Cheltenham.

WANTED, large PALMS, TREE FERNS, and other large ORNAMENTAL FOLIAGED PLANTS, in EXCHANGE for ORCHIDS or other PLANTS. Send full particulars.
The LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, The Vineyard, Garston, Liverpool.

WANTED, Large Specimens of KENTIAS, SEAFORTHIAS, LATANIAS, ARECAS, &c. Good prices given for plants 9 feet and upwards; 15 to 30 gs. offered for good Kentias, 9 feet and upwards.
Address, W. WEEKS, 440, Fulham Road, S.W.

WANTED, ASPARAGUS, plumosus nana, strong plants. Particulars and cash price to
ROBERT GREEN, Floral Establishment, Crawford Street, W.

WANTED, a Second-hand Copy of Hooker and Bentham's "GENERA PLANTARUM," also the "GARDENERS' CHRONICLE," complete from 1870 to end of 1886, cheap. State price and condition to
THOMAS SPANSWICK, 37, Southampton Street, Strand, W.C.

Hardy Herbaceous and Alpine Plants.
PAUL AND SON'S New Descriptive SUPPLEMENT, with all novelties offered to date, is now ready. It will be sent with last edition of the very carefully prepared LIST, post-free on application. This contains soils, aspects, colour, date of flowering and individual prices of all plants for Herbaceous and Rock Gardens. The Rock Garden at Broxbourne from now on is very interesting.
The Old Nurseries, Cheshunt, N.

The Choicest Specimens of Evergreen TREES and SHRUBS.
RICHARD SMITH AND CO. beg to announce that they have just published a little LIST in which they offer the above at prices practically within the reach of all, and they will be happy to send same free by post.
St. John's Nurseries, Worcester.

To the Trade.
BEFORE Ordering PALM SEEDS
Write for Special Low Offer to
H. DAMMANN, Jr., Breslau, Germany.
Best references. Guarantee for germinating.

Special Offer.
ISAAC MATTHEWS AND SON have for Sale 500,000 RHODODENDRONS, varying in size from 4 to 6 inches up to 2 to 3 feet—Cunningham's White, Jacksoni, caucasicum, pictum, Seedling Hybrids, Hybrid ponticum, and named varieties; good bushy plants. HOLLIES, CONIFERS, FOREST TREES in large quantities; AUCUBAS, YEWS, and other Nursery Stock. CATALOGUES now ready, and may be had, gratis and post-free, on application to the Nurseries, Milton, Stoke-on-Trent.
Our Nurseries are 110 acres.

Rhododendron "caucasicum albums" (true).
JOHN CARTER, Nursery, Keighley, has several thousands of this most useful Plant to offer; well set with buds and fine healthy Plants, from 8s. per dozen to 3s. 6d. each. Where white flowers are wanted this variety is invaluable as there is no difficulty in having a succession from Christmas till May, and for the garden its fine bushy habit hardiness, and free flowering is not equalled by any other Rhododendron. Samples if required.

CŒLOGYNE CRISTATA, with bloom-spikes, well grown and very cheap.
Trustees of the late J. STEVENSON, Timperley, Cheshire.

Spring, 1887.
CHARLES TURNER'S New General and Descriptive CATALOGUE of Florist Flowers, &c., is now ready, and may be had free on application.
The Royal Nurseries, Slough.

VICTORIA PLUM GRAFTS. — A few thousands to spare. Cut off months ago.
WILL TAYLER, Osborn Nursery, Hampton, Middlesex.

Strawberries for Forcing.
H. LANE AND SON have a few hundred in 32-pots of the following sorts:—King of the Earlies, Captain, President, Keens', Sir J. Paxton, and Dr. Marier; also Runners in small 60-pots for planting. Quantity of each and price on application.
The Nurseries, Berkhamstead, Herts.

ASPARAGUS. — Strong roots for present planting. Special quotation on application.
JAMES DICKSON AND SONS, Newton Nurseries, Chester.

SEED POTATOS.—One of the largest stocks and variety in the Trade. Before buying elsewhere send for my Descriptive CATALOGUE, sixteen pages, containing description of about 160 varieties; also Lists of the most suitable varieties for Exhibition, Garden or Field Culture, and several New Seedlings of great merit. Free for three stamps, Gratis to customers.
JOHN WATKINS, Fruit and Potato Grower, Pomona Farm, Withington, Hereford.

To the Trade.
SEED POTATOS.
H. AND F. SHARPE are prepared to make very advantageous offers of their fine selected stocks of SEED POTATOS to purchasers of a quantity. Their SPECIAL PRICED LIST comprises all the best and most productive varieties in cultivation.
Seed Growing Establishment, Wisbech.

SALES BY AUCTION.

Wednesday Next.—(Sale No. 7399.)
SPECIAL SALE of ORCHIDS in FLOWER.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, April 20, at half-past 12 o'Clock precisely, a grand Collection of ORCHIDS, in Flower and Bud, comprising some splendid forms of Odontoglossum Pescatorei, a specially fine O. luteo-purpureum, with spike of eighteen flowers; many O. Alexandræ, one superb variety being deeply blotched and spotted; O. Andersonianum, O. Roezlii, O. Edwardii, some very fine O. vexillarium, and O. hystrix; Cattleya Mendelii, with pure white sepals and petals and dark lip; Lælia purpurata, Dendrobium Ainsworthii, and D. Ainsworthii roseum, Masdevallia Harryana splendens, M. conchiflora, M. Chelsoni, Cœlogyne cristata, Chatsworth variety, &c.

On view morning of Sale, and Catalogues had.

Wednesday and Thursday Next.
10,000 grand Bulbs of LILIUM AURATUM received from Japan in the finest possible condition.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY and THURSDAY NEXT, April 20 and 21.

On view mornings of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7400.)
IMPORTED and ESTABLISHED ORCHIDS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, April 21, at half-past 12 o'Clock precisely, by order of Messrs. Shuttleworth, Garder & Co., a fine importation of CATTLEYA MENDELII, C. MOSSIÆ, O. CRISPUM (ALEXANDRÆ), the best type in splendid condition; ONCIDIUM SP., O. PAPILIO MAJUS, CYRTOPODIUM PUNCTATUM, ESTABLISHED PLANTS in variety, &c.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7400.)
BURMESE, BRAZILIAN, and COLOMBIAN ORCHIDS.
Received Direct.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, April 21, at half-past 12 o'Clock precisely, a wonderful importation of CYMBIDIUM species (probably C. LOWIANUM) in enormous masses, DENDROBES in variety, and other BURMESE ORCHIDS; also fine pieces of CATTLEYA GUTTATA, C. DORMANIANA, ONCIDIUM SARCODES, LÆLIA CINNABARINA, IONOPSIS PANICULATA, &c., from Brazil; some fine pieces of the Popayan variety of CATTLEYA TRIANÆ collected by Mr. F. C. Lehmann, &c.

On view morning of Sale, and Catalogues had.

Saturday Next—(Sale No. 7402.)
First-class Standard and Dwarf ROSES, including most of the leading varieties, FRUIT TREES of sorts, HARDY SHRUBS and CONIFERS, a great quantity of BORDER PLANTS, Barr's FLAG IRIS-LILIUMS, GLADIOLI, SPIRÆAS, &c.

MR. J. C. STEVENS will SELL the above by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on SATURDAY NEXT, April 23, at half-past 12 o'Clock precisely.

On view morning of Sale, and Catalogues had.

Wednesday Next.
10,000 LILIUM AURATUM from Japan, 800 L. NEILGHERRENSE, magnificent Bulbs of L. GIGANTEUM, and many other rare LILIES, AZALEAS, PALMS, and other PLANTS from Belgium and elsewhere; Dwarf ROSES by name, CARNATIONS, PICOTEES, Japanese IRIS, English-grown LILIES, PANSIES, and a great variety of HERBACEOUS PLANTS.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on WEDNESDAY NEXT, April 20, at half-past 12 o'Clock precisely.

On view morning of Sale, and Catalogues had.

Wednesday Next.
IMPORTANT SALE of LILIES.
10,000 LILIUM AURATUM.
800 L. NEILGHERRENSE.

MESSRS. PROTHEROE AND MORRIS will include in their SALE on WEDNESDAY NEXT, April 20:—

10,000 LILIUM AURATUM, very fine Bulbs, from Japan.

Also from the New Plant and Bulb Company, who are relinquishing business, without the least reserve—

800 grand Bulbs of LILIUM NEILGHERRENSE, magnificent Bulbs of L. GIGANTEUM, L. WALLICHIANUM, 2000 TIGRIDIAS of sorts, rare Seeds; BEGONIAS, &c.

On view morning of Sale, and Catalogues had.

Friday Next.
Very fine importations from the Brazils just to hand per s.s. *Mondego*.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, April 22, at half-past 12 o'Clock precisely, a splendid Importation of BRAZILIAN ORCHIDS, consisting of a fine lot of Cattleya Dormaniana, Oncidium Marshallianum, Sophronites grandiflora, Lælia Dayana, L. Perrinii, Burlingtonia fragrans, Zygopetalum Mackayi, Oncidium concolor, and O. crispum, Miltonia spectabilis, M. candida, and others, the very beautiful Ionopsis paniculata, &c.

On view morning of Sale, and Catalogues had.

Friday Next.
SACCOLABIUM BLUMEI.

MESSRS. PROTHEROE AND MORRIS will include in their ORCHID SALE on FRIDAY NEXT, April 22, from Mr. Sander, a splendidly healthy lot of SACCOLABIUM BLUMEI, just received with fine green leaves, the whole in extra fine condition.

Friday Next.
WHITE LÆLIA ANCEPS, IMPORTED DIRECT, and OTHER VALUABLE MEXICAN ORCHIDS.

MESSRS. PROTHEROE AND MORRIS will include in their SALE of ORCHIDS, on FRIDAY NEXT, April 22, a splendid lot of a beautiful white Lælia anceps, collected in the locality from whence came the grand and new white varieties, Lælia anceps munda, and Lælia anceps Kienasliana (see *Gardeners' Chronicle*, March 6, 1886). These varieties have flowered. L. anceps Kienasliana has a pure white lip, with crimson blotch, and pure white sepals and petals, the latter having a rosy hue, and very dark tips, and are also very broad and fine. L. anceps munda is similar to Stella, but flower is rounder, and the yellow on lip runs almost to the edge. At the same time will be offered a superb lot of Lælia anceps Barkeri, all well-leaved, compact, and with sound eyes. A fine lot of Cœlia macrastachya, Oncidium ornithorrhynchum, O. incurvum, Sobralia macrantha, Epidendrum raniferum, Brassia species, and other fine things.

On view morning of Sale, and Catalogues had.

Monday, April 25.
IMPORTANT AND SPECIAL SALE.

44 Cases of ORCHIDS from the Brazils, comprising 100 Lælia elegans, grand masses; 200 Oncidium sarcodes, 200 O. concolor, O. curtum, O. crispum, 100 O. Marshallianum; 100 Lælia Perrinii, 300 very fine L. purpurata; Colax jugosus, Zygopetalums; 300 Cattleya intermedia, and 200 Oncidium dasytyle. The whole collected by Mr. J. D. Osmers, and brought home by him. They are in splendid condition, and the whole consignment will be Sold without reserve, no plants being retained.

Also 500 Odontoglossum Alexandræ received direct, and also for Sale without reserve.

MESSRS. PROTHEROE AND MORRIS will SELL the above at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on MONDAY, April 25, at Half-past 12 o'Clock precisely, without reserve.

On view morning of Sale, and Catalogues had.

Willesden Green.
By Order of the Executrix. SMALL FREEHOLD NURSERY, with Two Greenhouses; also in Lots, the Stock of Shrubs, Plants in Pots, &c.
Important to Young Beginners.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, on the Premises, The Nursery, Strode Road, Willesden Green, on TUESDAY, April 26, at 1 o'Clock precisely.

May be viewed. Catalogues had of Mrs. Van Celst on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

Orchids in Flower.
SPECIAL SALE, APRIL 26.

MESSRS. PROTHEROE AND MORRIS beg to announce that their NEXT SPECIAL SALE of ORCHIDS in FLOWER, will take place on TUESDAY, April 26, and they will be glad to receive notice of entries in due course.

East Dulwich.
By order of the Mortgagees.—Most favourably situate about 5 miles from London and 5 minutes' walk from Champion Hill Railway Station.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, at the Mart, Tokenhouse Yard, City, E.C., on THURSDAY, April 28, at 2 o'Clock precisely, the valuable LEASEHOLD NURSERY and MARKET GARDEN, known as the Suffolk Nursery, Goose Green, East Dulwich, comprising 3 a. 0 r. 11 p. of very fine Garden Land, 22 Greenhouses measuring 27,000 super. feet, 5000 feet of Hot-water Piping, 7 Boilers, Conservatory, Seed Shops, with a Brick-built detached modern Residence. Held for an unexpired term of 13 years, at the very low ground rent of £31 5s.

May be viewed. Particulars, Plan, and Conditions may be had at the Mart; of J. White, Esq., Solicitor, Bank Buildings, Ludgate Circus, E.C.; and of the Auctioneers, 67 and 68, Cheapside, E.C.; and Leytonstone.

The Downside Collection of Orchids.
Highly IMPORTANT SALE of selected duplicate plants from this renowned Collection, consisting chiefly of plants matchless in point of rarity and culture.
By order of Wm. Lee, Esq., in consequence of the overcrowded state of the houses.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to SELL by AUCTION, on the Premises, Downside, Leatherhead, on TUESDAY and WEDNESDAY, May 3 and 4, at half-past 12 o'Clock precisely each day, selected duplicate and other ESTABLISHED ORCHIDS, amongst which the following choice kinds will be found:—

Cattleya Trianæ Lecana
,, ,, Dayana
,, Emperor
,, ,, alba, true
,, ,, Eboracensis
,, ,, Thompsonii
,, ,, Osmanii
,, ,, Dodgsonii
,, ,, Emiliæ
,, ,, Backhouseana
,, ,, Colemani
,, fausta
,, labiata, autumn-flowering
,, calummata
,, Mardelli
,, Skinneri alba
,, Mendelii Selborneusis
,, ,, Morganiæ
,, exoniensis
,, Rothschildiana
Lælia elegans special varieties
Lælia anceps Dawsoniæ
,, Wolstenholmeana
,, Amesiana
,, bella
,, Veitchiana
,, flammea
,, grandis
Phajus tuberculosus
Cymbidium Parishii
Pachystoma Thomsonii
Saccolabium Heathi
,, Harrisonianum
Dendrobium Phalænopsis
,, Harveyanum
,, nobile nobilius
,, Falconeri giganteum
Maxillaria Sanderiana
Masdevallia Harryana
Bull's Blood — true and many other splendid varieties
Cypripedium Stonei platytenium
,, grande
,, microchilum
,, selligerum majus
,, Arthurianum
,, Wallisii
,, Leeanum Superbum
,, euryandrum
,, vexillarium
,, Morganiæ
,, tesselatum porphyreum
Cœlogyne cristata alba
,, Lowi
Odontoglossum Hrubyanum
,, Rigidum
Vanda tricolor planilabris
,, Pattersoni
,, Sanderiana

The Plants may be viewed any day prior to the Sale on presentation of Catalogue or card to view, to be obtained of Mr. WOOLFORD, the Head Gardener, on the Premises, and of the Auctioneers and Valuers, Central Auction Rooms, 67 and 68, Cheapside, London, E.C.

Pewsey, Wilts.
By order of the Trustee under a Deed of Assignment.
IMPORTANT SALE of the well known and valuable COLLECTION of EXHIBITION PLANTS (so successfully shown by Mr. J. F. Mould, at the principal London and Provincial Shows), GREENHOUSE PLANTS and NURSERY STOCK, together with the Goodwill of the Business.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL the above, on the Premises, early in MAY.

Fuller particulars will appear in future advertisements.

To Horticulturists and Others.
HANS NIEMAND'S CELEBRATED NURSERIES, situated in the Harborne Road, Edgbaston, Birmingham; together with a Roomy DWELLING-HOUSE, COTTAGE, 25 GREENHOUSES, many FRAMES and PITS, OFFICES, &c., GOODWILL of the Business, and the whole of the splendid Collection of STOVE, GREENHOUSE, and other PLANTS.

MESSRS. THOMAS AND BETTRIDGE will SELL by AUCTION, in One Lot, as a Going Concern (by direction of the owner, who is retiring from the Business on account of ill-health), at the Estate Sale-room, 1, Newhall Street, Birmingham, on THURSDAY, April 28, at half past 6 o'Clock P.M., subject to Conditions incorporating those of the common form conditions of the Birmingham Law Society (unless previously disposed of by Private Contract)—the above Valuable and Widely-known HORTICULTURAL PROPERTY, held under two leases, viz., as to about 3560 square yards of Land, for forty-two years from 25th March, 1882, subject to an annual ground-rent of £15 for the first twelve years, and of £20 a year for the remainder of the term (this lease is determinable at the option of the lessee at the end of the first twelve years); and as to the remainder, comprising about 7750 square yards, for a term of ninety-nine years from 25th March, 1825, at an annual ground-rent of £27.

This Nursery has a name second to none in the locality for its magnificent floral productions. There is a first-class connection at the present time, and the Sale affords an excellent opportunity for any one wishing a Business of so refined and elevating a character.

The Nurseries may be viewed any day prior to the Auction, and the Dwelling-houses by cards only, to be obtained from the Auctioneers fourteen days before the Sale.

For further particulars and lithographic plans, apply to Q. C. COLMORE, Esq., Solicitor, 27, Waterloo Street; or the Auctioneers, 11, Temple Row, Birmingham.

Friday, April 22, 1887, at St. Vincent's, Grantham.
IMPORTANT SALE of STOVE, GREENHOUSE, and other SPECIMEN PLANTS. Catalogues issued on application.

FOR DISPOSAL,
MARCH 25, or after,
MR. LAING'S NURSERY, Twickenham.

Owing to the Death of Mr. LAING, this LONG-ESTABLISHED NURSERY, occupied by Mr. LAING for the last fifty years, with Lease, Goodwill and Stock of GREENHOUSES, PITS, SHRUBS, PLANTS, and IMPLEMENTS, for EARLY SALE. 5 minutes' walk from St. Margarets; 15 minutes' walk from Twickenham; 20 minutes' walk from Richmond. All Stations of the S.-W. Railway, close to the new residential neighbourhood of St. Margarets, and ten minutes' walk from centres of Richmond and Twickenham towns respectively. As a Home Nursery, held with land at Teddington on Twickenham Common (as done by Mr. Laing), or as a Nursery for a London Shop, a Market Grower, or for an energetic man wishing to commence business with a long-established connection, the opportunity is unexceptional. Particulars now ready.

Apply to GEORGE PAUL, The Old Nurseries, Cheshunt.

London, 30 Miles from.
OLD ESTABLISHED NURSERY BUSINESS, with an extensive connection. Satisfactory reasons for disposal.

MESSRS. PROTHEROE AND MORRIS are instructed to find a Purchaser for one of the oldest established Nursery Businesses within a similar distance from London. The incoming would be subject to valuation, or a Partnership would be entertained.

Full particulars of Messrs. PROTHEROE AND MORRIS 67 and 68, Cheapside, London, E.C.

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Surrey, 18 miles from London midway betwixt two stations, and in the midst of a district where there is a local demand.

TO BE LET on LEASE or SOLD IMMEDIATELY, owing to owner's ill-health, an excellent FRUIT GARDEN, well stocked, about 12 acres in extent (more or less Land could be had as desired), with numerous Glass Erections, including Vinery, Strawberry, and Tomato Houses, and several Pits. All heated.

Substantial brick-built 7-roomed Cottage, also Stabling, Cart-shed, Cow-shed and other Buildings, Fruit, Seed Potting and Washing Sheds. Terms of

WATERER AND SONS, Land Agents, Chertsey.

Swanley.
LAND TO LET, suitable for small Fruit Farm or Orchid Grower—6 acres—adjoining Hextable Manor House.

Apply to W. J. MYATT, 23, Abchurch Lane, London.

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EVERGREEN BROAD-LEAVED PRIVET.
10,000 fine bushes to be sold.
WILL TAYLER, Osborn Nursery, Hampton, Middlesex.

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FLORIST and SEEDSMAN,

PROSPECT HOUSE, BELPER, DERBYSHIRE,

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DESCRIPTIVE LIST of Florist Flowers 4d. stamps, or free to customers.

PANSIES.—A specialty, probably the best collection in England; the cream only of the most noted raisers, the latest new sorts, and the winners at all the great shows. Good plants, correctly named, show or fancy. Twelve for 3*s*., twenty-five for 5*s*. 6*d*., 100 varieties for 20*s*. Postal order free.

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PINKS.—Beautiful pure white garden, deliciously scented. Good strong plants, to bloom well, six for 1*s*., twelve for 1*s*. 6*d*., free.

AURICULA.—Pure snow-white, one of the most beautiful hardy spring flowering plants in cultivation. Two for 1*s*., free.

SWEET WILLIAMS.—Auricula-eyed; Hunt's improved, Barlow's strain, double varieties, extra dark and other fine strains. Good blooming plants, 1*s*. per dozen, free.

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POLYANTHUS, Novelty; beautiful new white. Strong plants, full of bloom-buds. Twelve for 1*s*. 6*d*., six for 1*s*., free.

COLLECTION of twelve HARDY BORDER PLANTS, distinct and very fine varieties, 2*s*., free.

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The highly fertilising properties of this Manure render its money value in comparison with other manures at least double; and users will find that very small quantities will produce favourable results.

Sold in new and enlarged Tins, 1/-, 2/6, 5/6, 10/6, and 21/- each; and in Kegs at reduced prices—28 lb., 12/6; 56 lb., 23/-; 112 lb., 42/- each.

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200,000 BEDDING and GREENHOUSE PLANTS.
See advertisement in *Gardeners' Chronicle*, March 26. Send for CATALOGUE with reduced prices, post-free on application.
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WILLIAM BADMAN offers as under, from Store-pots, all well-rooted, and fit for present potting. The present is a good time for making up losses sustained during the winter:—
VERBENAS, Purple, White, Scarlet, Crimson, Rose, 6*s*. per 100, 50*s*. per 1000; 12 choice named varieties, 8*s*. per 100.
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HELIOTROPE Jaun d'Amour, Miss Nightingale, dark, 6*s*. per 100, 50*s*. per 1000.
AGERATUM Imperial Dwarf, blue, 5*s*. per 100, 40*s*. per 1000.
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TROPÆOLUM Vesuvius, 8*s*. per 100; coccinea elegans, best dwarf scarlet, 10*s*. per 100.
FUCHSIAS in twelve good named sorts, 8*s*. per 100.
PELARGONIUMS, Show and Decorative, from single pots, good, 20*s*. per 100, 3*s*. per dozen.
NOTE.—Not fewer than twenty-five of any one sort supplied at above rate. Packing included. Terms Cash.
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CATALOGUES on application.
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☞ The Rhododendrons in Rotten Row and the Botanic Gardens, Regent's Park, are supplied by
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3-yr., strong transplanted, 20*s*. per 1000.
4-yr., extra strong, fit for forcing, 25*s*. per 1000.
Good Planting SEAKALE, 4*s*. and 5*s*. per 100.
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H. AND F. SHARPE will be pleased to give special quotations for all their fine selected stocks of the above-named Seeds of 1886 growth. Their prices will be found very advantageous to purchasers.
Seed-growing Establishment, Wisbech.

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Myatt's Prolific Ashleaf	White Elephant
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Other varieties in stock.
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CARNATIONS and PICOTEES.—Finest Exhibition sorts, from 6*s*. per dozen; over 400 varieties. PANSIES, all the leading sorts in Show and Fancy, from 4*s*. per dozen. Double PYRETHRUMS, 6*s*. per dozen. Descriptive Priced CATALOGUES of Carnations, Picotees, Hollyhocks, Dahlias, and Pansies post-free.
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2,000,000 CABBAGE PLANTS, best Market and Cattle varieties. Also LETTUCE, Tripoli ONIONS, BRUSSELS SPROUTS, Savoy and Red Pickling CABBAGE. Write for LIST, and state what quantity required; will give low quotations.
EDWARD LEIGH, Ivy House Farm, Cranleigh, Surrey.

NEW TREE CARNATIONS.—We can now offer our Pink Souvenir de Malmaison, in 4-inch pots, at 3*s*. 6*d*. per pair, or 18*s*. per dozen. Trade price on application.
CLARK AND CO., Nurserymen, Seedsmen, and Florists, North Shields.

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1*s*. each, or 6*s*. per dozen.
JOHN DOWNIE, Beechhill Nursery, Murrayfield, Edinburgh.

PLUM STOCKS.—Extra clean and straight, 3 to 4 feet, 40*s*. per 1000; 2 to 3 feet, 30*s*. per 1000. MYROBALANA PLUM, 2 feet, 24*s*. per 1000.
GARLIES MITCHELL, Stranraer.

SIMPLE INSTRUCTIONS, by which anybody, anywhere, may force and obtain a great quantity (lasting until outdoor beds are in full bearing), of most excellent ASPARAGUS, at a very trifling expenditure of time or money. Directions sent free to all applicants.
RICHARD SMITH AND CO., Nursrymen and Seed Merchants, Worcester.

100 DECIDUOUS SHRUBS, in 50 distinct varieties, for 22*s*.
100 EVERGREEN SHRUBS, in 50 distinct varieties, for 32*s*.
100 CONIFERS, in 50 distinct varieties, for 52*s*.
All or any of the above, or half the number of each at half price, sent package free and carriage paid to Leith, Newcastle, Hull, or London, for cash with order.
MORRISON BROTHERS, Nurseries, Aberdeen.

SEED POTATOS.
Guaranteed True Stocks.
VEITCH'S ASHLEAF.
RIVERS' ASHLEAF.
ALBION KIDNEY.
LADY TRUSCOTT.
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1887—DAHLIAS—1887

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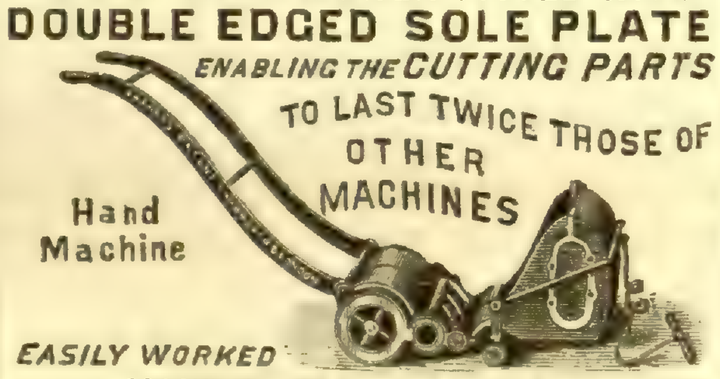

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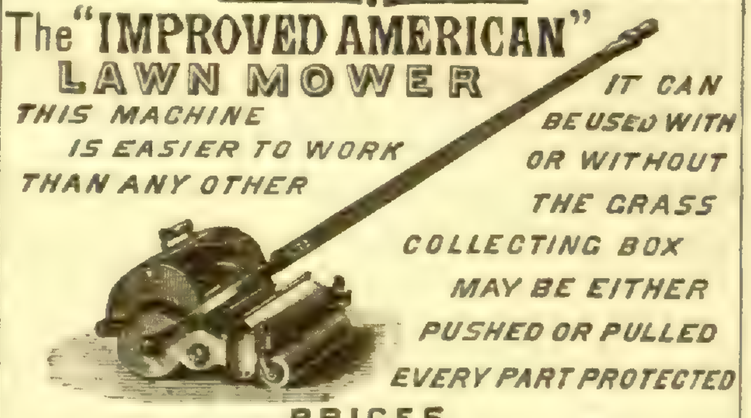

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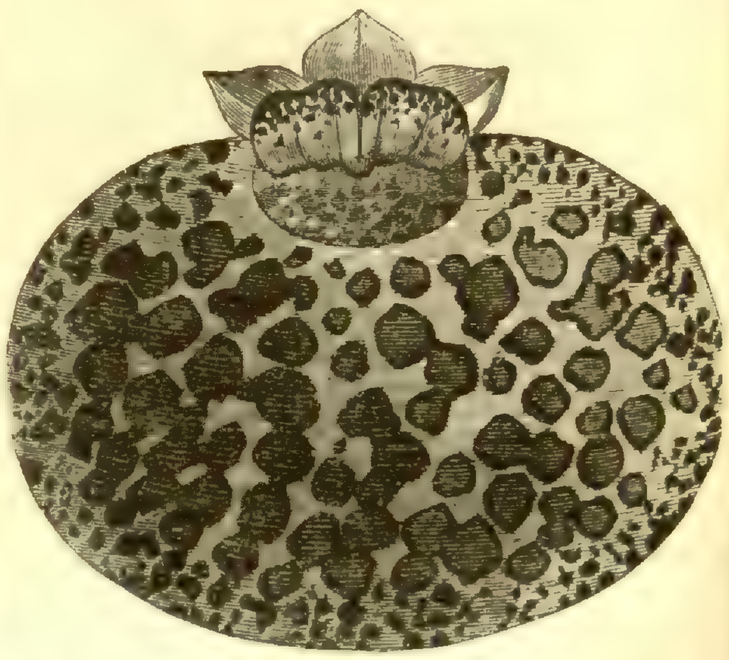

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THE
Gardeners' Chronicle.
SATURDAY, APRIL 16, 1887.

MILTON'S COTTAGE IN BUCKS.

At the time of the Plague of London, Milton's friend, Thomas Elwood, the Quaker, secured for him a cottage at Chalfont St. Giles, in Buckinghamshire, "a pretty box" as the poet called it, where he remained till the danger was past, in one of the quietest of villages. An engraving of the little cottage accompanied a brief account of the circumstances of Milton's removal to this humblest and possibly happiest of his several homes, which appeared in the *Penny Magazine*, in March, 1841. The porch before the front door, standing in the garden, where Milton, sightless as he was, loved to pass the time sitting in the sun, a little retired from the road, had been removed, I understood, and I determined to pay my visit at once, before the rest of the fabric had been taken away piecemeal to the United States and other places, by admiring pilgrims.

The demand for relics, and their value, fluctuate unaccountably, according to the circumstances. I have collected chips at Hawarden and Cedar cones from the lawn at Hughenden, borne by trees whose seed Lord Beaconsfield as a youth brought from the East during that famous tour, when he wrote the letters to his sister, which were published not long since. These chips and cones are genuine relics whose authenticity can be attested, and at some future time any person who possesses them will be certain to esteem them very highly. But at present there are many people who would not admire the chips much, while others would detest the cones. Reputations, like the Cheddar cheese which Archdeacon Dennison has preserved for forty years under a glass case in his hall, take a long time to mellow. Milton's is now ripe, and large quantities of chips and bits of wood from his cottage at Chalfont St. Giles are annually in demand.

Visitors are not allowed to help themselves, but any quantity of mementos can be ordered for future delivery, and tons weight are sent annually

to America. The wonder is the little house should still remain intact, especially the staircase, which has gone to the United States by the shipload without suffering any visible diminution.

Mr. Ruskin says most truly that the best way of touring about the country is on foot, pacing slowly; and I enjoyed this luxury, costly though it be in time, when visiting Chalfont St. Giles. The Cowslips were in full blossom in the pastures, and all the spring flowers were opening in the fields, while in gardens the Dutch bulbs were past their best blossoms, and the bedding season was at hand when I quitted less delectable scenes and pitched my tent at Rickmansworth for a short time. There are several noted places with famous gardens near the town, such as Moor Park, within a mile, Cassiobury, near Watford, and Harefield Place, which Milton himself described as

"Bosom'd high in tufted trees,
Where, perhaps, some beauty lies,
The cynosure of neighbouring eyes."

Slow pacing through a chalk district well covered with soil, with woods and Cherry orchards for its ornament, I came to the village of Chenies, a pretty spot of rural yet aristocratic appearance. The green and its Elm trees are rural, but the cottages surrounding it bespeak a wealthy owner. The ancient family of Cheyne were succeeded here by the Sapcotes, who were merged with the Russells by marriage of the last heiress with the first Earl of Bedford. The Russells occupied the old Manor House near the church, now partly inhabited as a farmhouse, long enough before removing to Woburn to convert it into a first-rate sixteenth century mansion with a quadrangle, one wing of which alone remains solidly built of red brick, with many ornamental chimneys. Chenies, and the tomb of the great family who still return here to be buried, were the subject of one of Mr. Froude's most attractive articles in *Fraser*, and one of the most vivid accounts of a day's trout fishing since the days of Isaac Walton wound up the article.

The rest of the road to Chalfont St. Giles lay through a more open country, with the chalk nearer to the surface, and the woods less frequent. The village lies a little off the main road from Amersham to London, on a by-road leading to Beaconsfield, and Milton's cottage, with his armorial spread eagle on the front, is the last house on the left-hand side of the quiet street, having its gabled end abutting on the road. A row of ordinary cottages stands near it, and the cottage itself, instead of having Milton's name inscribed on it, as at one time, has the words "County Police Station" instead. The policeman who now resides in this shrine, which William Howitt placed among his "Shrines of the Poets," formerly had charge of Hughenden, when the owner was premier and dynamite was much in vogue. He described Lord Beaconsfield as sometimes sauntering down the park after lunch, when he would sit in the garden of the lodge, where passengers might just perceive the figure of the Prime Minister of England, as he sat there, secure from observation, in the garden of an old retainer. The end of a cigar might be seen, too, blushing when lighted with matches from the cottage. But this was make-believe, an amiable trick not unknown to that great man.

Sitting on the garden bench admidst Sweet Brier and Roses, Vivian Grey would nod off, and the cigar would drop from his hand. A very short repose sufficed, and he would resume his stroll, passing over the green sward, up the slope of his park, and pausing occasionally to look around.

A pleasant enough bit of agricultural scenery lies around Milton's Cottage, a garden and a pasture, and a rather level land. The beehives in the garden are cosy looking, and the creepers on the house wall suit the old-fashioned style of this last but one of Milton's many homes. As for the scenery around the dwelling, the beauty of a landscape had become a matter of indifference to him—all outlooks were alike; and as one thinks of the blind poet sitting here in the sun, or taking his glass of water and pipe at night—for some blind folk do smoke, though not many—one naturally recalls those pathetic lines in *Samson Agonistes*:—

"O, loss of sight! of thee I most complain."

Byron was, of course, a reader of Milton, and perhaps one of his short criticisms of *Paradise Lost* conveys more than many longer ones; "A little heavy," he said, "but not less divine!" Yet Milton only, of all the poets, could have imagined such exquisite imagery as the following verses, which may be welcome here, as they refer to flowers and their characteristics:—

"Bring the rath Primrose that forsaken dies,
The tufted Crow-toe, and pale Jessamine,
The white Pink, and the Pansy freak'd with jet,
The glowing Violet;
The musk Rose, and the well-attired Woodbine,
With Cowslips wan, that hang the pensive head,
And every flower that sad embroidery wears;
Bid Amaranthus all his beauty shed,
And Daffodillies fill their cups with tears,
To strew the laureat hearse where Lycid lies."

After the completion of *Paradise Lost* the poet showed the manuscript to his friend and neighbour, Mr. Elwood. "But what has thou to say of Paradise found?" inquired Elwood. Milton was silent, but he gave an answer afterwards in *Paradise Regained*. There are two rooms only on the ground floor of the little cottage—a small parlour on the right, and a more spacious but very low apartment on the left, where *Paradise Lost* and the commencement of *Paradise Regained* were dictated to Elizabeth Minshull, "the third Mrs. Milton," as Byron called her. And here Mr. Howitt, visiting this "shrine" twenty years ago, found the occupier of the house at that time a tailor, seated on the table and engaged with his apprentice stitching trousers. After the Plague Milton returned to Bunhill Fields, and his next house was a still more narrow one than this, in the church of St. Giles, Cripplegate, where he rested in 1674.

H. E.

GUILDFORD CASTLE.

[We are indebted to Mr. A. G. Jackman, of Woking, for the plan illustrated in figs. 97, 98, and showing his proposals for laying out the grounds of Guildford Castle as a pleasure-ground. Ed.]

The Castle keep (fig. 98, 1) stands on the south side of the town, on an artificial mound about 30 feet high. The fortress of which it once formed the principal part or tower, was undoubtedly of very considerable extent, for its outworks are to be traced among many of the surrounding dwelling-houses, and several caves or vaults existing in its vicinity are supposed to be connected with it.

In its original state the structure probably covered from 5 to 6 acres of ground. The keep is, however, the only remnant of the building which has retained its outward form, and the solidity of its construction appears to have defied the dilapidating hand of Time. It is of a quadrangular shape, and measures at its base from east to west 47 feet, and from north to south 45 feet, and it is about 70 feet in height. The walls are in many places 10 feet in thickness, but they vary considerably.

From the summit of the picturesque and crumbling ruin we explore with additional pleasure the landscape around. The windings of the river and St. Catherine's Hill, dotted at the base with cottages and surmounted by its picturesque chapel; the commanding heights and extensive woodlands in the distance, and the town seen with a bird's eye view beneath.

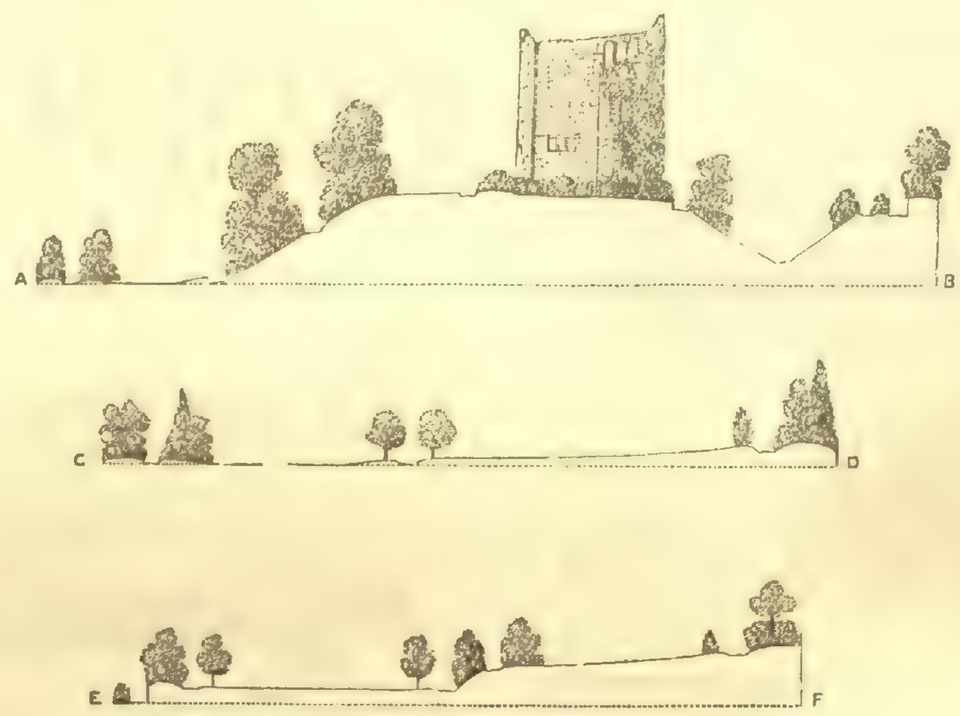

Fig. 97.—Sections showing the level of the ground. (see fig. 98.)

Neither history nor tradition informs us by whom or at what time it was built, but some authorities have been disposed to give it an existence prior to the Norman Conquest; others, and perhaps on more reasonable data, have referred the date of its erection to the eleventh century, as the nature of its construction and the style of architecture bear considerable resemblance to the existing remains of most of the fortresses built at that time. Its earliest mention by name in our annals occurs in the reign of King John. When, on May 30, 1216, Prince Louis, the Dauphin of France, landed at Sandwich to invade the country, King John being at that time at Dover with his forces, fled from there, desolating the territories of the rebellious nobles on his road to Guildford, which he shortly left to pursue his march westward. In June following, it is recorded that Prince Louis, in his triumphant progress through the same district, in three succeeding days procured the surrender of the castles of Reigate, Guildford, and Farnham.

But there is a charter to the Abbey of Walden dated from Guildford by King Stephen, in 1136, so it has been conjectured that the monarch must have resided at the Castle. From the year 1216 its records furnish us with very mean and scanty details, but in the following reign, in the year 1299,

it was assigned to the Queen Consort, Margaret of France, as a part of her dowry. In the first year of King Richard II. we find that it had for its constable Sir Simon Burley, who was rendered illustrious from having been selected by King Edward III. and the Black Prince to superintend the education of Richard; but in the year 1388 he perished on the scaffold. In process of time this fortress gradually became neglected, and lost its importance, being used as a common gaol till the reign of Henry VII. We hear nothing more of it until the time of James I., when it was granted by royal patent to Francis Carter, Esq., by whose descendants it was held till 1813, when it was sold to the late Duke of Norfolk, but it has since been the walks which ascend to the Castle keep were so designed as to give as easy a gradient as possible without making them too long. A good thick shrubbery was designed to be planted against the boundary walls on the north side so as to completely shut out all unsightly views of the houses and buildings in Castle Street.

It will be seen that inside the ruins (2), which are situated on the left hand side of the entrance in Castle Bottoms, near the Castle Arch (3), I proposed making a rockery (6), to be planted with Ferns and plants as generally grow in such situations, and which would therefore, make quite a feature in the grounds. The great drawback to these grounds is the Castle Bottoms (D, E), a public footpath Street, and to substitute an ornamental iron fence. It would also be a great improvement to the approach at the top of Castle Bottoms if the small corner of land dotted off on plan could be bought. The means of connecting the two grounds is by a small rustic bridge (5) at the top end, also by a flight of steps and two gates half-way down Castle Bottoms, as persons at one end of the grounds need not go to the other to get across. Other references are as follows:—Summer-house (4). Spaces are provided for lawn tennis and small games. Flower beds (9) and seats (10) are distributed over the grounds for use and ornament. The lodge (7) was formerly a dwelling-house, which I proposed should be altered for the above purpose. The letters A B, C D, E F,

Fig. 98.—PROPOSED PLAN FOR LAYING OUT THE GROUNDS OF GUILDFORD CASTLE.

property of the Right Hon. Lord Grantley, until last year, when the Corporation bought it with the ground adjoining, to be laid out as a public pleasure-ground and promenade—a design and section of which (figs. 97, 98) I prepared and submitted to them, and about which I now make a few observations explanatory of my views on the subject, and of the special features contained in the plan.

The ground is naturally very undulated, and I proposed to retain its present form as much as possible round the keep (1), as being one of only a very few examples to be met with in this country, and having the above historical associations. I therefore thought the less that was done to alter the present levels of the ground the better, as also from a consideration of the unfavourable nature of chalk soil. All vegetable matter suitable for growing trees and shrubs is only to be found on the surface. The circuitous running through them, which being walled in has a very objectionable appearance both from within and without, but I proposed to overcome this by pulling down the wall which divides it from the grounds on the Castle side, and to put up an ornamental iron fencing (the other wall cannot be pulled down as the level of the ground on the other side is at the top of the wall, see section C, D); then by planting the border between it and the walk inside, the wall would be hidden from the grounds, and people passing through the Castle Bottoms would have the pleasure of a sight of the Castle and grounds. I might here mention that the walk I have drawn on the top of the slope running parallel with Castle Bottoms, but inside the proposed fence, was so designed to enable people in the grounds to have a good view of the Castle on that side. I also proposed to pull down the very high and unsightly wall at the entrance in Castle refer to the sections shown on p. 510. *A. G. Jackman, Landscape Gardener.*

AMATEURS' NOTES.

ODONTOGLOSSUM ROSSI MAJUS
(White-crested Form).

There is at present flowering, for the second time with me, a plant of O. Rossi majus exactly similar to the one described by your correspondent, W. Swan, at p. 384. It is the only one out of an imported lot bought at Stevens' salerooms which has produced blooms bearing a white crest, the effect of which is very pretty, as it gives the whole bloom a distinct and refined appearance. All the flowers it bore last year, as well as those now open, have the crest white. *J. T. Poë, Riverston.*

Plants New or Noteworthy.

ODONTOGLOSSUM + HISTRIONICUM.

Baron J. H. W. von Schröder has most kindly favoured me with this marvellous thing. I must confess that I have seen quite enough of those crispums and crispoids, so that they usually make me not very happy when they peep out of the boxes of my correspondence. Quite another case this time; I felt quite full of pleasure at the sight of this charming heart-winning plant, amusing in the colours of a harlequin. Take a good large-flowered Odontoglossum crispum var. Blunti, with elongate sepals and petals, give it an exceedingly broad lip of the genuine Odontoglossum deltoglossum, a single keel at the base, furcate in front, with a very obscure angle above each side. The ground colour of the sepals and wavy toothletted erose petals is a whitish, lightest, undecided ochre. A most elegant border of deep sepia-cinnamon spots runs around the sepals and petals. The disc of the sepals shows a few larger partly-lobed sepia-cinnamon spots, the disc of the petals is adorned with a greater number of smaller ones. The lip is rhomboid, very broad, acuminate, toothletted, angulate, broken onthe superior half, so as to appear cordate, yellow, with some sepia-cinnamon blotches and marks. Column angulate, with very small dolabriform wings, light ochre-yellow, with brown marks. It does not answer to any one of the things I have had before, therefore I name it + histrionicum. This sign of an erect cross means that I am not in the least inclined to regard the plant as what we call a species. Yet we have not the least knowledge what it is. The growers give us no assistance. There is fine scope for enlightened people to teach us the development of the seeds of Odontoglossums, and there may come a day when we may understand the riddles Nature offers us. I might have called it Odontoglossum hebraicum aspersum—that fine variety with purple-mauve small areas—were it not for the great breadth of the sepals, petals, and most of the lip, and for the simplicity of the callus. I had branches of astonishing beauty of that variety from a plant of the Baroness Alice de Rothschild, kindly sent me by Mr. F. Sander. *H. G. Rchb. f.*

Cypripedium almum ×, *n. hyb. Angl.; educ. ab exc. Norman Cookson.*

This is a fresh product of the indefatigable assiduity of Mr. Norman Cookson, kindly sent me by Mr. F. Sander. It is stated to be the fruit of crossing Cypripedium barbatum and C. Lawrenceanum. The leaf is of a pallid greyish-green, with a few distant hieroglyphic dark tessellations. The long red hairy peduncle has a very short bract, and a much longer ovary, green, with brown ribs. The dorsal sepal is the grand attraction of the flower—unusually fine. It is transverse, white, with very broad, clean purple, radiating nerves, which usually are green at the base. There are also some short green nerves between the inner ones. Lateral sepals connate into a narrow, short, partly purple body. Petals divaricate, a little falcate, ligulate acute, brownish at the top, green on the dorsal side against sepal, whitish, with dark green nerves on the inferior sides, with a median dark brown nerving, ciliate on the edge, with six to seven dark blackish thick calli on superior, four such spots on inferior side. Lip very dark, as in Cypripedium barbatum. Staminode forcipate, with an apiculus on the retracted median portion, much as in Cypripedium barbatum, light brown with green nerves.

The first flower I obtained had a very fine purple zone between the nerves, running parallel to the outer border of the lateral sepals. I devised therefore an "appropriate" name. Now there come two flowers, one of which has an interrupted zone, but the other has none at all. According to my extensive sad experiences I really shrink from those names given from qualities observed only in a single or in a few specimens. Linnæus wrote in favour of the system. If I am not mistaken Fabricius, the North German entomologist, was the first who simply said, "*optima sunt nomina quæ nihil significant.*" *H. G. Rchb. f.*

Galeandra flaveola, *n. sp.**

A nice Galeandra, just introduced by Messrs. Linden, Directors of the new Society d'Horticulture Internationale of Brussels. It is strong in its habit. The stem at hand exceeds a span, and is rather thick towards the base. The whitish sheaths have small very dark spots. Leaves cuneate, linear-acuminate, attaining half an inch in breadth; the uppermost ones are smaller. The reddish peduncle is bent aside, and bears a raceme of eight flowers of unusual colour in the fine specimen I have at hand; there may ultimately be more. Bracts linear-setaceous, the inferior ones nearly reaching the length of the stalked ovaries. Sepals and petals lanceolate-acuminate, yellowish with a sepia tint. Lip yellow, with very small hyaline-purple dots, scattered in lines on the side lobes, and on the front lobe. The great curiosity is the anther, the apiculus of which has a blackish anchor-like terminal process, the sharp shanks of which are deflexed. This may form a good contrast to the masses of Galeandra Baueri imported last year by Mr. F. Sander, of which I saw fine flowers last autumn. *H. G. Rchb. f.*

Cattleya (Trianæi) Schrœderæ, *n. var.*

This admirable flower came some time ago to my notice at Mr. F. Sander's, who appreciated it highly and sent it several times. To-day (Easter Sunday) came a very fine flower from Baron J. H. W. von Schroder, and at the same time arrived two flowers, bulb and leaf, from Dr. Wallace, Lion Walk, Colchester, whose son brought it from New Grenada (United States of Columbia). Its perfume is very exquisite. You may easily distinguish it from genuine Trianæi, whose shape it has, by the extraordinary crispation of both petals and lip; then by that well-known orange area of lip, which sends a retrorse angle to the superior part of the lip being unusually high, and reaching far more towards the apex of the lip. I never saw this in Trianæi. The flowers are generally of a very light purple, Dr. Wallace sends a darker one as an exception. The bulb sent from Colchester is plump and stout, the leaf unusually broad and stiff; and so were the specimens I saw last September at Mr. Sander's. This gorgeous novelty is dedicated with great satisfaction to the Baroness von Schroder, who is so well known as an enthusiastic lover of Orchids. *H. G. Rchb. f.* [Flowers of this delicately-tinted variety were exhibited at the Floral Committee on the 12th inst. Ed.]

CYPRIPEDIUM MARSHALLIANUM.

Cypripedium Godefroyæ, C. concolor, and C. niveum, form a distinct and dwarf growing section of Cypripedia, and one which is a favourite with most Orchid growers. In this section, too, the efforts of the hybridist to enrich it are fast becoming apparent, as witness that charming hybrid C. microchilum, with its pretty white flowers and shell-like petals, and the no less beautiful C. Marshallianum, an illustration of which, taken from Mr. Tautz's plant, we here give (fig. 99). In the habit of its growth it is neat, like the others of its class, and its flowers are pale rose-coloured, thickly sprinkled with small purple spots. It is a very distinct plant, and one which seems likely to be a free grower if kept in a moist and shady position in a temperate-house, or in any otner place where the other varieties named are found to thrive.

* *Galeandra flaveola*, n. sp.—Aff. G. diviti caule crassiori; foliis angustis cuneato-linearibus acuminatis; racemo porrecto plurifloro; bracteis triangulo-setaceis ovaria pedicellata infima prope, superiora longe non æquantibus; sepalis tepalisque lanceis acuminatis; labello brevi valde transverso rhombeo apice bilobo, antice crispulo, carinis angulatis geminis humilibus brevibus in basi, calcari a basi ampliuscula extinctoriiformi filiformi acuto plus minus curvulo, intus velutino; androclinio margine velutino; antheræ apiculo in corpus semilunatum (si mavis anchoriforme) exeunte cruribus deflexis. Imp. exc. viri Linden. *H. G. Rchb. f.*

GRAPES IN THE OPEN AIR.

It has often been asked if it is worth while to attempt the cultivation of Grapes in the open air, or on open walls in this country. Some writers on this subject have gone so far as to pronounce the attempt a mere waste of time and space; inasmuch as any portion of garden or other wall devoted to this purpose might be more profitably occupied by some other kind of fruit trees.

In the northern portion of the island this view of the matter may possibly be correct, as I suppose no variety of the Grape Vine has been known to thoroughly ripen its fruit in Scotland, or in the north and north-western counties of England. But on some of the light, warm, and dry soils, in the south and south-eastern counties the case is altered, and it is possible that the lack of success in the production of fairly ripened Grapes on the open wall is more to be ascribed to neglect, or the want of necessary attention in the matter of pruning, training, stopping, &c., than to lack of sunshine or unfavourable climatic conditions; and I think it may be safely assumed that if similar attention were devoted to the Grape Vine on the open wall as is generally given to its congener under glass, the result as regards the former would generally be found to be very different to what is mostly found to be the case, for, as a rule, the Grape Vine on the open wall is neglected.

It will readily be admitted that now, when glass is cheap, and glass structures can be erected at a very reasonable cost, it would by no means be advisable to extensively plant the Vine in the open air; but, on the other hand, there are frequently to be found warm and sheltered portions of wall, such as the front or southern wall of a cottage or other building, where it would be difficult to find a more appropriate plant to cover or to train upon it than some of the varieties of the Grape Vine, which are all of rapid growth, and at the same time very ornamental.

It has been said that the cottager may cover the south wall or the best aspect of his residence with other kinds of fruit trees, the produce of which would be of more value to him than Grapes, or at least such Grapes as can be produced in the open air. This, however, may be doubted, for if the culture of the Apricot or the Peach is attempted such trees will generally be found to require more attention in the way of training, &c., than can be bestowed upon them, while the bloom would require protection from spring frost, as well as the protection of the ripening fruits from birds and insects. It is true that the finer varieties of the Pear may be profitably grown on such walls, but to cover these with even Pear trees, a much longer time is required than in cases where the Grape Vine is used for the purpose; and a neatly trained Vine, whether it be trained over a cottage porch, or any other suitable situation, always presents a very pleasing appearance. Too often, however, Vines in the open air are much neglected, the shoots are seldom thinned out, and they are seldom stopped until it is too late, while the bunches of fruit are very seldom thinned, but are allowed to become covered up and smothered among the foliage, and are not likely to ripen. Grapes are said to have been extensively grown in southern England in former times; near to where I now write, in the eastern counties, may still be seen the terraces of a vineyard attached to an ancient abbey, but nothing, of course, can now be ascertained as to the character or quality of the fruit grown therein, and it is possible that this fruit may have been chiefly used for the purpose of making wine, and wine of fair quality, it appears, can be made from fruit which is only partially ripened. While other kinds of fruit of good quality were formerly less common in this country than is now the case, consequently in the matter of Grapes fruit might be highly appreciated then which would hardly be considered as palatable at the present day.

This is possibly a more feasible assumption than that of deterioration in the character of the climate of this country, or the supposing that from some

cause fruit ripened in the open air in this country centuries ago but which will not do so at the present time. There are now, however, but few varieties of Grapes which can reasonably be expected to ripen in the open air, during average seasons, and of these possibly the best, or that on which most dependence can be placed, is the Royal Muscadine; and this variety, with the necessary attention, and upon a south aspect, will be found to thoroughly ripen its fruit, which will be little, if at all inferior to that of the same variety produced under glass; indeed, the fruit of this variety, ripened on the open wall, generally acquires a rich bronzy tint, and when in this condition it is to be preferred to the imported white Portugal, sold by grocers, &c. Last season (1886) was not exceptionally favourable to the ripening of Grapes in the open air, still I succeeded in ripening Buckland Sweetwater on a south wall; the fruit, it is true, was not equal in flavour to that of the same variety ripened under glass, but at the same time it was by no means unpalatable; but the Vines, it should be stated, were treated in all respects in the same way as those under glass, the berries in each bunch having been carefully thinned out, as well as being fully exposed to the influence of light and sunshine. The Royal Muscadine, however, as well as the common Sweetwater variety, are both preferable to Buckland Sweetwater for open-air culture.

Of black varieties few can be recommended for this purpose. The Black Cluster is well known, and in most seasons it will ripen its fruit upon the open wall; the fruit, however, is of little merit even when thoroughly ripened; while Miller's Burgundy is said to be a great improvement upon it, and ripens its fruit well upon a south wall, and the fruit is also said to be of good quality. But better still is the Black Esperione, which is a really excellent variety, an abundant bearer, its berries as well as its bunches being large, and it succeeds well upon a south wall; its berries, however, require to be well thinned out, when in most seasons the fruit will be found to be well worthy of this attention.

It is also said that the French are in possession of several varieties of hardy Grape Vines which have never yet been introduced to this country, but which, or some of them at least, might be found to be of value for open-air culture. As it may reasonably be inferred that if varieties exist which, in France and the South of Germany, ripen their fruit in the open air as early as the month of August, they might be expected to at least do so in the South of England during the month of October.

For Vines in the open air it is by no means necessary or even advisable to plant in very rich soil, as this mostly tends to over-luxuriance, or the production of more wood than is likely to get well ripened, and while Vines, when carrying a heavy crop of fruit, can always be assisted by the application of rich surface dressings and liquid manure. Vines on open walls may be trained in various ways, possibly the best method is that known as the spurring system, particularly in cases where the wall to be covered is somewhat high, and the rods may be trained either vertically or horizontally, the first-named is mostly to be preferred, and this can be accomplished by training a rod to the right and another to the left horizontally, at a short distance from the surface of the soil; and from these vertical rods should be trained at a distance from each other of not less than 18 or 20 inches. On these vertically trained rods each bud or eye will form a spur, from which one, or at most two, shoots should be allowed to grow; and these, as soon as the embryo bunch can be perceived, should be stopped at the bud beyond it, and this shoot, with its embryo bunch, should be loosely tied to the rod, thus leaving a portion of wall between each pair of rods exposed to the influence of the sun, which thus becomes heated to a greater extent than would be the case if the shoots bearing the bunches were nailed over those spaces, which would thus be covered by foliage. But by securing the shoots to the rods the fruit is kept sufficiently close to the wall, without, however, actually pressing upon it, which is mostly found to be the case when the shoots are nailed to the wall. Each bunch can thus be readily got at for the purpose of thinning the berries, &c., and the system, moreover, gives the Vines a very neat appearance. On low walls, that is, walls some 5 or 6 feet high, with a south or south-east aspect, Grapes may during most seasons be successfully ripened in the open air, and in such cases the method of training mostly followed is what is known as the long-rod system, which consists of annually training a young rod from the base to take the place of that which is bearing the fruit of the current year, which as soon as this has been gathered is annually cut out, and by following this system larger bunches of fruit may generally be obtained. *P. G.*

Fig. 99.—Cypripedium marshallianum. (see p. 512.)

The Flower Garden.

SOWING SEEDS.

Seeds of Stocks, Asters, Marigolds, Salpiglossis, Helichrysums, Tagetes, and all other half-hardy annuals may now be sown. If a half-spent hotbed is at command, place a surfacing to the depth of 2 or 3 inches of leaf-mould and charred soil which has been sifted in a quarter-inch sieve. The seeds may be sown in drills about 3 inches apart. The main supply of hardy annuals may now be sown out-of-doors, choosing a time when the ground is dry. Thin out those which were previously sown as soon as they are fit to handle. It is better to perform this operation at different stages, in case there may be depredations from slugs, a protection from which is made with a ring of powdered lime and soot placed round them, and which requires frequent renewal. Perennials may also be sown. Stake Sweet Peas as soon as they get a couple of inches high. Lines of Dell's Black Beet may be sown where it is intended to stand in the flower-beds; it will save much trouble in potting and watering. Where this cannot be conveniently done at present a sufficient number of 4-inch pots may be sown, and the plants reduced to one or two when of sufficient size. A sowing of Brazilian or Chilian Beet should also be made in like fashion, reducing the number to one plant in a pot. This is a bold subject for the subtropical beds or shrubberies. A sowing of Balsams may be made in slight heat, to be afterwards potted on and planted out in beds, where they will have an imposing appearance.

Pruning Roses.

Plants of these should now be pruned. In the absence of an accurate knowledge of the blooming habits of each subject to be operated on, the following general principle may be carried out. Strong growers may be left with six to eight eyes on each, and weaker growing kinds should be cut back hard, that is, to two or three eyes at the base of the shoot. Cut out all weakly shoots, leaving no snags; where the plants are strong a good shaped head may be maintained. Pillar Roses require more judgment to keep them in good condition and well furnished with flowering wood from base to top. Say two young shoots are introduced, of about 3 feet long, and two of 6 to 8 feet, this will allow of the same number of old shoots being removed and will assist in maintaining a healthy vigour in the plant. Climbing Roses on walls and trellises may also be so treated. The planting of Roses, unless from pots, should not be undertaken now, the risk being too great. If the weather should be dry, late planted Roses must be syringed overhead once, or twice daily.

Edging Walks.

The grass edges of walks and beds should be systematically cut with the edging-iron as soon as the grass is mown. The walk should be kept to its usual width, and to this end the line and measuring rod must be carefully employed; and where the walk has become too wide, cut the turf a foot in width and push it forward the required distance, the vacancy at the back being filled in with the parings.

Planting Shrubs.

Continue the transplanting of these until growth

takes place, using a liberal quantity of fresh loamy or peaty soil in immediate contact with the roots; give a mulch of dung or half-decayed leaves on the top, and as nothing damages newly planted trees and shrubs so much as heavy douches of cold water at the roots when they are inactive, give them instead frequent sprinklings over the foliage and stems. The pruning of shrubs should be brought to a close as speedily as possible. Large old evergreens frequently cease to have an ornamental effect when they become scraggy and bare at the bottom; such specimens are the better for being cut down to about 3 feet from the ground, and at the same time heavily surfaced over the roots with soil and light manure; for the top, when deprived of the shelter of the branches, will often perish, unless the roots are protected in some way. This dressing will also impart freshness and vigour to the young shoots. Some evergreens may require to be cut close to the ground, on account of the injury caused them by rabbits. Banks consisting of Laurels should now be trimmed, and blanks in them filled up by pegging down some of the adjacent shoots. If a few spadefuls of porous soil be placed over them they will speedily strike root; and if suitable material be handy a good sprinkling of soil over the whole will greatly improve its appearance.

Bedding Plants.

These should not be allowed to remain under the shade of the heavy foliage of Vines and Peaches. Pelargoniums may be transferred to cold pits now with safety, gradually inuring them to outside conditions; but it will be advisble to afford them substantial coverings for some little time to come. Be careful in watering, and let it be done early, so that the foliage may get dry before the sun attains sufficient power to scald it. Continue the propagation of all stock of which there is an insufficiency. Push on Dahlias, subtropicals, and all other subjects, to keep them growing freely.

Pansies, &c.

Pansies not yet planted out should be attended to as soon as the ground is in proper condition; for if delayed much longer they are liable to die off. Carnations, Picotees, &c., should also be transferred to the open beds as soon as possible. *Wm. M. Baillie, Luton Hoo.*

"THE BOTANICAL MAGAZINE."

(*Continued from p.* 479.)

Returning to the *Botanical Magazine* we find the first plant illustrated is Iris persica, followed by Echinacea purpurea,* Eranthis hyemalis, Cyclamen Coum, and many other familiar plants which even in those days were well known to a few; and Curtis's great desire was to make them known to the many The large circulation his magazine quickly attained must have been a gratifying proof that his efforts were fully appreciated; and there is no doubt that they bore excellent fruit. A few plates further on in the first volume are Cereus flagelliformis, Tropæolum majus, Passiflora cœrulea, and Reseda odorata, all of which still maintain a prominent position in our gardens. In the second volume are a few more showy flowers, such as the Mexican Sprekelia formosissima, Papaver oriental, and the Brazilian Passiflora alata; the last, it is stated, was "cultivated in great perfection in the stove of our worthy friend, James Vere, Esq., of Kensington Gore; at the Physic Garden, Chelsea; and Mr. Malcolm's, at Kennington."

Plate 97 (vol. iii.) represents Fuchsia magellanica (F. macrostema), under the name of F. coccinea, a name which belongs to a Brazilian species, introduced about the same date. The two were both figured in different works under the same name, and confused with each other until 1868, when Sir Joseph Hooker figured the original coccinea in the magazine (pl. 5740). The hardy Chilian species was the only one that became common in gardens, and that under the false name of F. coccinea. Curtis regarded it as a stove plant, "bearing a high price in 1789, but easily propagated, hence likely soon to be within the means of every lover of flowers." Acacia verticillata (pl. 110), a native of South-eastern Australia, and one of the many species, with the leaves reduced to flattened petioles, deserves notice, because in raising it from seed the true nature of the flattened petioles was revealed in the gradual transition in the seedlings of pinnately divided leaves to the small organs by which they are replaced in the adult plant. Plate 116 is a representation of the North American Calopogon pulchellus (Limodorum tuberosum), and is the first Orchid figured in the *Botanical Magazine*.* It was accidentally introduced with Dionæa Muscipula, and cultivated by James Smith, in Curtis's own garden. To the magnificent and striking orange and blue Strelitzia regina, two plates (119 and 120) are devoted. This plant was introduced by Sir Joseph Banks, from the Cape of Good Hope in 1773, and was first figured and described in the first edition of Aiton's *Hortus Kewensis*. Passing to the fifth volume (1791), we note Zinnia multiflora, Tagetes patula, and Epidendrum fragrans (pl. 152) incorrectly named E. cochleatum. The last, being an epiphyte, was regarded as a great curiosity; and if not actually the first plant cultivated in England, it was one of the first two species; E. fragrans being the other. Aiton records both as having been introduced in 1786; the former by Mr. Alexander Anderson and the latter by Hinton East, Esq. Curtis states that instances of epiphytes flowering in England were very rare; indeed, so accomplished a gardener as Philip Miller considered it futile to attempt to grow these epiphytal Orchids, as appears from the following paragraph relating to Epidendrum, extracted from the eighth edition of his *Dictionary*, 1768:—"There are near thirty species of this genus, which grow naturally on trees in Africa and both Indies [As first constituted by Linnæus, Epidendrum comprised all the epiphytal Orchids then known], but as the plants cannot by any art yet known be cultivated in the ground, it would be to little purpose the enumerating of them here, though, could the plants be brought to thrive by culture, many of them produce very fine flowers of uncommon forms. I had three species of them sent me from America, which were stripped from the trees on which they grew. These I planted with care in pots, which were placed in a stove, where they came so far as to show their flowers, but the plants soon after perished."

Commodore Gardner presented roots of Epidendrum fragrans to the Apothecaries Company in 1789, and these were successfully treated by Mr. Fairbairn in their garden at Chelsea, producing flowers in February, 1790. "Mr. Fairbairn planted the roots in pots of earth composed of rotten wood and decayed leaves, plunging them into the tan bed of a pit of considerable size." The true cochleatum is figured in pl. 572, where Sims corrected the error; and E. fragrans was again figured (pl. 1669) in 1814. Brilliant among shrubs hardy only in the milder parts of these islands is Sophora tetraptera (pl. 167), one of the very few Leguminosæ belonging to the native flora of New Zealand, introduced thence by Sir Joseph Banks in 1772. It is the subject of the first plate of J. Miller's *Icones Plantarum*, in folio, alluded to above. Miller states that it ripened seeds in the open ground at Chelsea in 1779, as well as in Dr. Pitcairn's garden at Islington. Curtis remarks "That a finer sight can scarcely be imagined than a tree of this sort, extending to a great breadth on a wall with a western aspect, in the Apothecaries garden at Chelsea, where it was planted by Mr. Forsyth about the year 1774, and which at this moment (April 28, 1791) is thickly covered with large pendulous branches of yellow, I had almost said golden flowers, for they have a peculiar richness which it is impossible to represent in colouring. In winter it is carefully covered with mats, lest it should suffer from any extraordinarily severe weather." I have reproduced the foregoing particulars, in order to direct attention to this beautiful shrub, which is figured in the *Gardeners' Chronicle* (n.s., ix., p. 729). Other varieties are figured in the *Botanical Magazine*, plates 1442 and 3735, under the distinctive generic name Edwardsia, founded by Salisbury in honour of Sydenham Edwards, with whom we are already acquainted.

The next plate (168) is the beautiful but evanescent Cape Vieusseuxia glaucopis, incorrectly figured under the name Iris pavonia; the true V. (Iris) pavonia is figured in plate 1247. Ixora coccinea (pl. 169), originally introduced in 1690, though it did not long survive, was successfully cultivated by Thorburn & Whitley, nurserymen at Brompton. The singular Aitonia capensis (pl. 173), one of Masson's earliest introductions, deserves mentioning on account of its commemorating one of the most eminent gardeners of that period. Buddleia globosa (pl. 174), a native of Chili, and so unique in its way, was introduced by Lee & Kennedy, of Hammersmith. The hardy Kalmia latifolia (pl. 175), and Azalea nudiflora (pl. 180) bring us to the end of the fifth volume. Specially noteworthy in the sixth volume is the handsome Erica grandiflora (pl. 189), one of Masson's very numerous introductions from South Africa, which was drawn "from a finely-blown plant in the choice collection of James Vere, Esq., of Kensington Gore." E. cerinthoides (pl. 220) is another from the same source. Helianthus multiflorus (pl. 227), regarded by Dr. A. Gray as a garden variety of H. decapetalus, reminds us more of the taste of the present day. Plate 240 is a representation of the charming Pelargonium tricolor, here first described. Passing on to plate 260, Metrosideros citrina, Curtis (Callistemon lanceolatus), we have the forerunner of numerous brilliantly-flowered Australian shrubs, of which, according to Curtis, there were then many in this country, though he believed this was the first that had flowered in England. The drawing was made from a plant in Lord Cremorne's garden, the root of which had been sent from Botany Bay. Rosa semperflorens (pl. 284), a variety of R. indica, foreshadows the rich and ever-increasing number of garden hybrid Roses, and was regarded by Curtis as one of the most desirable plants in point of ornament ever introduced into this country. It was obtained from India by Gilbert Slater, of Knots Green, near Leytonstone, a gentleman who did much to promote ornamental gardening. The showy West Indian Portlandia grandiflora (pl. 286) is the last we have marked for notice in the eighth volume.

We have now reached the year 1795, and Cape or South African plants still largely preponderate among the extra-European subjects illustrated. Foremost is the striking "everlasting" Helipterum eximium (pl. 300—Gnaphalium), familiar to many persons in a dried condition, and even in that state very beautiful; but I have never seen it cultivated. Messrs. Lee & Kennedy flowered it in great perfection, having raised the plants from seeds given them by Captain William Paterson, author of a narrative of four journeys into the country of the Hottentots and Caffraria. Erica ampullacea, E. ventricosa, and E. Massoni claim our attention in this and the tenth volume. The Chinese Chrysanthemum (pl. 327), although cultivated by Philip Miller as early as 1764, seems to have excited no particular interest, and certainly no enthusiasm, till about the date (1796) of Curtis's figure. Miller (*Dict.*, ed. 8) states he received his plant from Nimpu—probably Ningpo—but he has no special words of praise for it. Curtis appears to have been unaware that he was dealing with a plant previously cultivated in this country, for he says:—"We rejoice in the opportunity afforded us of presenting our readers with a coloured engraving of a plant recently introduced to this

* The modern name is substituted in this and many other instances.

* The first tropical Orchid cultivated in England was Bletia verecunda (Helleborine americana), figured in Martyn's *Historia Plantarum*, pl. 48. It was sent from the West Indies by Houstoun (Aiton, *Hortus Kewensis*, ed. 1, iii, p. 302) before 1733, as a dried specimen; but the tubers grew on being placed in a tan bed. They were received by Collinson, and cultivated in the garden of Wager, a Lord of the Admiralty.

country, which, as an ornamental one, promises to become an acquisition highly valuable. This magnificent species of Chrysanthemum which we have hitherto seen only in the collection of Mr. Colvill, nurseryman, King's Road, Chelsea, began to flower with him in November, 1795."

This is followed by a figure of Trifolium incarnatum, which we are now accustomed to see covering acres of land. Allamanda cathartica (pl. 338), introduced by Baron Halse from Guiana, reminds one of the flower shows of long ago; and Protea mellifera (pl. 346) is the herald of numerous members of a family rich in singular forms and brilliant colours. It was raised from seed with a number of other equally curious things in the nursery of Mr. Barr, near Ball's Turnpike, Kingsland. Calceolaria Fothergilli (pl. 348), first named and figured by Aiton in the *Hortus Kewensis*, was introduced from its distant home in the Falklands in 1777 by Dr, Fothergill.

The figures in the remaining volumes (xi.—xiv.) of this period are mostly of hardy and Cape plants; the latter including many bulbous kinds belonging to the genera Ixia, Antholyza, Gladiolus, &c. Among the still rare Australian plants I may name Platylobium formosum (pl. 469) and Pultenæa stipularis (pl. 475); the latter genus dedicated to the historian of botany in England.

A few other figures in these volumes merit a word or two, notably those of Achimenes coccinea (pl. 374—Cyrilla pulchella) and Cineraria cruenta (pl. 406), the parent of the marvellous variety of Cinerarias of successive generations of florists. Cymbidium aloifolium (pl. 387—Epidendrum), flowered by Grimwood & Wykes, nurserymen of Kensington; and Epidendrum cuspidatum (pl. 463, as E. ciliare), are the only additional epiphytal Orchids.

I had almost forgotten to mention that the tenth volume contains an alphabetical index to that and the previous volumes; a classified index to hardy trees, shrubs, herbaceous perennials, biennials and annuals; an index to the greenhouse plants; an index to the stove plants, and an index arranged according to the Linnean system.

Kindred English Literature from 1787 to 1800.

This is considerable, and in no other country besides England was there so much activity in flower gardening. In Austria alone, judging from the admirably illustrated works of the younger Jacquin, was there anything approaching it. The first edition of the *Hortus Kewensis*, edited by William Aiton, is dated 1782,* and, as already observed, it is a most valuable contribution to the history of the introduction of exotic plants in the gardens of England. In 1789 to 1791 appeared James Sowerby's *Flora Luxurians, or Florist's Delight*, a folio work, illustrated with coloured plates, which I have not seen, but which reached only eighteen plates. This is the same artist who drew and engraved most of the plates in the first volume of the *Botanical Magazine*. In 1792 was published the first edition of the *Florist's Directory* with plates, by James Maddock, a florist at Walworth. This edition is not in the Kew library, but an improved edition, by Samuel Curtis, in 1810, is interesting as giving an idea of what were in those days considered the best types of Anemone, Hyacinth, Ranunculus, Tulip, Auricula, Pink, Carnation, &c. Thomas Martyn's *Flora Rustica*, a work of four thin octavo volumes, containing coloured illustrations of "such plants as are either useful or injurious in husbandry," by F. P. Nodder, botanic painter to Her Majesty, appeared periodically from 1792 to 1795. In 1794 Haworth issued the first of his writings on succulent plants, then very popular and commonly cultivated. The Roses of the period were depicted by Miss Mary Lawrance in a folio volume containing ninety plates. Richard Anthony Salisbury, concerning whom I shall have more to say further on, had a fine garden at Chapel Allerton, in Yorkshire, where he cultivated a large collection of plants, a catalogue of which, somewhat on the plan of Aiton's *Hortus Kewensis*, he published in 1796, entitled *Prodromus stirpium in Horto ad Chapel Allerton vigentium*. The author's annotated copy was purchased by the writer for Kew at a sale of Burchell's books in 1866. The great blemish of this work is the substitution of new names for a large number of plants, on the ground that the old ones, from a variety of causes, were inappropriate.

Next comes Andrews' *Botanists' Repository*, a rival of the *Botanical Magazine*, issued in parts, at half-a-crown each, from 1797 to 1812; the whole containing 664 coloured quarto plates of very unequal execution. A second edition was published in 1816, and the colouring of this generally is execrable. The drawing is usually fairly good, though not equal to some of this artist's later work. Whether the first was better I am unable to decide at the time of writing. There is a pretence of giving analyses of the flowers, but these are often inexact and generally inadequate to be of any use botanically. The descriptive part is also unequal, and synonymy altogether excluded. Nevertheless the *Repository* was in one sense superior to the *Botanical Magazine*, because the majority of the plants figured were of recent introduction. Andrews was apparently strongly supported by Lee & Kennedy, for he figured very many of their introductions from South Africa, Australia, and elsewhere. *W. B. Hemsley.*

(To be continued.)

* I may mention that there is an earlier *Hortus Kewensis*, compiled by John Hill, M.D., an exceedingly fertile bookmaker of the eighteenth century. The first edition was published in 1768, and this was followed by a second in 1769, containing twenty coloured plates. Pritzel (*Thesaurus Literaturæ Botanicæ*) by a slip states that the first edition contains plates, and the second therefore "minime differt."

THE ANÆCTOCHILUS.

No Orchid collection should be thought complete without a small group of these charming little plants. They are doubtless capricious in their habits, and refuse to make bright healthy growth sometimes with the best care and attention bestowed upon them. The first lot I had under my care were not grown in an Orchid-house at all; indeed, there is no particular merit in an Orchid-house for the culture of these or any other plants. The temperature, state of the atmosphere, and shading are the essential requisites whereby success may be obtained. I potted the plants in a mixture of peat, sand, sphagnum moss, and potsherds, the latter broken up into small pieces. They were placed in a handglass with a movable top, and the glass was placed under Cucumbers growing overhead. This position seemed to be exactly adapted to them, as they grew with great freedom, completely covering the entire space in twelve months, so that they could be parted out to fill two glasses more of the same size. The temperature during summer was from 60° to 65°, but during summer it might rise to 90° or more when the house was shut up, and the atmosphere charged with moisture. It is during that period that the rapid growth is made, the winter being a season of comparative rest, but they do not even then cease to grow. A little leaf-mould added to the potting soil causes the leaves to assume a rich colour; it ought not to be too much decayed. One very successful cultivator used two parts leaf-mould, one part rough fibrous peat, one part sphagnum moss, with some sharp white sand and clean potsherds. I allude to this case because the plants were grown under bell-glasses. Three nice plants were potted in a 5-inch pot; this was placed inside a 7-inch one, some drainage being placed in the bottom of the larger pot, on which the base of the one containing the plants rested; this is done to bring the rims of the two pots level with each other. The space between the two pots is to be filled with potsherds nearly to the rims, and the surface between the two to be filled up with finely chopped live sphagnum. The bell-glasses ought to be clear, in order that the plants underneath may be seen without removing them. It is also very desirable that the glasses should be removed every morning, at the same time wiping them clean with a dry cloth. They may also remain off with advantage to the plants for half an hour or more. There is some danger in leaving them off too long by a lapse of memory in the person who may have charge of them. They should be grown in a shady part of the warm Orchid-house. In regard to watering them, do not give too much at a time, the surface should be watered through a fine rose, but the leaves should not be watered, as it is injurious, sometimes causing a green mould to grow over the upper surface of them. When they do grow freely, it is not difficult to propagate a good stock of plants, as all the lateral growths form roots from the stem. These are cut off with a few roots attached, and potted in the ordinary compost; and if the operation is performed before the growing period commences, they will be nice established plants in a few weeks. The object of the cultivator is to be careful not to let the plants receive any check to their growth, for if they once get into bad condition all the attention in the world may not be enough to restore them to their pristine vigour. Red-spider will attack the leaves, and do mischief before it is observed. To destroy this, sponge the leaves. Thrips may also be sponged off. The Goodyeras may be treated in the same way. A selection of hothouse species are A. Dominii ×, a garden hybrid; A. Lowii, A. petola, A. setaceus. There are of course many other species, but they cannot all be obtained when wanted. The lovely Goodyera Dawsoniana I used to grow for its spikes of pure white flowers in winter. As a rule it is better not to allow the plants to produce flowers. *J. D.*

CHEAP STORAGE FOR APPLES.

At a recent meeting of the Ohio State Horticultural Society Mr. J. Jenkins described a simple method used by him in storing and keeping Apples for the spring markets as follows:—

One of the easiest and most rapid profits that a horticulturist and farmer can take advantage of is in the proper storage of the Apple crop. The October and November price of good winter keepers is seldom more than one-third to one-half what the same fruit commands in the latter part of winter and early spring, so that a moderate amount of shrinkage from rotting, &c., may easily be met in the largely increased profit of late selling.

In earlier times, when there was a greater lack of cellar room, quantities of Apples were preserved for the spring market by simply burying them in the orchards where grown in conical heaps, first placing straw over the heaps, then enough earth to prevent freezing; and even at the present time some of the choicest Apples that reach our late spring market are preserved in this well-known manner. Simply a modification of this old and well tried process is the method that I make the heading of this article.

Down a hillside a V-shaped excavation is made, which may be several feet deep and 8 or more feet wide at the top, and in the bottom, extending its full length, a trough is placed, made of a board 1 foot wide for the bottom, and boards 8 inches wide for the sides, with a little drain immediately below.

This trough, extending up the full length, and in the bottom of the excavation, is covered with slats 1 or 2 inches wide, nailed across not over 1 inch apart. The sloping sides are then covered with Rye-straw, and Apples by the waggon-load are placed therein and covered with straw and earth from above to prevent frost from reaching them, as is done in the old way of burying fruits.

The trough below gives a circulation of cold air through all the Apples stored above it, and ends in a draught chimney at the upper end. In the very coldest weather the mouth at the lower end of the excavation may be closed, though while the thermometer remains 12° or 15° above zero it has proved an advantage to let the cold air circulate through. But in warm weather it is an advantage to keep the draught closed, thus retaining the cold that is already there. This simple and inexpensive arrangement has preserved Apples until very late in the spring with scarcely any loss, and they come out for market bright, crisp, and fresh, with no appreciable loss of flavour, and brought often treble the price they would have commanded in the best fall or early winter market. *Farmers' Review.*

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APPOINTMENTS FOR THE ENSUING WEEK.

SHOWS.

WEDNESDAY, Apr. 20 — Royal Botanic Society: Second Spring Show. Newcastle-on-Tyne Botanical and Horticultural Society (two days).

MEETINGS.

THURSDAY, Apr. 21—Linnean Society, at 8 P.M.

SALES.

WEDNESDAY, Apr. 20 — Orchids in Flower, at Stevens' Rooms. 10,000 Lilium auratum, and other Liliums, Roses, &c., at Protheroe & Morris' Rooms.

THURSDAY, Apr. 21—Imported Orchids, at Stevens' Rooms.

FRIDAY, Apr. 22 — Imported Orchids, at Protheroe & Morris' Rooms.

Horticulture in Natal.

THE Colony of Natal, though younger considerably than the *Gardeners' Chronicle*, has had a chequered history. Our concern with it arises chiefly from the development therein of cultural enterprise, which may be expected to increase if the unhealthy excitement of the gold fever do not afford a check to it. By opening up new districts and making their resources known the search for gold may, however, effect much indirect good, which will remain after the gold fever has subsided. The late Indo-Colonial Exhibition served to indicate the resources of the colony so far as timber and sugar are concerned. Coffee, Tea, fibre plants, Tobacco, Arrowroot, Maize (Mealies), drugs, and fruits were also exhibited. But we are more especially concerned here with the growth of plants for horticultural purposes. The exports of plants and bulbs in 1885 comprised 845 packages, valued at £911. This is no doubt not a large sum, but one which serves to show how much it is likely to be increased in the future.

"The suitability of this colony," we cite from the official catalogue, "for the growth of many plants and bulbs in demand abroad, and especially those required for the perfumery trade, has lately received attention. The double-flowering Tuberose is now cultivated on a considerable scale, and tubers have become an article of export. It has been stated by a local florist that the following plants would pay to grow in quantity if appliances were also provided for extracting the perfume, viz.:—Gardenia, Rose, Jasmine, Violet, Patchouli, Verbena, Geranium, Vetivert, Iris, Carraway, and Anise; and that there is every reason to believe that flower farming will become a profitable, as it is a pleasant pursuit. The export of plants and bulbs averaged only about £30 per annum till 1881; since then it has advanced considerably, and for the last three years has averaged £900 per annum."

Some time since we gave an illustration of the culture of Tuberoses in Natal for commercial purposes, and now we have the opportunity of laying before our readers a view in the garden of Sir THEOPHILUS SHEPSTONE, taken by Mr. FERNEYHOUGH, of Maritzburg. Sir THEOPHILUS (who is represented in the illustration) is an ardent horticulturist, and while the semi-tropical climate allows of the culture of Palms, Bamboos, and Aloes, the taste of the proprietor has secured their arrangement in effective groups.

As an illustration of horticultural enterprise we append, by the courtesy of Mr. ADLAM, a list of plants shown at a recent flower show at Maritzburg. All the plants named are worth cultivation, and, with few exceptions, are found within a radius of 20 miles from the town, at elevations of from 2000 to 4500 feet. We heartily congratulate the promoters of this show, who seem to have done what we have so frequently urged our colonial friends to do, viz., to promote a knowledge of their own native flora and its capabilities rather than to attempt a servile copy of a European flower show. How rich in garden plants the Natal flora is, is shown in a letter from Mr. ADLAM, in which he says that—

"Owing to the gold fever, which has seized so many in South-east Africa the country has been hunted over by prospectors with an eye to gold-bearing quartz, and many a solitary mountain has been surmounted, many dense forests penetrated, and rivers forded in places in which, till now no white man has ever set foot. Thus from time to time I have received fragmentary information regarding new plants seen, and fresh localities for old ones, lighted on.

"Very recently some dried specimens were brought me from the Zululand border. A showy terrestrial Orchid, bearing a spike of thirty-six spreading light purple flowers, each an inch across. The two lateral sepals are narrow and spreading; the upper sepal, which has a long spur, bends with the two upper petals over the minute column, which was too decayed for examination. The lip is remarkable, long, narrow, thread-like, upright. We have several good Streptocarpi, but one from the same locality as above surpasses all hitherto seen. About a foot high, flowers very many, a deep intense blue; leaves unknown—in fact, only a scrap was given me.

"Cymbidium Sandersoni was first sent to HARVEY by the late Mr. SANDERSON in 1860. In habit it is most distinct from any other epiphytic Orchid we have. Long spindle-shaped pseudobulbs, evidently tending to a true stem, 1½—2 feet long, covered by a tuft of robust two-ranked leaves. A tall scape ending in a panicle of pale yellow flowers. I am told of a forest where it was seen growing in abundance on trees. It is a plant I have often searched for, but hitherto it has never been my luck to come across it.

"Disa macrantha, or crassicornis.—I have seen this very fine plant in the same locality from whence Mr. SANDERSON obtained his specimens, now in the Kew Herbarium, and can confirm Mr. N. E. BROWN's remark, that it runs D. grandiflora very close. It is rare, and affects deep black, rich loam on sloping hillsides fully exposed to the sun. It has been found recently close to town at an elevation of 2200 feet, and also 20 miles from here; elevation, 4000 feet."

The following is the list of the native plants exhibited at the Maritzburg flower show in January of this year:—

Aristea Eckloni
Anemone Fannini
Agapanthus umbellatus
Aloe sp.
Begonia Dregei
,, natalensis
Burchellia capensis
Bauhinia natalensis
Brunsvigia multiflora
Clerodendron glabrum
Calodendron capense
Cyrtanthus Mackeni
,, collinus (?)
Chlorophytum Bowkeri
Cymbidium Sandersoni (?)
,, Buchanani
Calhurnia lasiogyne
Crotalaria globifera
,, capensis
Duranta sp., white flowers, doubtful native
Disa polygonoides
,, sp., white and green flowers
Dais cotinifolia
Dianthus sp.
Disperis Fanniniæ
,, Cooperi
Eulophia ensata
,, Dregei
,, sp., yellow and maroon flowers
Erythrina Humei
Eucomis punctata
Gomphocarpus albens
,, sp., brown and yellow flowers
Gerbera aurantiaca
Gloriosa virescens
Galtonia candicans
,, princeps
Habenaria sp.
Hæmanthus natalensis
,, Baurii
Hypoxis latifolia
,, elata
Kalanchoe crenata
Lasiosiphon sp.
Lissochilus Krebsii
Littonia modesta
Montbretia Pottsii
Moræa bicolor
,, iridioides
,, sp., large pale yellow flowers
Nycterinia natalensis
Nerine flexuosa
,, pudica
Nymphæa stellata
Osbeckia Umhlasiana
Pavetta assimilis
,, Bowkeri
Phygelius capensis
Plumbago capensis
Polygala virgata
Protea sp.
Richardia africana
,, ,, hastata
Satyrium sp., orange flowers
,, sp., white and pink flowers
Sandersonia aurantiaca
Tritoma natalensis
Tritonia aurea
Vernonia mespilifolia
Watsonia meriana
,, densiflora
,, ,, alba

THE GARDENERS' ORPHAN FUND.—Another meeting of the provisional committee was held on Tuesday last at South Kensington, when the draft of an appeal to the gardeners of the kingdom was discussed and adopted. This appeal will be circulated, and upon the nature of the replies received it will depend whether or no the scheme shall take definite shape. Unless a very considerable sum is at once secured, or at least guaranteed, it is obvious the proposal cannot take shape. We earnestly call upon gardeners and the employers of gardeners to lose no time in replying to the questions that will be officially put to them in a few days. Mr. BARRON, of the Royal Horticultural Society's Gardens, Chiswick, is the provisional and honorary Secretary.

THE ROYAL HORTICULTURAL SOCIETY.—Mr. GEORGE MAW has been elected a member of the Council, in the place of A. B. MITFORD, Esq., C.B., resigned.

CHRYSANTHEMUM SHOW.—We understand that a Chrysanthemum Show will be held at the Royal Horticultural Society on November 8 and 9 next.

DRAUGHTS.—Mr. J. T. PORTER, *Chronicle* Office, Fleetwood, sends us a specimen of a draught-excluder, which would be useful in conservatories and glazed corridors, as well as for domestic purposes. It is like the ordinary draught-excluder, but may, when softened by warm water, be moulded to any surface, and then attached in the ordinary way. It is a useful invention.

CUT ROSES FROM AMERICA.—The most remarkable exhibit at the last meeting of the Floral Committee on the 12th inst. consisted in some cut blooms of Tea Rose Puritan, which left New York on the 2d inst. and arrived in the docks at Liverpool at 2 A.M. on April 11. A messenger was awaiting their arrival, who, having secured his prize, left Liverpool by the 3 A.M. express, and delivered the Roses to Mr. WILLIAM PAUL at Waltham Cross at 10 A.M. We commend this little history to members of the Cobden Club, to Protectionists, Free Traders, and Fair Traders, as a nice problem in political economy. Here is a British Rose raiser (Mr. BENNETT), who raises a beautiful Rose, and, doubtless for a consideration, sends it out of the country. Another Rose raiser re-imports it in the form of cut blooms, having doubtless in his turn made some commercial arrangements with the American growers. But while the economists are discussing this question, is there not

SIR THEOPHILUS SHEPSTONE'S GARDEN IN NATAL.

just a shade of a fear that the English flower-forcer may once more be beaten out of the market by the foreigner?—that is, if we are to consider the Americans as foreigners. Poor British grower: he gets no more than one halfpenny a pound for his Tobacco, and New York competes with him in the matter of cut Roses. In any case it was a remarkable feat, for the full particulars of which we refer our readers to our report of the meeting in another column.

The King of the Belgians.—His Majesty, who is fond of gardening and a protector of horticultural industry in Belgium, paid a private visit to the conservatory of the Royal Horticultural Society on the occasion of the last meeting.

Linnean Society of London.—On Thursday, April 21, at 8 P.M., a paper will be read on "Nature and Causes of Variation in Plants and Animals," by P. Geddes. A discussion will follow the reading of this paper.

Mr. Joseph Godseff.—We learn that Mr. Godseff, who has been for the last sixteen years Orchid manager to Mr. W. Bull, of Chelsea, has left that situation, having been engaged in a similar capacity at Mr. F. Sander's establishment at St. Albans. We understand that Mr. Godseff leaves Mr. Bull on the best of terms, and with his good wishes.

The Birmingham Gardeners' Mutual Improvement Society.—The closing meeting of the winter session took place on the 6th inst., when there was a large attendance of members. Mr. Walter Jones, gr. to C. E. Matthews, Esq., a well-known and successful plant exhibitor, read an exhaustive paper on the "Cultivation of the Erica," which was thoroughly practical throughout. The essayist traced the early introduction of the greenhouse Heaths from the Cape of Good Hope, when that colony came into the possession of this country and mentioned Loudon's *Encyclopædia of Gardening*, and its statement, that Mr. F. Masson, a most zealous botanist, sent home several species and varieties, which were taken in hand, cultivated, and exhibited by Messrs. Lee, of Hammersmith; Rollisson, of Tooting; Henderson, of Pine-apple Place, and others; and the hold they took upon the plant-loving public when seen at the London exhibitions. The early treatment, from the first repotting of small plants from the nursery, was detailed, special emphasis being laid on the necessity for seeing that the balls of root sand soil are thoroughly saturated with moisture when repotting is done: directions were also given for watering, ventilation, &c. Special stress was laid upon the necessity for shading the plants from hot sun, and for occasional syringings overhead, as well as the avoidance of direct draughts of cold air upon the plants. An animated discussion followed, in which questions were asked on various points of culture, and particularly in reference to the practice of applying manures in a dry or liquid state, pruning, &c. At the close of the meeting a resolution was unanimously passed, that it be a recommendation to the committee to consider the best way of preserving the practical papers read before the Society, it being suggested that they be published in pamphlet form, and supplied to members at cost price, and to other applicants also. A further resolution, carried by acclamation, was to the effect that a respectful congratulatory letter be sent to Sir Thomas Martineau, Mayor of Birmingham, on his knighthood, as a grateful recognition of the kindly practical interest he has always taken in the Society.

English Tobacco.—The following is a letter which appeared in the *Times*, and which we reproduce as being of interest to our readers:—

"It may be of benefit to intending planters of British Tobacco this year to learn that a parcel was exposed for sale by public auction in the City yesterday. It is described in the catalogue of the selling brokers, Messrs. Grant, Chambers & Co., as seven drums of English leaf Tobacco, per railway from Wittersham, warehoused at Haydon Square December 2, 1886. The first four lots sold at one halfpenny per pound, and there were no bids for the other three. The attendance of the trade was a little below the average, and as to the Tobacco, I think if it had come from any foreign country it would not have fetched the price it did, as it was unfit for trade purposes. *John J. Jonas*, 51 *and* 52, *Fenchurch Street, E.C., April* 7."

Rochdale Auricula Society.—The exhibition of this Society is to be held this year on May 4, in the Public Hall, Rochdale, and a good gathering of lovers of the Auricula is anticipated for this, one of the oldest societies in the kingdom.

Appointment Conferred on a Cambridg Nurseryman.—Mr. George Willers, of The Nurseries, Trumpington Road, Cambridge, has been appointed Florist to H.R.H. the Prince of Wales by special and Royal warrant.

To Bouquetists: Coleonema album.—A very pretty evergreen shrub, the Diosma alba of Linnæus, is used at the Cape in bouquets, intermingled among the flowers, in the same way as small subdivisions of Adiantum are commonly employed. The ladies say it is "everlasting wear," and survives a long series of dances better than Adiantum. Grown in gardens, it assumes a luxuriant habit, and forms long slender sprays of delicate green, and it is this young growth that is selected by the bouquetist. The scent, unlike most Diosmeæ, is pleasant, and the foliage outlasts tenfold the quickly withering Fern fronds it replaces. The plant is raised without difficulty from seed, which, however, is rarely to be found in commerce. All the Diosmeæ have a peculiar trick of everting the inner layer of the capsule with a jerk when the seed is ripe, and this makes the gathering of seed very slow and unremunerative.

The Late Thomas Speed.—The friends of the late Thomas Speed, of Chatsworth Gardens, will be pleased to hear that His Grace the Duke of Devonshire has recently had a tombstone placed over his grave at Edensor churchyard.

New York Experiment Station.—The fifth annual report is now before us, comprising a record of the work done at the station, meteorological details, results of experiments, &c. The object of the station is to ascertain and apply the principles of natural history to the profitable cultivation of plants or the maintenance of animals. Passing the experiments on cattle feeding as not coming within our scope, we may mention a few of the more important matters discussed, such, for instance, as the relation of soil temperature to produce, in which it is shown that for the cultivation of Potatos a relatively cool soil is favourable. In the case of Lettuces, a cross between the Red-edged Victoria and the Deer-tongue, the latter yielding the pollen, resulted in the production of seedlings referable to seven different types, the most interesting being one which reproduced the characters of the wild Lettuce, Lactuca scariola. Mr. C. S. Plumb gives a summary of his efforts to classify and arrange the synonymy of a large number of varieties of Wheat and Oats. A curious corelation is mentioned between the number of rows in the ear of Barley and the tendency to tiller; thus in the two-rowed varieties the maximum number of plants that tillered was 28·00, while in the six-rowed varieties the tendency to tiller was less, *i.e.*, 18·00; so the open-panicled Oat averages more fruitful culms per plant than the side-panicled variety. The winter Oats tiller far more than the summer varieties. Mr. Goff, the horticulturist, reports on Potatos, root growth orchards, Grapes, Tomatos, insects, the influence of foreign pollen on fruit, &c. A Potato known as "Buffalo Bill" was found to be the most productive. It is calculated that this variety yielded at the rate of 275 bushels per acre. As regards the question of the relative produce of cut sets or whole tubers for planting, the difference was markedly in favour of the latter. With a view of testing whether regularity of form can be secured by careful selection of tubers, eyes were taken from the most ill-shaped tubers that could be got, and others from the most symmetrical tubers. It was found, however, in the result, that there was no material difference either one way or the other in the character of the produce. The observations on root growth have been continued, some interesting details being given as to the length, ramification, depth below the surface, &c. A root of Vegetable Marrow was measured to a horizontal length of 10 feet when it was unfortunately broken, evidently at a long distance from its extremity. The chief feeding ground for the roots seems to be between 3 and 10 inches below the surface, though others go much deeper; the plants that make the largest development of stem or foliage during the summer are those of which the feeding ground is shallowest in the soil. Experiments made to determine what, if any, influence on the fruit is caused by the application of stranger pollen, led, as in former years, to no definite result. Mr. Arthur's report on the Bean blight (Micrococcus amylovorus) has already been mentioned in our columns. The report concludes with the record of the work done by the chemists.

Madame De Candolle.—Information has reached us of the death, at Geneva, on the 6th inst., in her 76th year, of Madame De Candolle, the wife of the eminent botanist. The greatest sympathy will be felt among his associates and friends for M. De Candolle and for his family.

The Frost Report.—We are asked to say that those gentlemen who contributed reports may obtain copies on application to the Assistant Secretary, Royal Horticultural Society, South Kensington. Fellows and foreign members are also entitled to a copy on application. Copies may be purchased by the public for 5*s.*, on application to Messrs. Macmillan & Co., Bedford Street, Covent Garden.

Horticultural Sundries, &c.—Mr. Benjamin Field is about to open an office and salesroom for horticultural soils, manures, sundries, and pottery, at 93, Queen Victoria Street, E.C. The depôt will remain at Swan Place, Old Kent Road.

Publications Received.—*Handy-Book of the Flower Garden*, by D. Thomson (Wm. Blackwood & Sons, Edinburgh and London).—*Botanical Exchange Club of the British Isles, Report for* 1886, by E. F. Linton, M.A. (Manchester: J. Collins & Co., King Street).—*Jubilee Quadrille*, by Mattei; also *Mother of Nations*: Song, by Leonard Gautier (London: Hutchings & Romer).

THE HARDY FRUIT GARDEN.

DISBUDDING.

The weather of late has been favourable to the setting of the blooms of Apricots. Peaches and Nectarines are in full bloom, therefore attention must be assiduously given to the means of protection for some time to come, as we may expect frosts that would cause the loss of the crop unless provided against.

After flowering shoot-disbudding becomes the next most important operation, and it is one which must be thoroughly understood by the operator before commencing. Apricots should have all gross wood removed, and all others not required to supply flowering shoots should be stopped at the third leaf.

The disbudding of Peaches and Nectarines should be commenced as soon as the buds are sufficiently advanced that they can easily be rubbed off, but the buds should be removed a few at a time, say at three different times, it not being prudent to disbud too heavily at once. Care must be taken to leave the lowest growth bud, and one at the extremity of the branches, removing those that have not fruit at their base, and pinching those in that have; taking care not to disturb the fruit during the operation.

Young trees should receive special attention in disbudding, having due regard to shoots required for the formation and extension of the trees, which should be left, removing gross shoots; and leaving an even balance of growth. *E. Ward, Hewell Grange, Bromsgrove.*

Fruits Under Glass.

VINES—LONG SPURS.

The disbudding, tying down, and stopping of the shoots at a couple of joints beyond the bunches will now require prompt attention, as also will the removing of superfluous bunches as soon as they appear. Vines having long spurs which are allowed to increase in length year after year not only become unsightly but also prevent the production of good Grapes, inasmuch as the sap cannot circulate so freely as could be desired through the tissues of the gnarled shoots; therefore a young shoot should be allowed to grow at their base for fruiting next year, the old spurs being cut close back to the main stem at pruning time. Vines thus treated are rendered thereby more vigorous and fruitful.

Moisture and Temperature.

A dry, warm, and somewhat airy atmosphere should be maintained in houses in which Grapes are beginning to colour, so as to give due flavour and finish to the fruit. The same remark—though with a different object in view—applies also to houses in which the bunches are in flower, in which case the rods should be tapped with the hand twice a day to distribute the pollen. But in the case of shy-setting varieties, such as Muscat of Alexandria and Muscat Hamburgh, it will be advisable to pass some light soft substance over the individual bunches about midday, until a good set is secured. Then, and until the berries begin to colour, the pathways, walls, and surface of the border should be well damped with tepid-water early in the morning, and again at closing time in the afternoon, and once between on bright sunshiny days. These remarks are also applicable to Vines during their progress from the opening of the leaves, to the bunches coming into flower.

Grapes in the early or second-early house, as the case may be, which have completed the stoning process and commenced their second swelling, should have a night temperature of from 60°—65°, 70°—75° by day, with fire-heat, and 10° higher with sun-heat, and plenty of air, running the temperature up to 90° at closing time (about 3 o'clock in the afternoon) with the house well charged with moisture. The temperature of succession-houses should range at night from 60°—65° by the time the bunches are in flower, when, in the case of Muscats (now in flower) it should be raised to 70°, and 10°—15° higher by sun-heat, with a free circulation of fresh air. After the berries are set the night temperature may be lowered—that in the Muscat-house to 65°, and the Black Hamburghs and other varieties should range between 60° and 65°.

Red-spider and Mildew.

Should red-spider attack the leaves, sponge those so affected carefully with soft-soapy water; and if mildew should put in an appearance, which it will do if a low, humid atmospheric temperature prevails, dust the leaves while damp with flowers of sulphur, and maintain a warmer, drier, and airier atmosphere for a few days, and it will soon disappear.

Ventilation and Watering the Borders.

Open the ventilators a little in the morning when the thermometer registers 75° to 80° in houses in which the Vines are swelling their bunches, and at 70° to 75° in succession-houses, and afterwards increase or decrease the quantity given according to the rise and fall of the temperature in the individual houses until closing time. If the vineries are pretty nearly air-tight, the front and top ventilators should be opened a little late in the evening, and closed first thing in the morning, except houses in which the Grapes are beginning to colour, or coming into flower, which should have more or less air on day and night. Give sufficient supplies of tepid water, say at a temperature of from 75° to 90°, to the roots, and thoroughly soak the entire mass of roots and soil when considered necessary.

The Grape-room.

Bottles having the piece of wood attached to the individual bunches inserted in them should now be emptied, then refilled with fresh water, and an inch or so of the wood bearing the bunches should be cut off before again placing it in the freshly-filled bottles, removing at the same time any bad berries that may be in the bunches. *H. W. Ward, Longford Castle.*

Forestry.

WOODLAND WORK.

An early opportunity should be taken to clear up woods and plantations, timber and faggots from the drives, and to level down the ruts caused by the transport of timber. April is a good time for the sowing down of wood-roads and bare patches with grass seeds, and this is easily performed by levelling the surface with a spade, making it fine and smooth with a rake previous to sowing. Prune all dead and twisted branches from the trees, and finish off everything within the woodland in a neat and tidy manner before leaving it for the season.

Thinning.

Pine plantations may still be thinned out, but those composed principally of hardwood trees should be left till the autumn. In thinning look more to the ultimate value of the crop than to that of what is at present removed, and keep the trees thickest on the most exposed side. This is of the utmost importance in high-lying woods. Pruning should always accompany thinning in the way of removing a rival leader, ungainly side branches, and shortening in such as are infringing too much on neighbouring trees or fences. Remove all timber to the drives, or, better still, from the wood altogether; lot the firewood in convenient places for disposal, and should the branches not be wanted for faggot-making, have them burned, and so keep down insect-pests, and maintain the woodlands in a clean and healthy state. Where charcoal is manufactured on the estate the wood for the purpose may be carted to where the kilns are to be erected.

In allotting the timber for sale keep the various kinds and sizes together, that is, where cubical measurement is to be taken, but in the case of propwood that is of little moment. We usually saw our propwood to 3 inches in diameter at the small end, and arrange the butts uniformly for ease in counting. For the best quality of props we cannot at present get more than 3*d.* per lineal yard, while Oak sells at 1*s.* 6*d.* per foot, Ash and Elm at 1*s.* 8*d.* per foot, if of good quality; and the others, save, indeed, Larch and Birch, are merely given away, so low are the prices. What landowners must do is this, use more of their timber for home purposes than they have hitherto done. The estate joiner may say, "Do no such a thing, for it won't last, and is knotty and hard to work." This latter confession solves the whole problem as to why so little of a proprietor's timber is used on his estate.

Foreign logs are squared up ready to use, and, of course, are far preferable for the builder than such as are cut out of our own timber. I have sent in logs of the Douglas Fir, Corsican Pine, Abies grandis, and many others that could hardly, as far as graining of the wood is concerned, be distinguished from imported timber, and yet it did not please—the trouble of converting it into boards, &c., and the length of time required for seasoning, being too much for the patience of the builder and joiner.

In the forest department of this estate we convert, in considerable quantity, home-grown logs of large dimensions into boards, planks, fencing-posts, gates, stiles, bridges, &c., and with results that are in every way satisfactory.

Immature trees should on no account be cut up for any but the most temporary uses, else a telling argument is brought forward by the non-advocate of the use in our own country of home-grown timber. There is a wide difference, as every one who is acquainted with timber must know, between fully matured wood and, that felled in a sapling, or half-grown state.

My advice to every proprietor, while the prices of timber remain as at present, is, Convert your own trees, but only those that have arrived at almost full maturity, into timber for estate purposes generally, and you will be quite satisfied with results as well as effect a saving by so doing. *A. D. Webster, Penrhyn Castle, North Wales.*

The Bulb Garden.

CHIONODOXA LUCILIÆ.

What a transformation in garden scenery! A few days ago frost in severe form, and snow of considerable depth, was the experience of most of us, but to-day (March 28) we have a glorious picture in this lovely bulbous plant; now a perfect carpet of its handsome blue and white flowers, and nothing to vie with it in the garden, it stands alone, a symbol of modest beauty and supreme loveliness. Our first flowers of Narcissus pallidus præcox opened their lovely blossoms on the 25th ult. *Alpina.*

The Haarlem Bulb Gardens in March.

Everything is very backward, owing to the cold weather. A few things flowered occasionally in pots or in the open ground under glass in pits. Tecophilæas were very fine, in three good and distinct varieties—the fine sky-blue T. cyanocrocus of Leybold, with its whitish throat, the white lines with a blue margin; T. cyanocrocus Leichtlini, which we suppose is offered now and then as T. cyanocrocus albus; and a dark blue variety, T. cyanocrocus violaceus. Of Puschkinias we had the well-known P. scilloides (Adamsia scilloides), and a more dwarf variety of it known as Puschkinia libanotica compacta. Of Scillas some S. bifolia varieties were very good, viz., S. bifolia alba, the common white; S. bifolia ater-rosea, a dark rose; and S. bifolia taurica, a compact flowering dark blue; but Scilla puschkinioides, very much pleased us, which flowered according to the plate in the *Gartenflora* (1881, t. 1051, fig. 1). A good plant, and worthy of being recommended if it should prove good for culture in the open ground, is Muscari azureum, Fenzl, well figured in the *Gartenflora* (1885, pl. 1199 B). It has sky-blue flowers, and seems to be the earliest among all the Muscaris. It is the Muscari lingula of Baker; we had specimens of both in flower at the same time.

Galanthus nivalis lutescens is very distinct, and is well figured in the group of Snowdrops in the *Garden*, 1886 (vol. xxix, pl. 528). Crocus Korolkowi, Fenzl, is a golden-yellow variety, which must be better known and grown before we can judge as to its merits. Colchicum luteum (Baker) is very nice, with its dark yellow flowers, darker with us than is shown in the plate of the *Botanical Magazine*, tab. 6153; it comes in at the same time with the leaves, and is one of the few spring flowering species. A gem is Bulbocodium ruthenicum, with its elegant rosy-lilac flowers, within which the eyes—yellow stamens—make a very good effect. If this plant proves amenable to cultivation in the open ground on a large scale it will doubtless become a great favourite as a spring flower.

A few evergreen terrestrial Orchids began to show flowers, and there was a fine plant of Orchis Robertiana. In general the culture of these Orchids may well be recommended; they do well with us in pots in a cold pit. O.

Robertiana is a capital plant, if grown well; our plant had a stem of 16 inches in height, with a flower-spike 6 inches long, consisting of twenty-five flowers and flower-buds, of which those on the lower part were in full bloom, but those towards the top were more or less unopened. The colour of the flower is lilac-rose. *J. H. Krelage, Haarlem.*

HOME CORRESPONDENCE.

THE GARDENERS' ROYAL BENEVOLENT.—Your illustration of the benefits conferred by the Institution upon the late Mrs. Susannah Falconer, ought to induce every gardener to join it. Mr. Falconer himself was also for several years a pensioner of the Institution, but you are in error in stating he was gardener at Nonsuch Park; he was gardener to Mr. Palmer, Cheam House, and he was the first exhibitor of six Azaleas in London: he also raised a number of seedling Azaleas in 48-pots, one pot of which he gave to Mr. Kinghorn, then gardener to Lord Kilmory, at Isleworth, who flowered several of them, one of which was named Murrayana, and soon became a favourite. The rest of those seedlings Mr. Falconer sold for a trifle to Mr. James Ivery of the Dorking Nurseries; a few years later we had from that firm Iveryana, Beauty of Reigate, and several others, but whether these were Falconer's seedlings I cannot say. Mr. Falconer was also the instigator of two of his neighbours' gardeners in growing Azaleas, viz., Mr. Carson, Nonsuch Park, and Mr. Green, Lower Cheam, both of whom became famous in the exhibition tent, and for many years held the field against all comers and with plants of their own grafting on the stocks supplied to them by Mr. Falconer. *W. Armstrong, Charlton Cottage, Harlesden, N.W.*

CHANCELLOR POTATO.—If this variety of the Potato were more widely known it would soon become a favourite not only with exhibitors but also with market gardeners, for while it readily responds to good cultivation I have not found the flesh in the least incline to coarseness of texture. In the dry season of last year every root which I lifted had good large shapely tubers, and with an average weight per root of 7 lb.; nor is one disappointed in it when placed upon the table late in the season, as I have to-day had it in excellent condition. Mr. Dean is to be congratulated upon the production of such a fine variety, and from a market gardener's point of view I would specially advise growers to give Chancellor a trial. *H. Ridgewell, Histon Road, Cambridge, April 7.*

THE ROYAL HORTICULTURAL SOCIETY.—At last (March 25) the schedule of prizes and arrangements for this Jubilee year, 1887, has been issued to the Fellows. It consists of thirty-nine pages, but what are they filled with? Certainly in this year it was expected the Council would provide at least one really good show, but so far as I perceive the Council does not offer one single prize or make the slightest attempt to induce exhibitors to send their plants or flowers to South Kensington. If I am correct in this, how can the Council expect the Fellows to continue their subscriptions, or the public or exhibitors to take any interest in the meetings of the Society? The schedule consists of prizes presented by Mr. Hartland for white Daffodils, the awards at the Auricula and Primula Society's show, those of the National Rose Society's show, the Carnation and Picotee Society, prizes presented by the Trustees of the Veitch Memorial Fund for Cypripediums; Mr. Roupell's prizes for Hollyhocks; and prizes presented by Messrs. Sutton, Carter, Webb, Fidler, Deverill, and Wood, for Cucumbers, Melons, Peas, Cauliflowers, vegetables, Kidney Beans, Onions, and Potatos. Can the Royal Horticultural Society descend to a much lower ebb, when the Council have to depend upon the prizes offered by these three special Societies to form the shows for their Fellows in return for their subscriptions—prizes that have been contributed by the members of these Societies, rather than that their favourite flowers should not be exhibited? Is it not right to say after this—and the statement of affairs made at the last annual meeting—that it is quite time the Royal Horticultural Society should be reconstituted, that the Society should have a home of its own free from control by any save its own Fellows? A list of the Fellows should be printed annually; the Council should be nominated and elected by the Fellows; and the Fruit and Floral Committees should be nominated and elected by the Fellows. In addition to these vital alterations, a plan of election and retirement of both Council and committees should be formulated, say, one-third of each should retire annually; that the committees should have the choice of their own chairman and vice-chairman (not have permanent chairmen as at present); moreover, that the members of committees should be Fellows. In making awards the committees should publish the votes for and against, so that a certificate could be estimated at its proper value by the public. These remarks are prompted in the hope that Fellows of the Society, and lovers of horticulture in general, will aid by their suggestions, and help to raise the Society to what it should be, not in name only, but in position—the Royal Horticultural Society. *H. Little.* [We fear the condition of the exchequer accounts for the defects in the arrangements for the year. Ed.]

LATE CHRYSANTHEMUMS GOLDEN GEM AND GEANT DE VALENCE.—As further proof of the lateness of these varieties I send for your inspection blooms of each. Of the first-named the lateral buds are but just opening. The colour is not its true colour when in proper season of flowering, and which you will have observed in the flowers sent in January last. The other variety, Géant de Valence, rosy-lilac, is also a very late-flowering variety, and a tall grower. *R. Owen, Maidenhead.* [We think it undesirable to have these truly autumn and winter favourites always with us, by robbing us of the charms of novelty and freshness; moreover, their colours suffer under the brighter sunlight. Ed.]

FLOWERS AT OAKWOOD.—The late trying winter seems to have made the early spring flowers late but more beautiful even than usual. At Oakwood we have a bank of loam covered with brown and green moss: through this small plants of Hepatica have thrown up their flowers. I counted eight shades of pink and as many of blue; these, with two sorts of white, give an effect which could hardly be beaten in Switzerland. In some bays of the rockwork Chionodoxa Luciliæ, Scilla sibirica, a Galanthus called Redoutei, but, as I am told, incorrectly; Narcissus nanus, and Helleborus purpurascens, side by side, look very pretty. Chionodoxa sardensis, when in good clumps, and Scilla taurica, are I think equal in beauty to the favourite Chionodoxa Luciliæ. Anemone fulgens is very late, and will not bloom for some days; Narcissus minimus, which I owe to the kindness of its collector, is much admired. *George F. Wilson.*

LAPAGERIAS.—These choice cool greenhouse climbing plants deservedly attract admiration when seen in good condition, particularly so when the rose and white varieties are growing together; they delight in a moist situation shaded from direct sunshine, abundance of water at the roots, and moderate syringings when making their growth. Strong plants luxuriate when planted out in a border, the soil that suits them best being rough fibry peat freely mixed with sand and a little charcoal, and when grown either in this way or in pots plenty of drainage is requisite. Slugs are partial to the young shoots, and should be diligently looked for; the shoots likewise need frequent attention, to keep them from becoming injured by getting entangled. *Thomas Coomber, Hendre Gardens.*

PRIMULA RUSBYI.—Referring to the article on Primulas on p. 449, I may say that the credit of introducing P. Rusbyi to this country belongs to me, not to Mr. T. S. Ware, as stated in that article. About four years ago I exhibited it in flower at one of the meetings of the Royal Horticultural Society, and it was awarded a First-class Certificate of Merit. After waiting patiently for two years, I succeeded in obtaining some plants from the United States of America, and as soon as they flowered I exhibited them as stated above. *R. Dean, Ealing, W.*

NEMATOID WORMS.—The article on Gardenia root disease on p. 488 is a valuable one, and the list of garden plants in which Nematodes have been found very useful. I have, however, also seen them abundantly in Melon roots (not mentioned by your correspondent), also abundantly on Stephanotis and Tomato roots, in Onion bulbs and roots; in the leaves of Gloxinia, Odontoglossum, Disa, Dracæna, and in different species of Dianthus; also in the roots of Hoya and Sparmannia, in the leaves of Pears, and in the roots and leaves of various species of Rubiaceæ; in leaves of Lotus corniculatus, causing extensive destruction, and very abundantly in Lettuces and in artificially grown Mushrooms, in which latter plants they cause distortion and disease. On lately examining some plants of Nectria ditissima, a fungus which is said on insufficient evidence (or, rather, on no evidence at all) to cause canker in fruit trees, I found all the perithecia (spore-cases) packed full of Nematodes in place of fungus spores. Jakob Eriksson, in his *Bidrag till Kännedomen om Vara Odlade växters Sjukdomar*, records Nematodes from Heliconia, Strelitzia, Hordeum, Coleus Dipsacus fullonum (mentioned doubtfully by your correspondent), Euphorbia, and several other plants. Plants become affected by Nematodes direct from the soil. The soil in which diseased Cucumbers have grown frequently swarms with Nematodes. When Dracænas and other greenhouse plants are plunged into old Cucumber beds they often contract the Nematode disease from them. *W. G. Smith, Dunstable.*

SKIMMIA JAPONICA.—This beautiful little shrub is now in bloom here in the conservatory, being completely covered with white flowers. Its dark green leaves and its most attractive coral-like berries, which remain on the plant for two years in a thoroughly fresh state, make it quite a little gem for the conservatory and also for the cottage window, and it also does well in the rockery or fernery if protected from sharp frosts. It is easily managed and increased by cuttings put in sand and peat under a glass cover and placed in heat. I find it best to sow the berries in peat, when they soon come and make good plants if placed in pits or frames till June, and then taken out to the open air till October. *W. Smythe, The Gardens, Basing Park, Alton.*

HERBACEOUS PHLOXES.—I should like to supplement the remarks of "J. D.," p. 423, concerning these plants. Although no allusion is made at p. 381 to chopping them up with the spade, yet the fact remains that this is the generally accepted method of division, and certainly a most clumsy one. The young shoots now issuing from the old stools make excellent cuttings, and if placed in a slight hotbed for a fortnight or three weeks, and kept close and shaded, the majority will be rooted by that time, when they must be removed and be gradually hardened off and ultimately potted off singly. I have rooted many thousands thus, and had quite thought that those who grew Phloxes for what they are worth, had quite forsaken the old practice of taking autumn cuttings, since cuttings taken at this time are produced upon the flower-stems, and this generally after the flower-head has been removed. In the case of many varieties which are late in flowering, the cuttings are not produced till frosts are expected, and then they are of little worth as compared with a fresh vigorous cutting of spring. To have a continuance of these handsome summer and autumn flowers, and at the same time fine panicles of bloom, it is a good plan to strike a few cuttings annually and to discard all stools at four years old. These Phloxes are very gross feeders, and make a great quantity of surface roots, and will by the expiration of the time stated have completely exhausted the soil about them, which is always succeeded by the deterioration of the flower-spike itself. They delight in a well enriched soil, and, like the Chrysanthemum, should never know the want of water, and after the first year may be greatly assisted by liquid manure. Taking into consideration their tendency for rooting on and near the surface (they will not do this so much provided the ground below is well dug and heavily manured), I plant them somewhat deeper than I should otherwise do. Another good way to secure fine heads of bloom is from seed sown in February or March in slight warmth, and given a generous treatment, never allowing them to become drawn or to suffer in dry weather. Plant out in well prepared beds when large enough, and you will be rewarded in autumn by an abundance of bloom. *E. Jenkins.*

SEEDLING DENDROBIUMS.—I have now before me some blooms taken from three plants that have just been flowered for the first time by Mr. W. Holmes, the gardener at Grangethorpe, Rusholme, Manchester. Some three or four years ago, when Mr. Holmes had charge of Mr. O. Schneider's garden at Cromwell Grange, Fallowfield, it will be remembered a capital collection of Orchids was there speedily gathered together; when, however, Mr. Schneider parted with his plants a few seedling Dendrobiums, very small, and needing much care and attention, were given to Mr. Holmes, who was

engaged by Mr. C. Mosley to take charge of his new garden and glass ranges then in course of erection. Here, in due course, the seedlings found a home, and have come on very satisfactorily, some bulbs this present season measuring 6 and 8 inches in length. After a good ripenening some buds appeared on several of the plants, and then followed a time of anxiety and pleasing expectation, only known to those who have effected a good cross, and anticipate good results. At length the blooms opened, and a capital product is found to be the result. It is too early to say what the plants may develope into; but since a grand form of D. Findleyanum was fertilised with D. aureum (heterocarpum), and the progeny partook of the characteristics of both parents, it will be easily understood that one or more beautiful forms may now be added to the long list of showy Dendrobiums. The largest of the three varieties now before me measures 3 inches across the petals, which, with the sepals, are of a clear white, beautifully suffused with rosy-pink at their points; the lip, which is nearly flat, is orange at the base, with a broad band of white all round, the tip being of a bright rosy-pink, similar to the other divisions of the flower. In many respects the blooms resemble D. crystallinum, but are stouter and of stronger texture. The second flower is rather less in size, very similar in colour, with a nice patch of purple on the lip immediately under the column. The third variety is much smaller, coloured very like the two preceding, but the lip has much more of the purple centre of D. heterocarpum; all are beautifully scented. Several of the plants were recently exhibited at the Town Hall, Manchester, when a First-class Certificate was awarded them. The Manchester growers have certainly done well in this class of plant culture, since D. Ainsworthii, Cattleya Mitchelli, and Cypripedium Ainsworthii have appeared in the collection of Dr. Ainsworth, whose gardener—E. Mitchell—for the past twenty years has been working in this direction. D. Leechianum, Cypripedium Swanianum, many C. Harrisianums and Calanthes, and a batch of Cypripediums, the result of a cross between C. Parishii and C. Pearcei, at Oakley, Fallowfield, the residence of the late W. Leech, Esq., and now in the very next garden, the beautiful forms under notice have appeared. May many fresh varieties yet be obtained, as there are many plants on which growers may still exercise their skill and culture, and ever possess a good share of enthusiasm and patience. Unless my memory deceives me the late Mr. G. Toll, when gardener at Pendlebury House some eighteen or twenty years ago, succeeded in raising and flowering a seedling Zygopetalum; but what became of the plant I do not recollect. Maybe they are in cultivation in some gardens even now. I also remember seeing some seedling Odontoglossums in a famous collection of Orchids near Liverpool, but do not know whether any have bloomed yet. Doubtless we shall hear of many choice forms continually being flowered, as many growers would now seem to be working in this direction. *W. Swan, Howick House, Preston.*

COVENT GARDEN SALESMEN.—I notice in your last issue an article which is very unjust to salesmen who, like myself, sell choice English goods otherwise than by auction, as it gives growers the impression that we are all dishonest, and that they should consign their goods to one whom they can watch sell them. There are plenty of salesmen who conduct their business on quite as straight lines as those that sell by auction, and in justice to those you should, I think, acquaint the growers of that fact, after your sweeping assertion in favour of auction sales. *G. M.* [We do not dispute our correspondent's contention, indeed we expressly avoided imputations against individuals; but that there must be something rotten in the system pursued by some, is evident from the complaints which reach us. Ed.]

PHILIP MILLER.—In your impression of April 2 "W. B. H." writes (alluding to Miller's *Gardener's Dictionary*), "The first edition was published in 1736, in one folio volume." I have a volume in an excellent state of preservation, "Printed for the A. U. T. H. O. R., P. M.; and sold by C. Rivington, at the Bible and Crown in St. Paul's Churchyard, London. M.DCC.XXXI." I shall be pleased to show it to "W. B. H.," or any one else. *Fredk. Hughes, The Gardens, Overbury Court, Tewkesbury.*

CROCUSES AND BIRDS.—It seems to be the experience of many persons to have lost all their Crocus flowers by the attacks of birds during the late cold weather. Two or three years ago I gave a good collection of them to the Atkinson Morley Hospital at Wimbledon. I hear that the flowers this season have been consumed by the birds as fast as they showed bloom. If, when taken up in the autumn and planted in beds, might it not be well to secure their preservation next season by means of a wire covering? Sparrows, which are probably the greatest thieves, are much too cunning to mind any mechanical apparatus or dummies of any kind. *John Colebrook.*

THE APIARY.

APPLIANCES.

Attention to the above is now necessary if not done before. Most people who keep bees go in for comb honey as well as extracted. For the former nothing is so convenient as sections, that is, little boxes made usually to hold about 1 lb. of honeycomb. One thing is essential or the bees would not store honey in these sections—that is, they must be kept warm. For this purpose the boxes are put in a rack or section-case. If these are carelessly made the bees will probably keep down below, and will either do nothing or swarm rather than enter the supers. But if the bees can be kept snug they will readily enter these boxes, especially (in my experience) a strong colony of old-fashioned English bees. In this article I will call the rack a crate, although I believe that is a disputed word. But "What's in a name? A Rose, &c." There are crates and crates. The crate represented in fig. 100, is, no doubt, one of the best. It is made and sold by Messrs. Geo. Neighbour & Sons, of Regent Street.

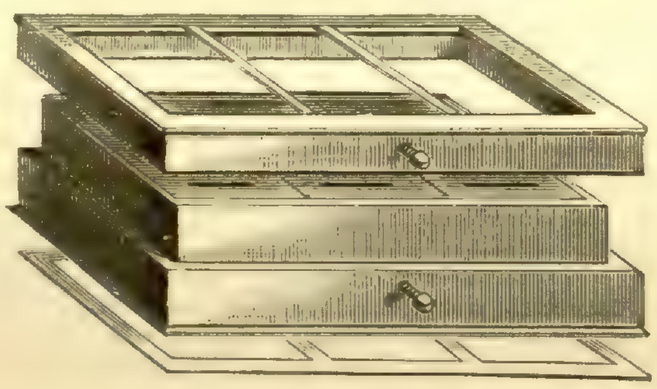

Fig. 100.—Honey crate.

At any rate it received the highest award at the South Kensington show in 1886. Those persons who saw that show will easily understand the keen competition, and give praise where it is due. The engraving shows one crate with its separate parts raised. The outer casing divides in the middle, either end up, and the sections are kept wedged together by means of the two screws in the centre of each division. When the crate is close down there is only half bee space between it and the broad frames of stock hive, so that the wooden frame shown at the base is needed to make the whole bee space. These crates are intended to be used in pairs, one above the other, during the honey flow, and by the above arrangement are perfectly interchangeable and invertible. A little care and judgment is necessary about the inverting business, both as to manner and time. *When the sections are nearly filled* is the proper time to invert. It is necessary to call the attention of the reader to the words in italics, for if the wrong time is chosen disappointment is more than likely to ensue. It is better not to invert at all than to invert at the wrong time. If the sections are filled with pieces of new comb, as advised by Mr. S. Simmins, (p. 389) they would be filled with almost incredible speed, and finished off in a very beautiful manner. But of course pieces of thin foundation can be used, as is usually the case. It was said above that these crates are intended to be used in pairs during the honey flow. When one crate of sections is getting towards completion the second one is to be placed under the other. By this means it will frequently be found that both crates will be finished in about the same time often occupied by one. *Walter Chitty, Pewsey.*

CROCUS IRIDIFLORUS.

Under the name of C. byzantinus this has been long in cultivation as an autumn-flowering variety, its robust habit, broad foliage, and sharply pointed lilac perianth segments of which the inner are much shorter than the outer giving it a distinct appearance. It is a native of Transylvania, and the Banat, being found in the vicinity of the remarkable basaltic rocks, of which, through the kindness of Mr. George Maw, we are enabled to give an illustration (fig. 101), which may serve as another example of the manner in which his exhaustive monograph of the genus Crocus has been prepared.

In alluding to Crocuses we are reminded of one point which has, as it seems to us, escaped Mr. Maw, though we may well feel some hesitation in making such a statement. We allude to the structure and use of the central white band so common in the leaves of various species. Microscopically this consists of loosely packed cells containing a colourless juice. It may be that these cells act as a reservoir for water.

TREES AND SHRUBS.

SCIADOPITYS VERTICILLATA.

Some twenty-five years ago I began forming a pinetum, the soil and atmospheric conditions being favourable. The plan pursued over all these years has been, never to let any distinguished visitor leave till he or she had planted a tree, and never to plant the same kind of tree twice, so that, in years to come, it should be interesting from two points of view; but in looking out for fresh kinds we found we were getting near the end of our tether as regards suitable trees, and with some misgiving, I ordered from a nurseryman some plants of the Umbrella Pine of Japan. To my great satisfaction this tree has come through the winter uninjured. I have thought it well to record this fact, because, ever since last New Year's day up to the end of March, no more trying time for trees and shrubs has ever come under my notice. During all those ninety days we had not more than ten nights without frost, and which was often severe. After such a period of trial this remarkable Conifer may now be planted without misgiving as to its hardiness. At the same time and place a specimen of Abies bracteata was planted, and this lovely Fir has also stood the winter all right, and will one day be a fine object in the pinetum. It may be interesting to those planting memorial trees to know that Mr. Smith, of Stratford-on-Avon, makes memorial labels, on which are written the names of person, tree, date, &c., for the sum of 5*s.* each; these are simply indestructible by fair means. *J. Rust, Eridge Castle.*

The Large Yew Tree at Craigends, Renfrewshire.

The following particulars in reference to a Yew tree in the grounds of J. C. Cunninghame, Esq., of Craigends, Renfrewshire, may be of interest to the readers of the *Gardeners' Chronicle*. The height of the tree is 41 feet 9 inches; the girth at 1 foot from the ground is 21 feet; then it breaks into fourteen limbs, the girth of which ranges from 9 feet to 3 feet. These branches grow in an upright uniform direction, breaking out into smaller limbs or branches, which in regular form come down to the ground, along which they spread all round the tree. The circumference at the extremity of the branches is 80 yards, and the branches grow so very close together that it is with some difficulty a person can get near to the bole. The river Gryffe flows on the north side of the tree, and at a distance of 60 feet from the stem. The height of the tree above the bed of the river is 8 feet 9 inches, the ground rising gradually to the south. It is supposed that the roots are below the bed of the river, but whether this be so or not, it is a fact that it is abundantly supplied with moisture, the river overflowing its banks periodically, and sometimes rising to within a few feet of the bole. The age of this fine specimen of a Yew tree is not known. *Donald McBean.*

SCOTLAND.

ROYAL CALEDONIAN HORTICULTURAL SOCIETY: SPRING SHOW.

April 6 and 7.—This was held in the Waverley Market, Edinburgh. As compared with some of the recent meetings of the Society, there was a marked falling off in the general effect of the show. The quality of individual exhibits was, however, quite equal to the best that has been seen at former spring shows in the Waverley Market. Rhododendrons, though less numerous than usual, were never surpassed. The larger and smaller classes of these exhibited by Messrs. R. B. Laird & Sons were the most conspicuous objects in the show.

The tables of spring flowers were much above average in regard both to the selection of kinds and their cultural condition. Indian Azaleas were fine, well bloomed, and fresh.

Nurserymen's tables for competition, which have always been a splendid feature of these shows, were on this occasion conspicuous by their absence. Messrs. R. B. Laird & Sons were the only competitors in the class provided for tables 40 feet by 10 feet put up for effect, and deservedly obtained the 1st prize for a group of the most attractive description, composed largely of Azalea indica in specimen and small plants, greenhouse Rhododendrons, Ericas, Hyacinths, Narcissi, Lilacs, tastefully blended with Maidenhair and other Ferns, Palms, and other foliage plants.

Nurserymen's collections, not for competition, were put up by Messrs. Methven & Sons, who had a large and varied collection of great merit, consisting of Ericas, Rhododendrons, Deutzias, and other forced flowers and foliage plants. A small but select group was exhibited by Messrs. Ireland & Thomson, comprising an interesting lot of Orchids and other flowering plants, and a choice selection of foliage plants and Ferns. But the most attractive and interesting of all exhibits of this kind on this occasion was that from Messrs. W. Thomson & Sons, Tweed Vineyard, Clovenfords. It consisted of some 250 Orchids in bloom, beautifully interspersed with Maidenhair Fern. Every plant, though small, was in perfect health and well established, and the blooms in the freshest condition. Among the most notable were Odontoglossum crispum var. picta. To this was awarded a First-class Certificate, and it was a subject of interest to Orchid *connoisseurs*. Of Odontoglossum Ruckerianum there were several meritorious varieties, one of which also received a First-class Certificate, as also did O. Schillerianum, a nicely bloomed plant of which attracted much attention. Among Cattleyas the numerous forms of C. Trianæi stood out conspicuously; there were also some forms of C. Mendelii, and the lovely and rare C. speciosa Ernesti.

The Lawson Nursery and Seed Company had a fine group of Conifers and other evergreens and Japanese Acers intermingled with some well-bloomed Clematis and choice forms of Ivies. The same firm also took the 1st prize in both the classes of Conifers, Messrs. R. B. Laird & Sons being 2d.

Messrs. James Dickson & Sons made a very effective display with spring flowers, and forced stuff of a miscellaneous description, and tabled also a box of Maréchal Niel Roses. Roses of excellent quality and in considerable variety were exhibited also by Mr. Hugh Dickson, of Belmont, Belfast. The twelve Maréchal Niel blooms with which Messrs. R. B. Laird & Sons took 1st prize were remarkable for their fine colour, size, and substance. Mr. John Paterson, Millbank, Edinburgh, and Mr. James Bald, Canaan House, Edinburgh, were respectively the most successful exhibitors in pot Roses, and both collections were well grown and well bloomed.

Hyacinths were quite up to the usual standard. In the nurserymen's class of twenty-four Mr. Hugh Hanan, Bank Street, Edinburgh, easily obtained the 1st prize, with a very evenly finished lot; and Messrs. R. B. Laird & Sons were 2d, with a stand in which were many good spikes, but lacking the evenness and balance that characterised the 1st prize stand.

Stove and greenhouse plants were thoroughly well done, those from Mr. Paterson, Millbank, which took the 1st prize, being splendidly bloomed.

Orchids were very good, a finely bloomed lot of six from Mr. Curror, Dalkeith, taking the 1st prize in that class, Dendrobium fimbriatum oculatum, D. thyrsiflorum, and Ada aurantiaca being very profusely flowered. In the smaller classes for Orchids there was rather keen competition, but space forbids our particularising.

Cape Heaths were very fine, though the entries were not numerous, those from Mr. Paterson being, as usual, 1st in the class of four.

Ferns and Selaginellas made a plentiful show. Mr. Grossart, Mr. Paterson, Mr. Robert Grieve, Falcon Hall, were the principal prize-takers in the classes embracing tender exotic species: the Gleichenias from Mr. Paterson were especially fine samples of their kind. The Filmy Ferns and dwarf British Ferns staged by Mr. A. W. Paterson, Pilrig Model Buildings, an amateur, are worthy of special mention as samples of cultivation.

In the class for a table of hardy spring flowers (open) the competition lay between Mr. Robertson Munro, Abercorn Nursery, and Mr. Sinclair, East Linton, the former taking 1st honours with a thoroughly characteristic table, bristling with interesting species of spring-flowering, herbaceous, and alpine plants and hardy bulbs, many of which were rare, and all of a choice character. The 2d prize table was excellent as a display of spring-flowering plants, but had not a few sorts that can only be flowered in spring by means of forcing.

Fig. 101.—Verespalak, Transylvania: a locality for Crocus iridiflorus. (see p. 520.)

Fruit was limited. Strawberries were good. Those and the Lady Downe's Grapes from Mr. McKelvie, Broxmouth, being especially fine. Excellent Pines were tabled by Mr. Murray, Culzean, which took 1st prize, and Mr. McIntyre came in a good 2d.

Vegetables were both plentiful and good; a good deal of excellence being noticed among forced subjects, such as Potatos, Peas, and Kidney Beans.

Scottish Horticultural Association.

The first meeting for the session of the Scottish Horticultural Association was held on the evening of April 5, at 5, St. Andrew Square, Edinburgh. Mr. D. P. Laird, President, delivered the inaugural address. He said that horticultural exhibitions were a great power for good. There were, however, exhibitions and exhibitions, and it would be far better if a lot of little flower shows were done away with. Many of them were started, not for the benefit of horticulture, but for the benefit of a private purse. He thought it was a great advantage not to have too many gardeners in connection with the management of shows. He deprecated the sending of youths who had no natural taste for gardening to the trade, and said that journeymen gardeners should not look to the money part of a situation so long as they were young men, but should go where they could get the best training. *Edinburgh Evening News, April* 6.

SOCIETIES.

ROYAL HORTICULTURAL.

Tuesday, April 12.—This relatively small meeting must be regarded as one of much interest, not so much on account of the large display of the genus Narcissus, but for the varied and little known plants from the Royal Gardens, Kew, and from Pendell Court; some few fine varieties of Cattleya and Odontoglossum, and cut blooms, and flowering plants of Roses in a perfectly fresh condition from New York. We should be sorry if this latter fact were an earnest of what our early Rose growers will in the future have to anticipate from their friends on the Atlantic seaboard of the United States. The flowers were so fresh and fragrant, after their long journey, that all sorts of possibilities arise.

A grateful mass of colour was afforded by Messrs. H. Lane's group of Azalea mollis, placed most suitably on the floor of the conservatory.

Floral Committee.

Present — G. F. Wilson, Esq., in the chair; and Messrs. Rev. W. Wilks, J. Douglas, Shirley Hibberd, A. Bennett, A. Perry, G. Duffield, J. Fraser, C. Noble, C. Pilcher, A. M. Pollett, A. F. Lendy, H. Turner, W. Goldring, M. T. Masters, J. Walker, W. H. Lowe, A. Bradshaw, R. Dean, H. Ballantine, J. Dominy, J. O'Brien, E. Hill, B. Wynne, J. Hudson.

Messrs. W. Paul & Son, Waltham Cross, showed specimens of Rose Puritan, Tea, in plants in pots and cut blooms. The cut blooms had been packed in two ways; 1, with their stems in water placed in flower-holders, and 2, wrapped in damp cotton wool in an air-tight tin box; but as regarded freshness and freedom from injury, there was little to choose between. The packages came by the *Etruria* s.s., and left New York on April 2. The variety was raised by Mr. Barnett, and is a pure white flower, well built, and of medium-size. It received on this occasion a Certificate for the first time in this country. A rose-coloured variety of H.P. Rose named Mrs. John Laing was shown by Messrs. Paul & Son.

Mr. H. Bennett, Shepperton, Rose grower, showed two varieties of Rosa polyantha, Golden Fairy, a fawn-coloured, very diminutive fairy Rose; and minutifolia alba, an exceedingly dwarf white-flowered miniature plant of free-flowering habit, and foliage of the size and form of common Box. Both are classed as so-called Pedigree Roses.

Orchids.

We observed three varieties of Cattleya Trianæ Schrœderi—one from F. Wigan, Esq., Stone, Staffordshire (gr., Mr. East), whose flowers were pale flesh colour; another from Baron Schroeder's garden, The Dell, Egham (gr., Mr. Ballantine), in which the mauve tints were very decided, and the orange stain in the throat less so than in the flowers shown by Baron F. de Rothschild, Waddesdon, Aylesbury (gr., Mr. A. Bradshaw). The last named was a very light coloured form, approaching white, the stain of orange in the tube very deep in tint and over a large area, the lip being finely frilled.

Mr. F. Wigan had a well bloomed plant of Dendrobium Findleyanum in a 24-sized pot.

Messrs. J. Laing & Co., the Stanstead Park Nurseries, Forest Hill, showed a capitally flowered plant of Dendrobium Ainsworthii; the flowering pseudobulbs numbering ten. A Cultural Certificate was given: two small plants of Cattleya Lawrencianum, with a flower or two on each, came from the same nurseries.

Baron Schroder had the white variety of Odontoglossum Pescatorei var. virginalis, quite pure in colour but for the large yellow crest. The plant possessed two spikes, one of six blooms and one of twelve. The dazzling O. P. Veitchiana was sent as a cut spike of bloom from the same gardens.

A. M. Pollett, Esq. (gr., Mr. Parks), Oldfield, Bickley, sent a small plant of Cattleya amethystina, in which the lip colour was remarkably good; Cymbidium eburneum, Philbrick's variety, a white flower, described in the *Gardeners' Chronicle*, May 8, 1886.

J. T. Gabriel, Esq., 6, Palace Road, Streatham Hill, sent Odontoglossum Andersonianum, Gabriel's variety; Cattleya Trianæ, Gabriel's variety; Odontoglossum Ransonianum, the latter of handsome marking.

W. Thompson, Esq., Stone, Staffordshire (gr., Mr. W. Stevens), showed Odontoglossum crispum, Thompson's variety—a magnificent flower, nearly 6 inches across and of stout substance. The flowers have a white ground colour and bold spots of chocolate-brown, and numbered nine on the robust spike.

A pretty hybrid Cypripedium leucorrhoda × Roezlii and Schlimi albiflora came from Messrs. J. Veitch & Son's nursery. The side petals are straight, slightly depressed from the horizontal position, and have a twist of one-half, pinkish-white, as also the lip in its anterior portion; dorsal sepal white, slightly stained with purple, and with ascending green lines.

Other Plants.

A miscellaneous collection of plants came from the nurseries of Messrs. J. Veitch & Sons, of Chelsea, and comprised new varieties of Amaryllis, viz., Nonpareil, a flower of medium dimensions, a crimson self; Edith Wynne, creamy-white, with a crimson flame that is traversed by lines of a darker hue. Other varieties of Amaryllis were shown, including some previously certificated. Azalea obtusa nana, a Japan species with small white flowers; Pieris japonica, numbers of small plants of which were loaded with racemes of white bells.

G. F. Wilson, Esq., Wisley, exhibited various hybrid Hellebores, large in size of flower, and high in colour; also Primula denticulata blooms.

Mr. B. S. Williams made a display of interest with a finely flowered plant of greenhouse Rhododendron Veitchianum, Tillandsia Lindeni vera, carrying one spike of flower; Phalænopsis Stuartiana nobilis, a flower somewhat superior in size to the type; the graceful Pandanus elegantissimus, a dark crimson-spathed Anthurium named sanguineum, several varieties of Sarracenias in flower, a very fine Clivia aurantiaca, with a large well filled truss of regularly formed flowers; Vanda cristata, a small piece, the intense dark lake of the lip standing out in marked contrast with the greenish-white petals and sepals; another plant not often seen was Ochna multiflora, fairly flowered.

A high-coloured Cyclamen persicum was sent by Mr. J. Odell, Goulds Green, Hillingdon.

One of the features of the meeting was contributed by a group of mixed Ferns, greenhouse and stove, shown by Mr. H. B. May, Dyson's Lane, Upper Edmonton, and to which a Bronze Banksian Medal was awarded. The species consisted mainly of Davallias, Mariesi formosa, bullata, dissecta, and the fine pale rhizomed Griffithiana, many tasselled forms of Pteris serrulata; others were Adiantums, Gymnogrammas, &c.

Violet Victoria, apparently an improved form of the Double Russian, was shown by Mr. Chambers, Westlake Nursery, Spring Grove. It is large-flowered, very double, long-stalked, and free.

Pelargonium Miss Measures, a good truss of pure white blooms, was exhibited by R. J. Measures, Esq., Cambridge Lodge, Camberwell.

A group of double-flowered Cinerarias, of a cobalt-blue colour, were sent by Mr. Pratt, gr. to the Marquis of Bath, Longleat.

Messrs. H. Lane & Son, nurseries, Great Berkhamstead, had a large group of Azalea mollis, full of glowing colours: a Silver Banksian Medal was awarded.

Mr. T. Ware's contribution consisted of Narcissi in large numbers, Chionodoxa Luciliæ, Anemones, Primula rosea, Trilliums, Lachenalias, the curious Korolkowia Sewerzowi, &c.; a Silver Banksian Medal was bestowed. Messrs. Collins Bros. & Gabriel received a similar award for a bank consisting chiefly of the same kinds of flowers, as did also Messrs. P. Barr & Son.

From the Royal Gardens, Kew, were sent numbers of New Holland and other plants, a Silver Banksian medal being awarded; Grevillea ericifolia, a bright cerise-coloured flower with a stigma of deeper hue reaching beyond the rest of the flower; G. pulchella with slender spikes of minute flowers, and deeply divided foliage; G. rosmarinifolia, several species of Eupatorium, viz., E. asianthinum, E. panamense, and E. atrorubens, the last-named being the most distinct, the habit being more loose than that of the others, and the branches and flower-stalks, instead of being smooth, are densely covered with soft brown hairs. Goodia latifolia is a bright yellow leguminose flower; Acacia linearis was a profusely flowered plant, very showy; Agapetes buxifolia has scarlet tubular pendulous flowers, and is a showy shrub; a red-flowered variety of Rhododendron argenteum was shown; Kennedya nigricans, which is an almost black flower, only the keel being yellowish-white; Pentapterygium rugosum has closed, five-angled, pendulous flowers, of a greenish-white, that are marked transversely with zigzag lines of dull crimson; the foliage serrate lanceolate. A few species of Primula were likewise shown in the Kew collection.

Mr. J. Douglas, gr., Great Gearies, Ilford, exhibited show Auriculas, two of which obtained Certificates, viz., Abbé Lizst, a regular green-edged flower, with a narrow band of brownish-purple around the paste; and Sir William Hewett, a dark velvety-purple self. Other known sorts were shown with the above.

Mr. Ross, gr. to Sir G. Macleay, Pendell Court, received the award of the Bronze Banksian Medal for Maxillaria acutipetala, a large-sized plant, well flowered; Hardenbergia monophylla, Eurybia argophylla, Salvia rutilans, S. boliviensis, and S. gesneriflora; also Fuchsia arborea, a loose large raceme of small mauve-coloured flowers; the white-flowered Jasmine-like Eranthemum eboracenses, Paulownia imperialis in bloom, Dendrobium fimbriatum occulatum superbum, and Streptocarpus polyanthus. Some flowers of an excellent strain of Cinerarias were shown by Messrs. Vilmorin, Andrieux & Co., Paris.

Messrs. Gordon & Son, nurserymen, Edinburgh, exhibited Cineraria Alexander Warwick, in which the florets were slightly convoluted from about half their length to the base, thus showing the under side in the manner of Gaillardia Lorenziana. The flower is distinct from anything else, and is not wanting in a certain elegance, which would, of course, vary with the colour. From the same firm was sent a tasselled variety of Adiantum cuneatum.

First-class Certificates.

To Messrs. W. Paul & Son, for Rose Puritan.

To Messrs. Gordon & Sons, for Cineraria Alexander Warwick.

To Messrs. Gordon & Sons, for Adiantum cuneatum, Gordon's tasselled.

To Messrs. P. Barr & Son, for Narcissus cyclamineus.

To Mr. Chambers, for Violet Victoria.

To Baron Schrœder, for Cattleya Trianæi Schrœderi.

To Baron Ferdinand Rothschild, for the same.

To Mr. F. Wigan, for the same.

To Mr. H. Bennett, for Polyantha Rose, Golden Fairy.

To Mr. H. Bennett, for Polyantha minutifolia alba.

To Messrs. J. Veitch & Sons, for Amaryllis Edith Wynne.

To Messrs. J. Veitch & Sons, for Amaryllis Nonpareil.

To Messrs. J. Veitch & Sons, for Cypripedium leucorrhodum.

To Mr. W. Pratt, for double Cinerarias.

To Mr. W. Thompson, for Odontoglossum Thompson's variety.

To Mr. J. Douglas, for show Auricula Abbé Liszt.

To M. J. Douglas, for show Auricula Sir W. Hewett.

To Mr. J. Odell, for Cyclamen Queen of the Crimsons.

Fruit Committee.

Present: T. Francis Rivers, Esq., in the chair; and Messrs. J. Lee, J. Fitt, G. Norman, J. Woodbridge, G. T. Miles, P. Crowley, J. Burnett, W. Warren, W. Paul, R. D. Blackmore, T. B. Heywood, and J. Willard.

The only items on which to adjudicate were some early Cabbages—the Howick Stone, from Mr. Inglis, gr. at Howick Hall, Alnwick; this is an early kind, and is to be tried at Chiswick; and a dish of Apples from Mr. A. Barker, gr. at Hindlip Hall, Malvern.

LAW NOTES.

DISPUTED RATES.

At Greenwich Police Court on Wednesday, 6th inst., before Mr. Montagu Williams, the case of the Overseers of Lewisham *v.* Henry James Cobb, of Forest Hill, was heard.

This was an application by the overseers for the payment of £2 11*s.*, rates in respect of his cottage and nursery grounds, Derby Villas, Forest Hill.

Mr. Cowell, 15, Wallbrook, appeared for Mr. Cobb, and contended that after the decision of Purser *v.* The Worthing Local Board (see *Gardeners' Chronicle*, March 26, 1887, p. 422), Mr. Cobb could only be assessed in respect of the nursery grounds at one-fourth only, but as regards the cottage occupied by him at the full value. This was opposed by Mr. Chitty, the collector, on the grounds that there was one assessment only.

Mr. Montagu Williams, after considering that there should be separate assessments for the land and cottage, and having referred to the Inhabited House Duty Act, 1011, adjourned the case to allow the parties to come to terms.

The case was resumed on Wednesday last, April 13, when it was contended on behalf of Mr. Cobb that under section 211 of the Public Health Act he was entitled to be rated at only one-fourth of the assessment for his nursery grounds, but it was objected that the Public Health Act did not apply to the metropolitan district except where specially provided, and that an objection which was raised to the mode of assessment would be outside his Worship's jurisdiction.

Mr. Montagu Williams did not consider his Court was the place in which to decide the question raised by Mr. Cobb, and made an order for payment of the rates, remarking that the case at Worthing, to which reference was made, did not appear to be exactly like the present one, as he believed there was no dwelling-house on the property in that instance. It was intimated that there would probably be an appeal against his Worship's decision.

THE WEATHER.

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING APRIL 9. (AVERAGE OF THIRTY-THREE YEARS.)

April 17	48°.4	April 21	49°.0
„ 18	48°.6	„ 22	49°.2
„ 19	48°.7	„ 23	49°.3
„ 20	48°.8	Mean for the week ...	49°.0

THE PAST WEEK.

The following summary record of the weather for the week ending April 11, is furnished from the Meteorological Office:—

"The *weather* has been generally fair and dry, but very cold for the time of year. Towards the end of the period, when the sky was nearly cloudless, the days became warmer, but the nights continued cold, and in many places frosty.

"The *temperature* has been below the mean in all districts, the deficit ranging from 4° in nearly all the English districts to 5° in 'Ireland, S.,' and 6° in 'Ireland, N., The highest of the maxima, which were generally recorded on the 11th, varied from 56° in 'England, N.E.' to 63° in 'Ireland, N.,' and 65° in 'Scotland, E.' On most days the maxima were very considerably lower than these readings, in many instances being below 50°, and in some cases below 45°. The lowest of the minima, which were registered on different dates in the various districts, ranged from 23° in the east and north of Scotland to 33° in 'England, S.,' and 37° in the 'Channel Islands.'

"The *rainfall* has been very slight, and much less than the mean in all districts.

"*Bright sunshine* shows a considerable increase on that reported last week, the percentages of the possible amount of duration varying from 35 in 'England, E.,' to 62 in 'England, S.W.,' and 66 in Ireland, S.'

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 42° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Above or below the Mean for the week ending April 11.	Accumulated. Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 4, 1887.	Below 42° difference from Mean since Jan. 4, 1887.
Principal Wheat-producing Districts.		Day-deg.	Day-deg.	Day-deg.	Day-deg.
0. Scotland, N. ...	4 below	14	42	+ 33	+ 5
1. Scotland, E. ...	4 below	18	39	+ 30	+ 8
2. England, N.E. ...	4 below	11	24	— 2	+ 57
3. England, E. ...	5 below	15	23	— 82	+ 143
4. Midland Cos. ...	4 below	22	30	— 59	+ 130
5. England, S. ...	4 below	29	15	— 69	+ 127
Principal Grazing, &c., Districts.					
6. Scotland, W. ...	4 below	21	37	— 10	+ 28
7. England, N.W. ...	5 below	20	32	— 42	+ 99
8. England, S.W. ...	4 below	32	17	— 74	+ 147
9. Ireland, N. ...	6 below	19	36	+ 8	+ 13
10. Ireland, S. ...	5 below	22	31	— 28	+ 71
— Channel Islands	4 below	24	4	— 122	+ 76

Districts.	Rainfall. More or less than the Mean for the Week.	No. of Rainy Days since Jan. 4, 1887.	Total Fall since Jan. 4, 1887.	Bright Sunshine. Percentage of possible duration for the Week.	Percentage of possible Duration since Jan. 4, 1887.
Principal Wheat-producing Districts.	Tenths of Inch.		Ins.		
0. Scotland, N. ...	4 less	61	12.2	43	24
1. Scotland, E. ...	4 less	45	5.5	44	33
2. England, N.E. ...	4 less	41	3.9	40	31
3. England, E. ...	4 less	34	3.7	35	34
4. Midland Cos. ...	4 less	36	4.2	41	28
5. England, S. ...	2 less	35	4.4	41	29
Principal Grazing, &c., Districts.					
6. Scotland, W. ...	5 less	48	9.8	58	44
7. England, N.W. ...	4 less	39	6.0	56	31
8. England, S.W. ...	6 less	39	5.5	62	38
9. Ireland, N. ...	5 less	48	7.3	47	29
10. Ireland, S. ...	6 less	41	7.8	66	36
— Channel Islands	3 less	44	4.7	57	45

ENQUIRIES.

"He that questioneth much shall learn much."—Bacon.

Label-making Machine.—Can any one inform me, through the columns of the *Gardeners' Chronicle*, where I can get a machine for making nurserymen's labels?—I mean those made of wood, which are generally bought from Germany by many nurserymen. The kind of labels I mean are of different lengths, from 3 inches to a foot. *T. Drake.*

NOTICES TO CORRESPONDENTS.

Agave: *T. T.* Probably the plant has been exposed to frost.

Books for Beginners: *S. Thomas. Orchids* (Lewis Castle), published at 171, Fleet Street, London, E.C. (*Journal of Horticulture*). *The Orchard House*, by T. Rivers.

Continental Glass: *J. K.* See our advertising columns.

Cool or Intermediate-house Orchids: *S. T.* Masdevallias of all kinds, Odontoglossum crispum varieties, O. bictonense superbum, O. blandum, O. Cervantesi, O. C. membranaceum, O. citrosmum, O. c. roseum, O. gloriosum, O. Halli, O. Krameri, O. luteopurpureum, O. Pescatorei, and many other New Grenadan species. The Miltonias, Lycastes, Maxillaria, Lælia, Gongora, Eria, Epidendrum, Pescatorea cerina and Wallisi, Pleiones, Disa grandiflora, D. uniflora; many species of Dendrobium, Cypripedium, Cattleya Lawrenceana, C. bulbosa, C. citrina, C. labiata in variety, C. marginata, C. maxima, C. Mossiæ, C. Trianæ, &c.; Chysis sp., Cœlogyne sp., Cymbidium sp., Bletia, Brassavola Digbyana, Barkeria, Anguloa, Aërides, Ada, Acineta, Phaius, Pleione, Sophronites, Tricopilia, &c., &c.

Correction.—At p. 490, col. *b*, twenty-first line from the bottom, owing to the sign "&" having been mistaken for "I," it has been made to read "ready for it. I have collected," &c., instead of "ready for it, and have collected," &c., thereby reversing the meaning of the sentence.

Cucumber Leaves: *J. L. S.* These showed signs of injury from gas-tar fumes. Remove the tar with a strong lye.

Differences between Picotees and Carnations: *S. T.* In the former the markings follow the outline of the flower, and are found chiefly at the outer margin of the petals; the petals have points or "picots" at the edge. In Carnations the markings—flakes, flames, stripes, &c.—are placed lengthwise with the petals. All selfs, or one-coloured flowers, are Carnations.

Fernery: *Amos G.* Without knowing full particulars of the house, we cannot say what has caused the injury to the plants.

Hindlip: a Correction. — Owing to an inadvertence, a wrong impression may be gathered from a statement on p. 476. Mr. Barker, the gardener, is fortunately in better health than he was at the time of our reporter's visit.

Mistleto: *J, P.* Yes. It grows in Southern Sweden and Southern Norway.

Names of Plants: *Sir C. Strickland.* Aloe echinata; Scilla bifolia flore albo.—*Erica.* Ornithogalum comosum, L.—*H. K.* Probably Cœlogyne flaccida; but it is impossible to be certain from such a bad specimen as you sent. — *G. W. D.* 1, Pteris cretica; 2, Asplenium flaccidum; 3, Nephrolepis cordifolia; 4, Pteris serrulata var. cristata; 5, P. serrulata; 6, Polypodium vulgare var. cambricum; 7, Davallia sp. (fruit needed to distinguish species); 8, Blechnum occidentale? (young and sterile).—*W. H. M.* 1, Azara microphylla; 2, next week.—*A. G.* Datura Stramonium: poison — beware. — *W. P.* 1, Sophora tetraptera, sometimes called Edwardsia grandiflora; 2, Illicium religiosum; 3, Exochorda grandiflora.—*H. W. H.* Lælia (bifrenaria) Harrisoniæ.—*E. C.* Lælia (bifrenaria) Harrisoniæ. — *G. P.* Why do you address the Publisher on such a matter? 1, Carex præcox; 2, an Epimedium—we do not recognise the species; 3, Marchantia polymorpha.

Rhubarb: *Berry.* This is a leaf-stalk, and, therefore, part of a vegetable. In no sense, technical or casual, is it a fruit.

Tomato Diseased: *C. C.* Probably the Tomato disease, but we will report later on.

Violets: *W. H.* Single form of the Russian Violet.

York Floral Fête: *M. B.* Wednesday, June 15, and two following days.

Communications Received.—E. P.—W. S.—R. P. (with thanks).—J. V. V., Brussels.—W. C. B. (probably).—R. Thompson (but see again next week).—A. D. W.—A. D.—S. H. (many thanks).—J. T. P.—F. J. T. (many thanks) — G. V., Toronto.—Dr. Phene.—J. T. B.—W. B.—H. A., Natal. —J. R. J.—F. R., Quedlinburg.—G. Layard.—J. D.—W. R. —W. E. D.—Dr. A. Wallace.

MARKETS.

COVENT GARDEN, April 14.

Business very quiet, especially in best goods. No alteration in prices. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apple, ½-sieve	1 6– 5 0	Pears, per dozen	2 0– 4 0
— Nova Scotia, brl.	8 0–12 0	Pine-apples, Eng., lb.	1 0– 1 6
Grapes, per lb.	3 0– 8 0	— St. Michael. each	1 6– 6 0
Kent Cobs, 100 lb.	60 0– ...	Strawberries, per lb.	4 0– 6 0
Lemons, per case	12 0–21 0		

VEGETABLES—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, per doz.	6 0– ...	Lettuce, Cos., Fr., each	0 6– ...
Asparagus, French, per bundle	4 0–12 0	Mushrooms, punnet	1 6– 2 0
— English, per 100	8 0– ...	Mustard and Cress, punnet	0 4– ...
Beans, Kidney, lb.	2 0– ...	Onions, per bushel	4 0– ...
Beet, red, per dozen	1 0– 2 0	Parsley, dozen bunch	8 0– ...
Carrots, per bunch	0 6– ...	Peas, per quart	6 0– ...
Cauliflowers, per dozen	3 0– ...	Potatos, per cwt.	4 0– 5 0
Celery, per bundle	1 6– 2 0	,, kidney, per cwt.	4 0– 5 0
Cucumbers, each	0 6– 1 0	Rhubarb, per bundle	0 6– ...
Endive, per dozen	1 0– 2 0	Seakale, per punnet	2 6– ...
Green Mint, bunch	1 0– ...	Shallots, per lb.	0 3– ...
Herbs, per bunch	0 4– ...	Spinach, per bushel	5 0– ...
Leeks, per bunch	0 3– ...	Sprue, bundle	1 0– ...
Lettuce, per dozen	1 6– 2 0	Tomatos, per lb.	4 0– ...
		Turnips, new, bunch	1 6– ...

POTATOS.—Markets very heavy, at the following prices:—Regents, 80*s.* to 100*s.*; Magnums, 70*s.* to 110*s.* per ton.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz.	6 0–18 0	Ficus elastica, each	1 6– 7 0
Arum Lilies, dozen	18 0–24 0	Foliage plants, various, each	2 0–10 0
Azaleas, per dozen	24 0–42 0	Fuchsias, doz.	9 0–12 0
Cinerarias, per doz.	6 0– 9 0	Genistas, per doz.	10 0–12 0
Cyclamens, dozen	12 0–24 0	Hyacinths, 12 pots	6 0– 9 0
Cyperus, per dozen	4 0–12 0	Lily-of-Val., 12 pots	12 0–24 0
Daffodils, 12 pots	9 0–10 0	Marguerite Daisy, per dozen	6 0–12 0
Dracæna terminalis, per dozen	30 0–60 0	Mignonette, doz.	6 0– 9 0
— viridis, per doz.	12 0–24 0	Myrtles, per dozen	6 0–12 0
Erica, various, per dozen	18 0–42 0	Palms, in var., each	2 6–21 0
Euonymus, in var., per dozen	6 0–18 0	Pelargoniums, scarlet, per doz.	6 0– 9 0
Evergreens, in var., per dozen	6 0–24 0	Primula sinensis, doz.	4 0– 6 0
Fairy Roses, doz.	10 0–12 0	Solanums, per dozen	9 0–12 0
Ferns, in variety, per dozen	4 0–18 0	Spiræa, per dozen	12 0–18 0
		Tulips, 12 pots	6 0– 8 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Arum Lilies, 12 blms.	3 0– 5 0	Mignonette, 12 bun.	3 0– 6 0
Azaleas, 12 sprays	0 6– 0 9	Pelargoniums, scarlet, 12 sprays	0 9– 1 0
Bouvardias, per bun.	0 6– 1 0	Primroses, 12 bun.	0 4– 0 9
Camellias, 12 blooms	1 0– 3 0	Primulas, single, 12 bunches	4 0– 6 0
Carnations, 12 blms.	1 0– 3 0	— double, 12 sprays	0 9– 1 0
Cyclamen, 12 blooms	0 4– 0 9	Roses, Tea, per doz.	2 0– 4 0
Daffodils, single, 12 bunches	1 6– 4 0	— coloured, dozen.	3 0– 6 0
— double, 12 bun.	2 0– 4 0	— red, French, doz.	1 6– 2 0
Eucharis, per dozen	4 0– 6 0	— Saffrano, Fr. doz.	1 0– 1 6
Gardenias, 12 blooms	1 6– 3 0	Tropæolums, 12 bun.	1 0– 2 0
Heliotropes, 12 spr.	0 6– 1 0	Tuberoses, 12 blms.	2 0– 4 0
Jasmine, white, bun.	0 6– 0 9	Violets, 12 bunches	0 6– 1 0
Lilies of the Valley, 12 sprays	0 6– 1 6	— Parme, French, per bunch	2 0– 3 0
Marguerites, per 12 bunches	3 0– 6 0	— Czar, Fr., bunch	1 6– 2 0

SEEDS.

LONDON: *April* 13.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., report a steady sowing demand for all the leading varieties of field seeds. Quotations generally show no alteration, but remain at the unprecedentedly low level characteristic of the present season. Meantime, stocks all round are being worked down into narrow compass, and it is also now evident that the consumptive inquiry this year will be an unusually protracted one. White Mustard is in improved request. Black Rape seed keeps firm. In bird seeds and other articles there is no change to be noted.

POTATOS.

BOROUGH AND SPITALFIELDS: *April* 12.—Moderate supplies, slow demand, and confined to best samples. Quotations:—Regents, 70*s.* to 125*s.*; Magnum Bonums, 55*s.* to 100*s.*; Champions, 45*s.* to 80*s.* per ton.

COLUMBIA (EAST LONDON): *April* 13.—Quotations:—Kent and Surrey Regents, 60*s.* to 80*s.*; do. Magnums, 60*s.* to 80*s.*; do. Champions, 60*s.* to 70*s.*; York and Lincoln Regents, 60*s.* to 80*s.*; do. Champions, 55*s.* to 70*s.*; Cambridgeshire Regents, 55*s.* to 80*s.*; do. Magnums, 55*s.* to 75*s.*; do. Champions, 55*s.* to 70*s.*; Scotch Regents, 65*s.* to 90*s.*; do. Magnums, 70*s.* to 130*s.*; do. Victorias, 80*s.* to 100*s.*; do. Champions, 55*s.* to 70*s.* per ton.

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G. C., 6, 1887.

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The undermentioned are all good established Plants, clean and healthy, and will be certain to give satisfaction. Better value cannot be obtained anywhere in the Trade.

C, Cool; I, Intermediate; S, Stove.

		Each.
I Acanthophippium striatum,	3 to 4 bulbs,	3/6, 5/-.
I Acineta Humboldti ...	... 5 to 6 ,,	5/-, 7/6.
C Ada aurantiaca	... 4 to 5 ,,	3/-, 5/.
I Aërides affine roseum ...	... 6 to 7 leaves,	3/6, 5/-, 7/6.
S ,, crassifolium ...	... 3 to 4 ,,	3/6, 5/-.
I ,, Fieldingi	... 4 to 6 ,,	5/-, 7/6.
S ,, Leonis	... 5 to 7 ,,	7/6, 10/6, 15/-.
S ,, Lobbi	... 4 to 7 ,,	3/6, 5/-.
S ,, odoratum majus ...	... 6 to 7 ,,	3/6, 5/-.
S ,, quinquevulnerum	... 4 to 5 ,,	3/6, 5/-.
S ,, Sanderianum ...	... 5 to 6 ,,	10/6.
S ,, virens Dayana ...	... 5 to 6 ,,	3/6, 5/-.
I Angræcum arcuatum ...	... 5 to 6 ,,	3/6, 5/-.
S ,, Leonis	... 4 to 5 ,,	5/-, 7/6.
S ,, Sanderianum, new	... 4 to 6 ,,	7/6, 10/6, 15/-.

		Each.
S Angræcum Scottianum	... 3 to 4 growths,	5/-, 7/6, 10/6.
I Anguloa Clowesi ...	... 2 to 3 bulbs,	5/-, 7/6.
I ,, Ruckeri	... 3 to 4 ,,	15/-, 20/-.
I Arpophyllum giganteum	... 4 to 5 ,,	5/-, 7/6.
I Brassia maculata ...	... 4 to 6 ,,	5/-, 7/6.
I ,, verrucosa	... 4 to 5 ,,	3/6, 5/-.
I Calanthe Regnieri ...	... 2 to 3 ,,	5/-, 7/6.
I ,, Veitchi	... 2 to 3 ,,	5/-, 7/6.
I ,, veratrifolia, fine growths,	2 to 4 ,,	5/-, 7/6, 10/6.
I ,, vestita	... 3 to 4 ,,	2/6, 3/6, 5/-.
I ,, vestita giganteum	... 2 to 3 ,,	5/-, 7/6.
I Cattleya amethystoglossa, very strong	... 6 to 8 ,,	7/-, 10/6, 15/-.
S ,, aurea	... 3 to 5 ,,	7/-, 10/6, 15/-.
I ,, bicolor	... 5 to 8 ,,	5/-, 7/6.

		Each.
I Cattleya chocoensis ...	... 5 to 6 bulbs,	7/6, 10/6.
C ,, citrina	...14 to 16 ,,	3/6, 5/-.
I ,, crispa	... 5 to 6 ,,	5/-, 7/6, 10/6.
S ,, Dowiana	... 4 to 5 ,,	10/6, 15/-.
I ,, Eldorado	... 6 to 7 ,,	5/-, 7/6.
I ,, Gaskeliana ...	... 6 to 7 ,,	2/6, 3/6, 5/-, 7/6.
I ,, gigas	... 5 to 7 ,,	7/6, 10/6.
I ,, ,, Sanderiana ...	... 5 to 7 ,,	10/-, 15-.
I ,, Harrisoniana ...	... 6 to 7 ,,	5/-, 7/6.
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Ground BONES, FISH GUANO, POTASH, CRUSHED HOOFS and HORNS, and all other MANURES, at lowest prices.

GARDEN REQUISITES.
COCOA-NUT FIBRE REFUSE.
4d. per bushel; 100 for 25s.; truck (loose, about 2 tons), 40s.; 4-bushel bags, 4d. each.

LIGHT BROWN FIBROUS PEAT, 5s. 6d. per sack; 5 sacks, 25s.; sacks, 4d. each
BLACK FIBROUS PEAT, 5s. per sack, 5 sacks, 22s.; sacks, 4d. each.
COARSE SILVER SAND, 1s. 9d. per bushel; 15s. per half ton; 26s. per ton, in 2-bushel bags, 4d. each.
YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1s. per bushel
SPHAGNUM MOSS, 8s. 6d. per sack.
MANURES, GARDEN STICKS, VIRGIN CORK, TOBACCO CLOTH, RUSSIA MATS, &c. Write for Price LIST.—**H. G. SMYTH,** F.R.H.S., 21, Goldsmith's Street, Drury Lane (lately called 17A, Coal Yard), W.C.

To Gardeners.
PROCTOR AND RYLAND'S
well-known
Special Garden Manures.
Pure Ground Bone for Vines, Potting, &c.
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NATIVE GUANO.—Price £3 10s. per ton in bags; lots under 10 cwt., 4s. per cwt. Sample bag (1 cwt.) sent, carriage paid, to any station in England on receipt of P.O. for 5s.

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Especially adapted for cultivation of
FLOWERS, FRUITS, AND VEGETABLES.
Is not a Chemical production, but a purely natural Guano.
Useful everywhere alike, in Flower Garden, Conservatory and Greenhouse.
Packets, 1 lb., 6d.; 2 lb., 1s.; *postage extra.* Bags, 7 lb., 2s. 6d.; 14 lb., 4s. 6d.; 28 lb., 7s. 6d.; 56 lb., 12s. 6d.; 112 lb., 20s., *carriage paid. Of the principal Nurserymen, Seedsmen, Florists and Chemists, or direct from*
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W. WOOD AND SON are now cutting from THE NEW ESTATE (the only estate celebrated for its special quality of ORCHID PEAT).
Send for Sample. Special Quotations.
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To Grow fine Vegetables and Flowers, Gardeners should use
SULPHATE OF AMMONIA.
One trial will prove the great value of this Manure, and ensure its constant use hereafter. It can be applied either separately or mixed with ordinary stable or farmyard manure. Rose Trees and Garden Plants are much benefited by being watered with a weak solution once or twice a week. Instructions on application, post free. Price free on rail at Sheffield, 12s. 6d. per cwt., or 7s. per 56 lb. P. O. Orders payable to The MANAGER, Sheffield Gas Company, Sheffield.

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The Best and Cheapest Insect Destroyer.
Goes five times as far as any other preparation. Awarded Certificates of Merit at the Principal Shows.

PRICES:—8 oz. bottle with graduated measure, 1s. 6d.; 20 oz. ditto, 3s. 6d, (per Post, 4d. extra); per gallon, 10s. 6d. Special Quotations for large quantities.

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JOHN KNIGHT, Upper Bourne, Farnham, having a very large quantity of beautiful Red Binding Farnham GRAVEL for Carriage Drives and Garden Paths, will sell the same at a very reasonable price, as the ground must be cleared. Apply as above.

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Every grain fertilizes because the Guano is perfectly pure. It is most economical, one part of Manure to 100 parts of soil being ample for garden use.

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Dr. Voelcker's analysis guaranteed. FISH-POTASH contains Ammonia, Phosphates and Potash in large proportions, which are the principal elements of fertilization.

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2-lb. Tins, 1s.; in Bags, 7 lbs., 2s.; 14 lbs., 4s.; 28 lbs., 6s. 6d.; 56 lbs., 10s. 6d.: 1 cwt., 16s.; 2 cwt., 30s., carriage paid. Special terms for larger quantities.

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WEED-KILLER, for destroying Weeds on Carriage Drives, Garden Walks, Yards, &c. Prices:—Per gallon, 2*s.*, tins included; 5 gallons, 1*s.* 6*d.* per gallon. Special quotations for larger quantities.

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The AGRI-HORTICULTURAL CHEMICAL COMPANY, St. Stephen's Street, Tonbridge, Kent. Sold by Seedsmen and Florists. Address, H. A. GRINDROD, Tonbridge.

GISHURST COMPOUND, used by leading Gardeners since 1859 against Red Spider, Mildew, Thrips, Green Fly, and other Blight. 1 to 2 ounces to the gallon of soft water; 4 to 16 ounces as winter dressing for Vines and Orchard-house Trees; and in lather from the cake against American Blight. Has outlived many preparations intended to supersede it. Boxes, 1*s.*, 3*s.*, and 10*s.* 6*d.*

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PROTECT YOUR PLANTS

"FRIGI DOMO"

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CONSERVATORY BLINDS made to order,

of Plain or Striped Material.

NEW CANVAS SHADING.

It is perfectly rot-proof, keeps sound under conditions where other fabrics have shown fungoid growth and incipient decay.

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GARDEN SHADINGS, NETTING, TIFFANY, SCRIM, HESSIAN,

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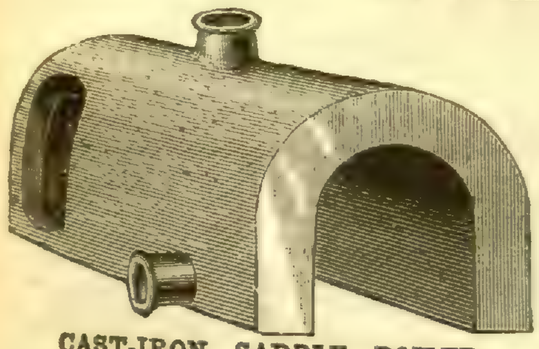
Have the Largest and most Complete Stock in the Trade.



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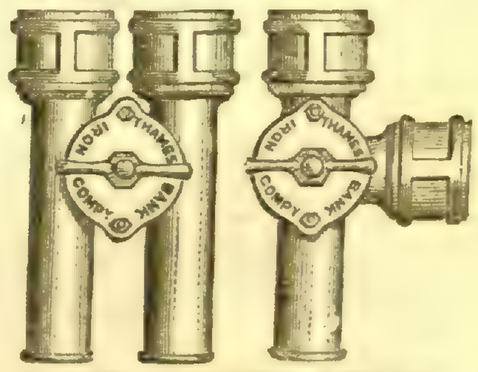

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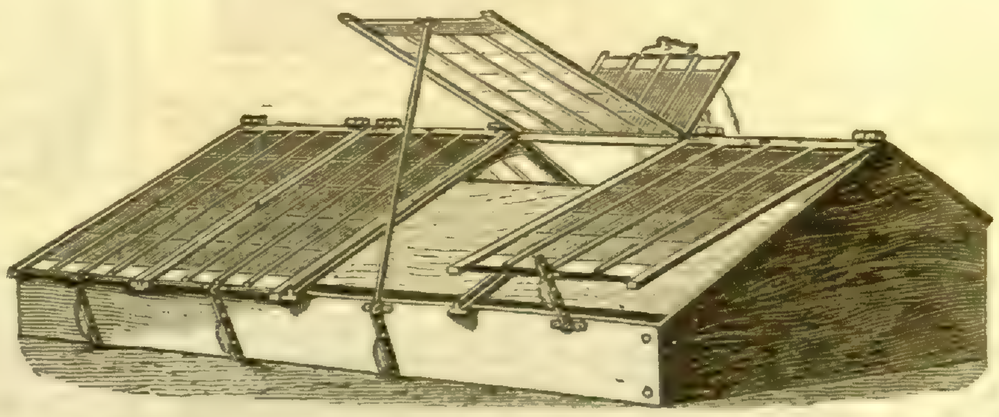
Boulton & Paul's PLANT FRAMES are always in stock, ready to be sent away on receipt of order. They are made of best, sound, red deal, sawn from the best trees in the forest to our special requirements, and seasoned in a proper manner. The FRAMES are of 1½ in. boards, 13 in. high in front, 24 in. high at back, and 32 in. at the ridge, bolted at the corners, and easily taken to pieces if required. The LIGHTS are 2 inches thick, arranged to turn over, front or back, and provided with set-opes for ventilating, and the whole painted four coats. The Glass is ENGLISH, 21-oz. weight. PACKED and sent, CARRIAGE PAID, to any station in England and Wales, to Dublin, Belfast, Londonderry, Cork, Glasgow, and stations equivalent. Cases are allowed in full when returned.



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Including Use of Packing Cases.

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2-LIGHT FRAME ...	8 feet	by 6 feet	£4 12 6
3 ,, ,, ...	12 feet	by 6 feet	6 5 0
4 ,, ,, ...	16 feet	by 6 feet	8 0 0
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GARDEN NETS.

Warranted to Protect Bloom from Frost, Winds, Hail, and Fruit from Birds, Wasps, &c.

Patterns and Prices Free per Post.

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THE ABOVE and many other PATTERNS are made in materials of great durability. The plainer sorts are specially suited for KITCHEN GARDENS, as they harbour no Slugs or Insects, take up little room, and once put down incur no further labour or expense, as do "grown" Edgings, consequently being much cheaper,

GARDEN VASES, FOUNTAINS, &c., in Artificial Stone, very durable and of superior finish, and in great variety of design.

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Agents for LOOKER'S PATENT "ACME" FRAMES, PLANT COVERS, and PROPAGATING BOXES: also for FOXLEY'S PATENT BEADED GARDEN WALL BRICKS.

Illustrated Price LISTS Free by Post. The Trade supplied.

ORNAMENTAL PAVING TILES, for Conservatories, Halls, Corridors, Balconies, &c., from 3s. per square yard upwards. Pattern Sheet of Plain or more elaborate Design, with Prices, sent for selection.

WHITE GLAZED TILES, for Lining Walls of Dairies, Larders, Kitchen Ranges, Baths, &c. Grooved and other Stable Paving of great durability, Wall Copings, Drain Pipes and Tiles of all kinds. Roofing Tiles in great variety, Slates, Cement, &c.

F. ROSHER AND CO., Brick and Tile Merchants.
See Addresses above.

SILVER SAND, fine or coarse grain as desired. Price by post, per Ton or Truckload, on Wharf in London, or delivered direct from Pits to any Railway Station. Samples of Sand free by post.

FLINTS and BRICK BURRS for Rockeries or Ferneries.

KENT PEATS or LOAM supplied at lowest rates in any quantities.

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N.B.—Orders promptly executed by Rail or to Wharves.
A liberal Discount to the Trade.

DOULTON & WATTS,

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VASES, PEDESTALS, FOUNTAINS, GARDEN EDGINGS, &c., in

IMPERISHABLE TERRA COTTA.

Plain and Ornamental Pavings.

Tiles for Lining Walls of Conservatories,
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Table Decorations and Vases, Fountains, &c., for the Conservatory, in
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Show Rooms, Albert Embankment, S.E.

HORTICULTURAL GLASS.

A large quantity of all descriptions and sizes in stock, at the lowest possible prices.

NICHOLLS & CLARKE,
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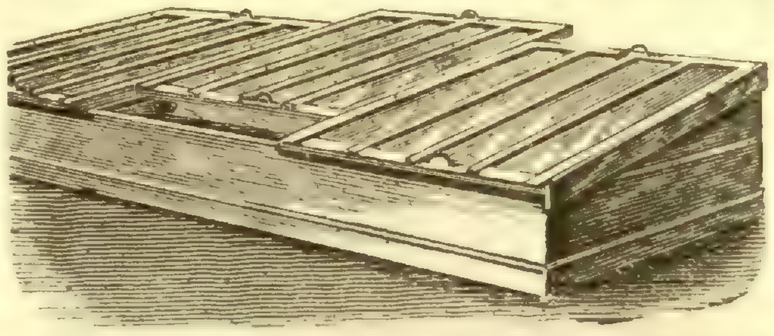
WRIGHT & HOLMES.



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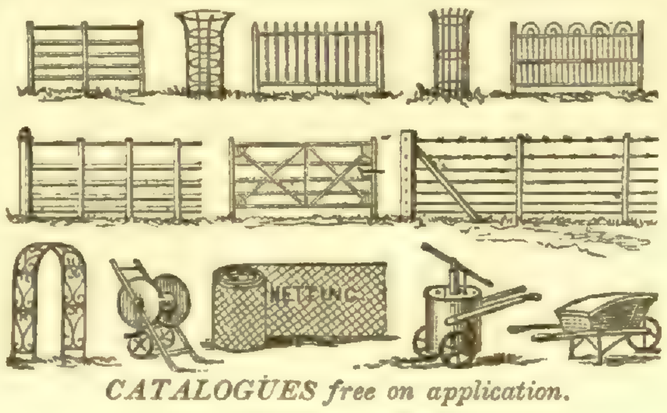
Lights two inches thick, glazed with 21-oz. English glass in our patent bars with copper screws. The Frames are of superior make, sides and ends being bolted to the iron legs, painted four coats, well finished. Carriage paid to any railway station in England or Wales, at the following low prices for cash:—

8 feet by 6 feet ...	£3	4	0	20 feet by 6 feet ...	£7	5	0
12 feet by 6 feet ...	4	11	6	24 feet by 6 feet ...	8	12	6
16 feet by 6 feet ...	6	0	0	28 feet by 6 feet ...	10	0	0

Packing cases charged 4s. each; if returned carriage paid, full amount allowed. Estimates given for all kinds of Greenhouses on application to

WRIGHT & HOLMES,
Horticultural Builders and Engineers,
MOSELEY ROAD, BIRMINGHAM.



CATALOGUES free on application.

BAYLISS, JONES & BAYLISS,

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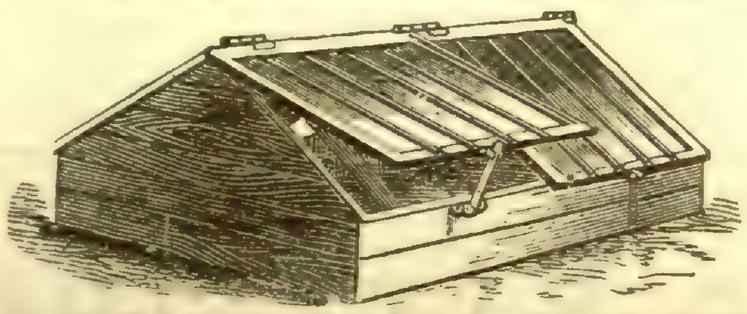
London Office: 139 and 141, Cannon Street, E.C.



PORTABLE PLANT FRAMES.

The above are without exception the most useful kind of Frame for Plant Growing, and every one with a garden should possess one. The sashes turn right over one on to the other, and the boxes are put together with wedges, and can be taken apart in a few minutes. Sizes and prices, carriage paid to any station in England, ready glazed and painted:—

6 feet long, 4 feet wide, packing cases free	£2	15	0
12 feet long, 4 feet wide, " " "	4	15	0
6 feet long, 5 feet wide, " " "	3	15	0
12 feet long, 5 feet wide, " " "	6	10	0

The glass is nailed and puttied in.

R. HALLIDAY & CO.,
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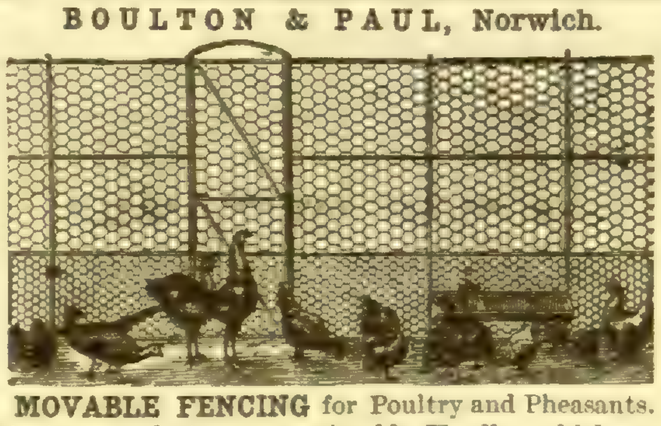
ROYAL HORTICULTURAL WORKS, MIDDLETON, MANCHESTER.
London Agent: Mr. H. SKELTON, Seedsman, &c., 2, Holloway Road, N.

BOULTON & PAUL, Norwich.



MOVABLE FENCING for Poultry and Pheasants.

This is a good strong, serviceable Hurdle, which we can thoroughly recommend; the lighter Hurdle is offered to meet competition. REDUCED CASH PRICES:—

6 feet high, 6 feet wide. Carriage paid on orders above £2.
Strong Hurdle ... 5s. each. | Light Hurdle ... 3s. 6d. each.
Doorways, 7s. 6d. each; Corner Pillars, 1s. 6d. each.
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FOR SALE, a good Second-hand Flued SADDLE BOILER (Cannell's Patent); capable of heating 500 feet of 4-inch piping.
Apply to the GARDENER, The Deodars, Meopham, Kent.

Fourteen Silver Medals. AWARDED TO

JOHN MATTHEWS, The Royal Pottery, Weston-super-Mare, Manufacturer of TERRA COTTA VASES, FOUNTAINS, ITALIAN BASKETS, BORDER TILES, GARDEN POTS of superior quality, from 1 to 30 inches diameter, stand the frosts, and seldom turn green; ORCHID, FERN, SEED, and STRIKING-PANS, RHUBARB and SEA-KALE POTS, &c.
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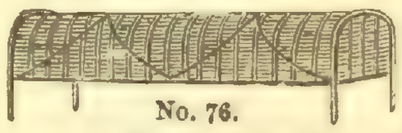
and GARDEN REQUISITES.



No. 76.

No. 80.

3 feet long.
Galvanised after made.
Either pattern.
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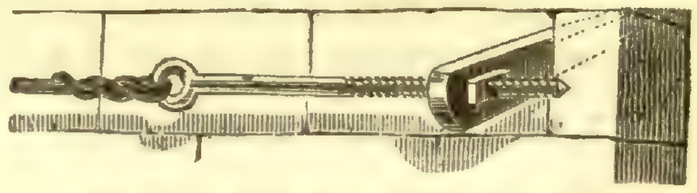

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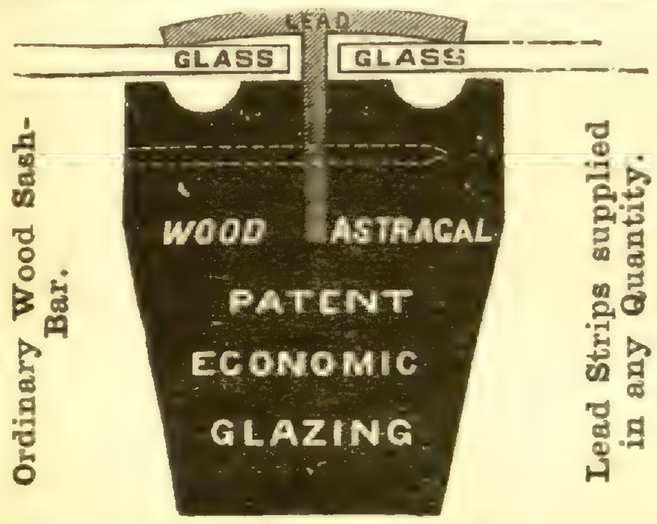

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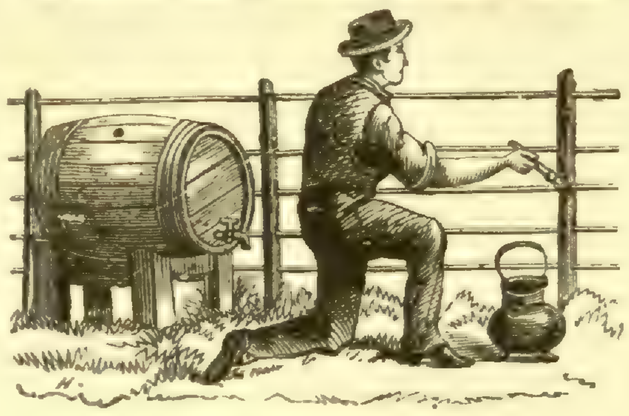

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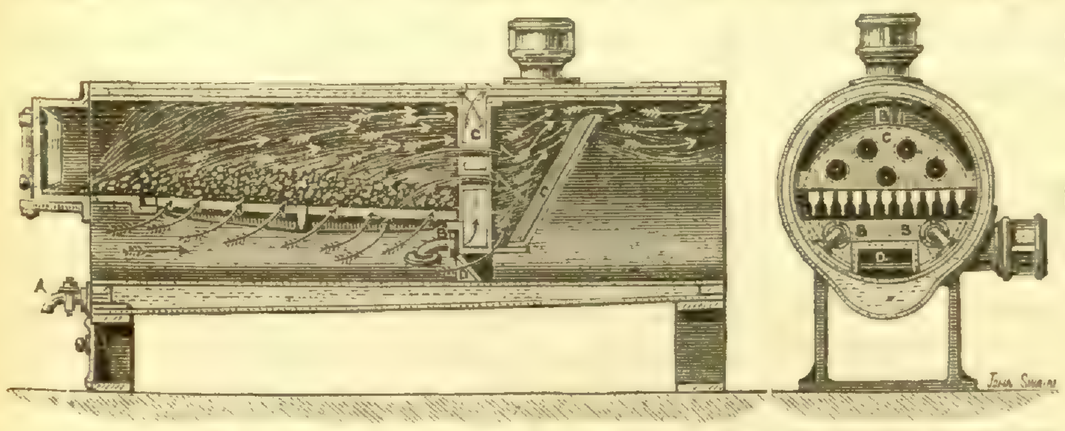

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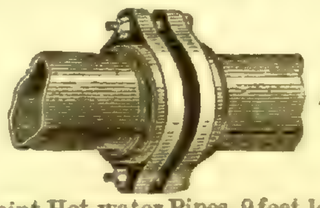

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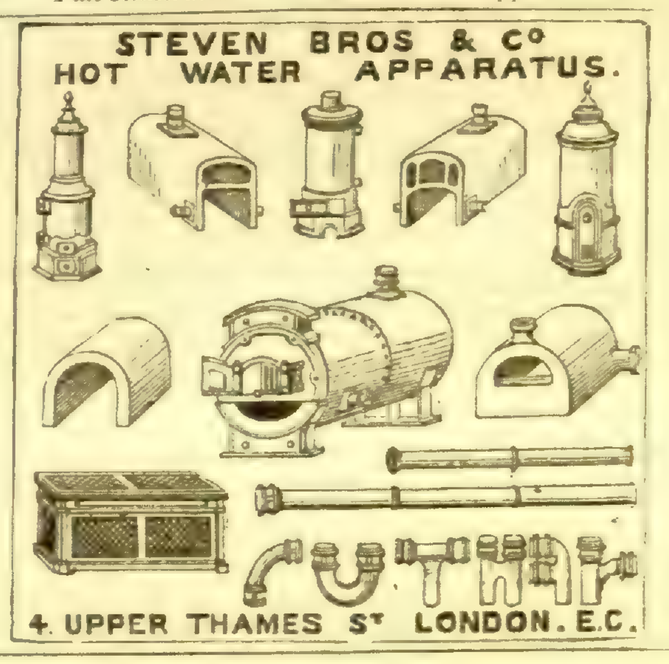

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GARDENER (Under), or JOURNEYMAN, in a Gentleman's establishment.—Age 22, single; well up in Stove, Greenhouse and Outdoor Work. Two years' good character. Eight years' experience.—J. G., 17, Model Cottages, Mortlake, Surrey.

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JOURNEYMAN (First), in a good establishment.—Age 23; eight years' experience in good places. Highly recommended.—J. BAILEY, Black House Farm, Thorpe, Chertsey, Surrey.

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JOURNEYMAN, in the Houses, or Inside and Out.—Age 21; six years' experience.—Good references.—A. J., 1, Brownlow Road, Church End, Finchley, N.

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To cut 6 in., can be worked by a Lady ...	£1 15 0
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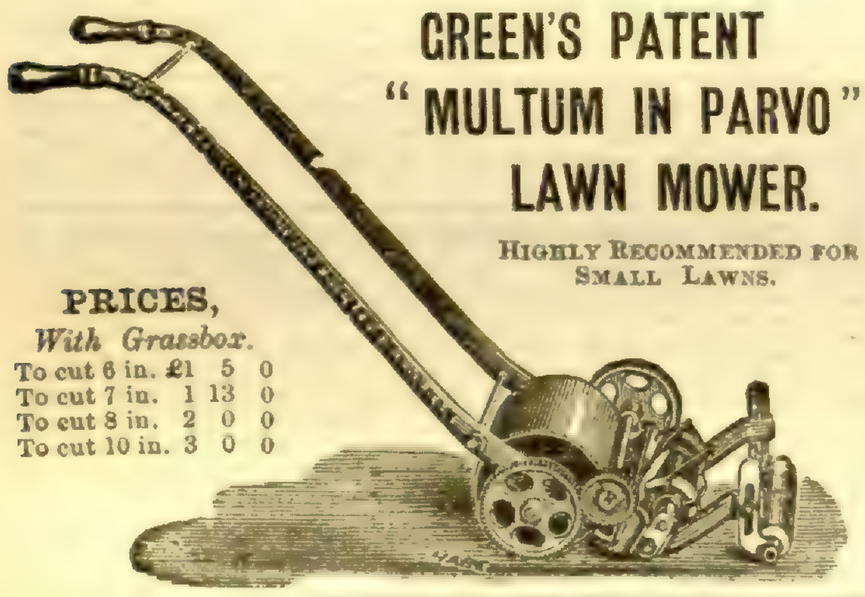

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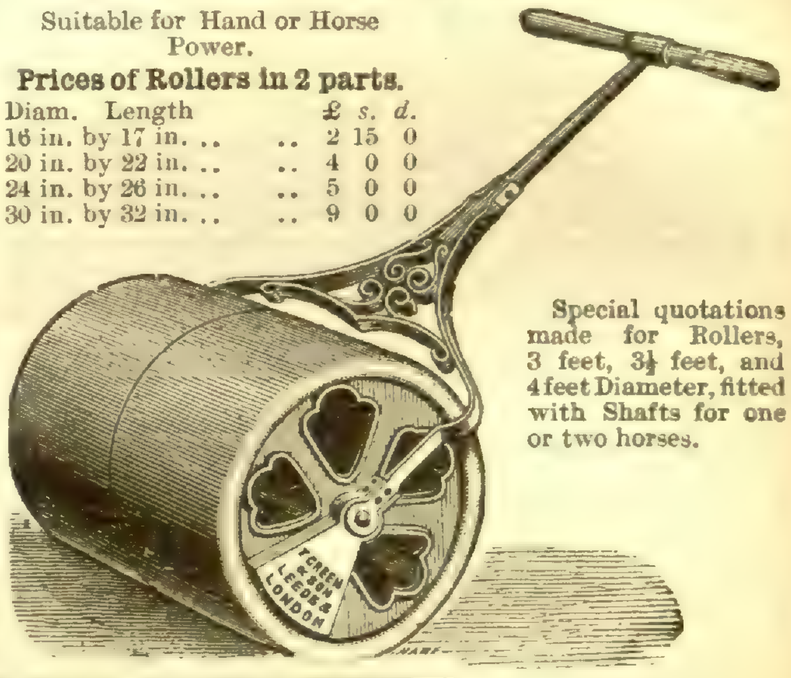

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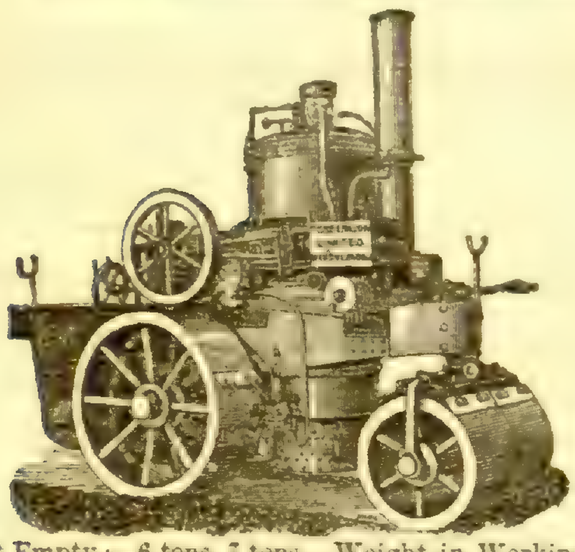

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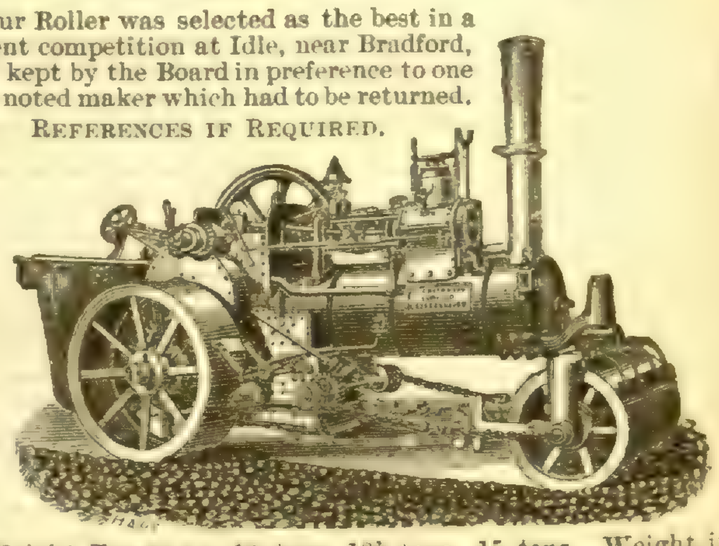

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CONTENTS.

Adiantums, a decade of new 547
Agaricus gambosus ... 544
Agave Morrisii 543
Anemone, the wood ... 543
Botanical Magazine ... 550
British Guiana, primæval forests in 541
Camellias at Chiswick House 546
"Chambre Syndicale" of Ghent 551
Cinerarias at Farnham Royal 549
Cremona violins 550
Cultural memoranda ... 552
Epidendrum Stamfordianum Wallacei 543
Florists' flowers 546
Gardening appointments 562
Gardeners' Royal Benevolent Institution... ... 553
Glasgow Botanic Garden 550
Grapes in the open air ... 554
Hardy fruit garden ... 552
Kew *Bulletin* 548
Kitchen garden 546
Lindley Library 548
Mount Bellenden-Ker ... 524
Narcissus Little Nell ... 552
Obituary :—
Bailey, Mr. T. 552
Carr, Mr. R. 556
Orchid Album 550
Orchid-houses 553
,, notes 545
Panax fruticosum var. multifidum 544
Plants and their culture 553
Rhododendron Campbelliæ 554
,, Lochæ 543
Roses planted out, treament of 554
Scotch Fir plantations, effects of snow on ... 550
Shanking in Grapes ... 548
Societies :—
Edinburgh Botanical ... 555
Royal Botanic 555
Royal Horticultural ... 554
Spiræas 551
Vegetable, a new 550
Watering fruit trees against walls 553
Weather, the 557

ILLUSTRATIONS.

Agaricus gambosus 545
,, ,, section 544
Agave Morrisii 549
Bailey, the late Mr. T. 552
Narcissus Little Nell 553
Wood Anemone 542

NOTICE TO SUBSCRIBERS.—All Numbers of the "Gardeners' Chronicle" from January 1 of this year are still to be had.

ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W.

NOTICE!—COMMITTEE MEETINGS: Scientific, at 1 P.M., in the Lindley Library; Fruit and Floral, at 11 A.M., and Narcissus at 12 noon, in the Conservatory, on TUESDAY next, April 26. National Auricula and Primula Society's Show.

Admission free to Fellows at 12 o'Clock; and to the Public at 1 o'Clock, upon payment of 2*s*. 6*d*.

N.B.—Entrances, N.E. Orchard House, Exhibition Road; and Exhibitors' Entrance, east side of Royal Albert Hall.

ROYAL BOTANICAL and HORTICULTURAL SOCIETY of MANCHESTER.

FLORAL MEETING in the Town Hall, Manchester, on the 20th inst.

The ANNUAL WHITSUNTIDE HORTICULTURAL EXHIBITION will open at Old Trafford on the 27th MAY.

Royal Botanic Gardens, Old Trafford. BRUCE FINDLAY.

SCOTTISH PRIMULA AND AURICULA SOCIETY.

FIRST EXHIBITION, MAY 4, in Calton Convening Rooms, Waterloo Place, Edinburgh. Schedules may be had from

WM. STRATON, Hon. Sec. and Treasurer.
Annfield, Broughty Ferry.

RICHMOND (Surrey) HORTICULTURAL SOCIETY.

The THIRTEENTH ANNUAL SUMMER EXHIBITION will be held in the Old Deer Park, on WEDNESDAY, June 29. The Committee beg to inform Exhibitors that there are 68 open Classes, and in addition to large Money Prizes, eight Silver Jubilee Medals, value £2 each, will be given for the most meritorious Exhibits in each division.

The SURREY BEEKEEPERS' ASSOCIATION will hold a SHOW of BEES, APPLIANCES, and HONEY on this occasion. Practical Illustrations and Lectures will be given at intervals.

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Spring, 1887.

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Natal, South Africa.
BULBS, TUBERS and TERRESTRIAL ORCHIDS.

R. W. ADLAM, Maritzburg, Natal, has just published his CATALOGUE of the above; it may be had post-free on application to him, or to
Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, Crutched Friars, London, E.C.

Rhododendrons.

JOHN WATERER AND SONS, Bagshot, Surrey, are the Great Exhibitors of Hardy Scarlet and White RHODODENDRONS.
Their CATALOGUE is ready, and may be had on application.

Bedding Begonias.

JOHN LAING AND CO. have a grand stock of Tubers, carefully and specially selected to colour for bedding from our outdoor beds last summer, three shades of crimson, orange-scarlet, magenta, pink, rose, scarlet, white, &c. Per dozen, post-free, 6*s*. Cultural Directions in CATALOGUE.
JOHN LAING AND CO., The Nurseries, Forest Hill, S.E.

New Zonal Pelargonium,

QUEEN OF WHITES IMPROVED.—It is without doubt the best White Zonal ever offered. It has been in flower all the winter at our Nurseries, and will be ready to send out May 1. £1 per dozen, strong plants. Certificate Royal Botanic Society, May 19, 1886.
PHILIP LADDS, The Nurseries, Bexley Heath, and Swanley.

Fruiting Vines.

PAUL AND SON have still a fine stock of Hamburgh and Muscat VINES of their usual good quality. The "Old" Nurseries, Cheshunt, N.

GRAPES THIS YEAR.—Extra strong Canes. Special prices and names on application.
JAMES DICKSON & SONS, "Newton" Nurseries, Chester.

VICTORIA PLUM GRAFTS. — A few thousands to spare. Cut off months ago.
WILL TAYLER, Osborn Nursery, Hampton, Middlesex.

FOR SALE, good strong CAULIFLOWER PLANTS, 1*s*. 6*d*. per 100; 10*s*. per 1000; package free for cash with order.
S. BIDE, Alma Nursery, Farnham, Surrey.

SEAKALE.—Forcing, 40*s*. per 1000; Planting, 25*s*. per 1000. New STRAWBERRIES, Captain King, earliest, true, 2*s*. 6*d*. per 100. Cash with all orders.
R. LOCKE, Wrotham, Kent.

"Imperator" Potato.

PETER LAWSON AND SON (Limited), Edinburgh, are prepared to Book Orders for the "IMPERATOR" POTATO, as sent out by them, also other leading kinds. Prices upon application.

COOKING POTATOS.—A few Tons of choice quality Potatos for sale. Splendid sample.
BRINKWORTH AND SONS, Reading.

ORCHID PEAT, selected turves, 6*s*. per sack, six sacks, 33*s*; ditto, prepared ready for use, 10*s*. 6*d*. per sack. SPHAGNUM MOSS, fresh, 6*s*. per sack of 3 bushels. Also a good light brown FIBROUS PEAT (not sandy), f.o.r. Ringwood, in 4-ton loads, at 11*s*. per yard. Sample on application to
THE PEAT ASSOCIATION, 10, Cullum Street, London, E.C.

SALES BY AUCTION.

Monday Next.

IMPORTANT and SPECIAL SALE.—Without Reserve.
44 Cases of ORCHIDS from the Brazils, comprising

100 Lælia elegans, grand masses	200 Oncidium sarcodes
300 ,, purpurata, very fine	200 ,, concolor
100 ,, Perrinii	200 ,, Marshallianum
300 Cattleya intermedia	200 ,, dasytyle

Oncidium curtum, O. crispum, Colax jugosus, Zygopetalums, &c. The whole were collected by Mr. J. D. Osmers, and brought home by him, and are now in splendid condition.

Also 500 Odontoglossum Alexandræ, and various other imported ORCHIDS, received direct, in fine condition.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on MONDAY NEXT, April 25, at half-past 12 o'Clock precisely, the above valuable ORCHIDS, consisting of nearly 1000 lots, without reserve.

On view morning of Sale, and Catalogues had.

Tuesday Next.

ORCHIDS in FLOWER. SPECIAL SALE.
400 Lots.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY NEXT, April 26, at half-past 12 o'Clock precisely, 400 lots of Orchids in Flower and Bud, from various collections, comprising amongst numerous others, the following attractive plants:—

Cattleya Mendelii, one of the finest varieties yet flowered.	Cymbidium Parishii
,, Trianæ Schroderæ. For description, see *Gardeners' Chronicle*, April 16.	Phalænopsis amabilis Dayana
Dendrobium nobile nobilius	Odontoglossum Vexillarium grand specimen and good variety, seventy flower spikes
Cœlogyne Massangeana, fifty-five bulbs, splendid specimen	,, Wilckeanum
	,, Alexandræ, several plants
	Masdevallia Veitchii grandiflora
	Chysis Chelsonii, rare
	Angræcum Ellisii

On view morning of Sale, and Catalogues had.

Willesden Green.

By Order of the Executrix. SMALL FREEHOLD NURSERY, with Two Greenhouses; also in Lots, the Stock of Shrubs, Plants in Pots, &c.
Important to Young Beginners.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, on the Premises, The Nursery, Strode Road, Willesden Green, on TUESDAY, April 26, at 1 o'Clock precisely.

May be viewed. Catalogues had of Mrs. Van Celst on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

Wednesday Next.

5000 LILIUM AURATUM from Japan, 10,000 Double African TUBEROSES, 2000 Pearl TUBEROSES, GARDENIAS, TREE CARNATIONS, STEPHANOTIS, AZALEAS, PALMS, and other plants; CARNATIONS, PICOTEES, PINKS, PANSIES, GLADIOLUS, and a variety of hardy PLANTS and BULBS.

MESSRS. PROTHEROE AND MORRIS will SELL the above, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on WEDNESDAY NEXT, April 27, at half-past 12 o'Clock precisely.

On view morning of Sale, and Catalogues had.

Wednesday Next.

5000 LILIUM AURATUM, 10,000 Double African TUBEROSES, 2000 Pearl TUBEROSES.

MESSRS. PROTHEROE AND MORRIS will include the above in their SALE on WEDNESDAY NEXT, April 27.

On view morning of Sale, and Catalogues had.

East Dulwich.

By order of the Mortgagees.—Most favourably situate about 5 miles from London and 5 minutes' walk from Champion Hill Railway Station.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, at the Mart, Tokenhouse Yard, City, E.C., on THURSDAY, April 28, at 2 o'Clock precisely, the valuable LEASEHOLD NURSERY and MARKET GARDEN, known as the Suffolk Nursery, Goose Green, East Dulwich, comprising 3 a. 0 r. 11 p. of very fine Garden Land, 22 Greenhouses measuring 27,000 super. feet, 5000 feet of Hot-water Piping, 7 Boilers, Conservatory, Seed Shops, with a Brick-built detached modern Residence. Held for an unexpired term of 13 years, at the very low ground rent of £31 5*s*.

May be viewed. Particulars, Plan, and Conditions may be had at the Mart; of J. White, Esq., Solicitor, Bank Buildings, Ludgate Circus, E.C.; and of the Auctioneers, 67 and 68, Cheapside, E.C.; and Leytonstone.

Teddington.

By order of the Executors of the late Mr. Robert Laing.
Favourably situated about five minutes' walk from Strawberry Hill, ten minutes' walk from Teddington, and twenty minutes from Twickenham Railway Station, whence there is a frequent service of trains to Waterloo, and in the midst of a favourable residential district.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at the Auction Mart, Tokenhouse Yard, London, E.C., on THURSDAY, April 28, at 1 for 2 o'Clock punctually, in one Lot, a valuable FREEHOLD BUILDING ESTATE, containing an area of 3 a. 2 r. 6 p., possessing a frontage of 241 feet to Teddington Park Road, Teddington, and now ripe for immediate development.

Particulars, with Plan, may be had at the Mart; of Messrs. MAPLES, TEESDALE & CO., Solicitors, 6, Frederick's Place, Old Jewry, E.C., and of the Auctioneers, as above.

Hackney Downs.

By Order of the Owner, who is leaving the neighbourhood.—With Possession.—To Gentlemen fond of Horticulture.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, at the Mart, Tokenhouse Yard, City, E.C., on THURSDAY, April 28, at 2 o'Clock precisely, the conveniently arranged VILLA RESIDENCE, known as No. 88, Downs Park Road, Hackney Downs, with Five Modern Greenhouses, all communicating, efficiently heated, and adapted for the Cultivation of Orchids, Stove and Greenhouse Plants.

May be viewed by Cards, obtainable of the Auctioneers. Particulars, with conditions, may be had at the Mart; of A. S. B. EDWARDS, Esq., Solicitor, 11, St. Helen's Place, E.C., and of the Auctioneers, 67 and 68, Cheapside, E.C., and Leytonstone.

Friday Next.

CATTLEYA MOSSIÆ.

MESSRS. PROTHEROE AND MORRIS will include, by permission, in their SALE, on FRIDAY NEXT, April 29, by order of Mr. G. T. White, a fine importation of about 220 CATTLEYA MOSSIÆ, just to hand in splendid condition. They have been collected in the locality well known to him as producing the best varieties.

Also another property, a small importation of DISAS, &c., from the Cape.

On view morning of Sale, and Catalogues had.

Friday Next.

In Liquidation—THE NEW PLANT and BULB CO.
Absolute Sale, without reserve, by order of the Official Receiver.
Important and attractive Sale of the First Portion of the valuable and well-known Collection of ESTABLISHED ORCHIDS.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from the Official Receiver to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, April 29, at half-past 12 o'Clock precisely, without the least reserve, the First Portion of the valuable and extensive Collection of ESTABLISHED ORCHIDS, including the following:—

The entire stock of the beautiful new Cattleya Schroderæ, Certificated at South Kensington, April 12. See Professor Reichenbach's description, *Gardeners' Chronicle*, April 16.

Also the remaining plants of the importation of Cypripedium insigne which produced the grand variety "Wallacei," and other fine forms; Masdevallias, fine marked varieties of Odontoglossum vexillarium, Dr. Wallace's well-known strain; Cattleya Mendelii, in fine varieties, including Wallacei, Bluntii, delicatissima, and others; C. Mossiæ, including Wagneri (true), and other forms; Sarcochilus Hartmannii, Lælia anceps Dawsonii, and other Orchids.

On view morning of Sale, and Catalogues had.

N.B.—The Auctioneers, in calling attention to the above important Sale, desire to state that the whole of the plants of the particular species and varieties announced to be included will be catalogued and offered, and no duplicates will be retained for the SECOND SALE, which is fixed to take place on FRIDAY, May 13. The Utensils, Seeds, Glass Erections, and other effects will be Sold on the Premises a few days later.

The Downside Collection of Orchids.

Highly IMPORTANT SALE of selected duplicate plants from this renowned Collection, consisting chiefly of plants matchless in point of rarity and culture.
By order of Wm. Lee, Esq., in consequence of the overcrowded state of the houses.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to SELL by AUCTION, on the Premises, Downside, Leatherhead, on TUESDAY and WEDNESDAY, May 3 and 4, at half-past 12 o'Clock precisely each day, selected duplicate and other ESTABLISHED ORCHIDS, amongst which the following choice kinds will be found:—

Cattleya Trianæ Leeana	Lælia anceps Dawsonii	Bull's Blood — true and many other splendid varieties
,, ,, Dayana	,, Wolstenholmiæ	Cypripedium Stonei platytænium
,, Emperor	,, Amesiana	,, grande
,, ,, alba, true	,, bella	,, microchilum
,, ,, Eboracensis	,, Veitchiana	,, sylligerum majus
,, ,, Thompsonii	,, flammea	,, Arthurianum
,, ,, Osmanii	,, grandis	,, Wallisii
,, ,, Dodgsonii	Phaius tuberculosus	,, Leeanum superbum
,, ,, Emiliæ	Cymbidium Parishii	,, euryandrum
,, ,, Backhouseana	Pachystoma Thomsonii	,, vexillarium
,, ,, Colemani	Saccolabium Heathi	,, Morganiæ
,, fausta	,, Harrisonianum	,, tesselatum porphyreum
,, labiata, autumn-flowering	Dendrobium Phalænopsis	Cœlogyne cristata alba
,, calummata	,, Harveyanum	,, Lowi
,, Mardelli	,, nobile nobilius	Odontoglossum Hrubyanum
,, Skinneri alba	,, Falconeri giganteum	,, rigidum
,, Mendelii Selbornensis	Maxillaria Sanderiana	Vanda tricolor planilabris
,, ,, Morganiæ	Masdevallia Harryana	,, Pattersoni
,, exoniensis		,, Sanderiana
,, Rothschildiana		
Lælia elegans special varieties		

The Plants may be viewed any day prior to the Sale on presentation of Catalogue or card to view, to be obtained of Mr. WOOLFORD, the Head Gardener, on the Premises, and of the Auctioneers and Valuers, Central Auction Rooms, 67 and 68, Cheapside, London, E.C.

Pewsey, Wilts.

By order of the Trustee under a Deed of Assignment.
IMPORTANT SALE of the well known and valuable COLLECTION of EXHIBITION PLANTS (so successfully shown by Mr. J. F. Mould, at the principal London and Provincial Shows), GREENHOUSE PLANTS and NURSERY STOCK, together with the Goodwill of the Business.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL the above, on the Premises, early in MAY.

Fuller particulars will appear in future advertisements.

Forest House, Leytonstone, E.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from W. Fowler, Esq., J.P., who is leaving the residence, to SELL by AUCTION, on the Premises, Forest House, Leytonstone, about 10 minutes' walk from Leytonstone Railway Station, on TUESDAY, May 3, at 12 for 1 o'Clock precisely, 10 COWS and HEIFERS, mostly in profit; valuable CARTHORSE, 70 head of POULTRY, a Stack of about 50 loads of prime MEADOW HAY, 2 HAY-MAKING MACHINES, WEIGHING-MACHINE, one-horse CHAFF-CUTTING MACHINE, one-horse ROLLER, set of CHAIN HARROWS, BARROWS, 10 RICKCLOTHS, CARPENTER'S BENCH, capital light spring VAN, large quantity of BEDDING PLANTS, fine specimen CAMELLIAS, STOVE and GREENHOUSE PLANTS in variety; and numerous other effects.

May be viewed the day prior and morning of Sale. Catalogues can be had of Mr. MONK, the Head Gardener, on the Premises; and of the Auctioneers, Estate Agents, and Valuers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

N.B. The Auctioneers beg to anconce that the valuable Contents of the Residence will be Sold at a later date.

Esher.

By order of the Executors of the late R. Few, Esq.
CLEARANCE SALE of STOVE and GREENHOUSE PLANTS, fine trained AZALEAS, GARDEN FRAMES, TOOLS, and SUNDRIES.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL the above on the Premises, Wolsey Grange, Esher, on TUESDAY, May 10. Fuller particulars will appear next week,

Arle Court, Cheltenham.

The valuable collection of Specimen STOVE and GREENHOUSE PLANTS, ORCHIDS, &c.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from T. P. Walter Butt, Esq., to SELL the above by AUCTION, on the Premises, on WEDNESDAY, May 18. Fuller particulars will appear next week.

Wednesday Next.—(Sale No. 7406.)

IMPORTED and ESTABLISHED ORCHIDS, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, April 27, at half-past 12 o'Clock precisely, 200 plants of LÆLIA ANCEPS ALBA from Mexico; fine pieces of LÆLIA PERRINII, L. DAYANA, CATTLEYA BICOLOR, ONCIDIUM CRISPUM, O. ROGERSI, O. GARDNERIANUM, &c., from Brazil; a consignment of Burmese ORCHIDS, a fine lot of ORCHIDS in flower and bud, 50 good established plants of VANDA BATEMANNII, rare DISAS, of sorts; and an extensive consignment of Cape BULBS.

On view morning of Sale, and Catalogues had.

Wednesday Next.—(Sale No. 7405.)

First-class Dwarf ROSES, including most of the leading varieties; Hardy Ornamental SHRUBS and CONIFERS, FRUIT TREES of sorts, an immense assortment of BORDER PLANTS, Barr's Flag IRIS, 1000 Bulbs of Kelway's strain of Hybrid GLADIOLI, LILIUMS, &c.

MR. J. C. STEVENS will SELL the above by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, April 27, at half-past 12 o'Clock precisely.

On view morning of Sale, and Catalogues had.

Wednesday and Thursday Next.

10,000 grand Bulbs of LILIUM AURATUM from Japan, in the finest possible condition.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY and THURSDAY NEXT, April 27 and 28.

On view mornings of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7407.)

Valuable IMPORTED and ESTABLISHED ORCHIDS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., by order of Mr. F. Sander, on THURSDAY NEXT, April 28, at half-past 12 o'Clock precisely, a splendid lot of the large and free-flowering CATTLEYA GASKELLIANA, all well-leaved, and in extra condition; also fine importations of the rare NANODES MEDUSÆ, MILTONIA SPECTABILIS RADICANS, M. CANDIDA GRANDIFLORA, large masses of ZYGOPETALUM MACKAYI, LÆLIA DAYANA, IONOPSIS PANICULATA, SACCOLABIUM BLUMEI, CATTLEYA DORMANIANA, any many Brazilian and other ORCHIDS. At the same time will be offered a splendid lot of ESTABLISHED ORCHIDS, including many fine and rare plants, among them the following:—Cypripedium superciliare, C. euryandrum, C. Sedenii superbum, Cœlogyne Thuniana, Oncidium macranthum, large specimen; Odontoglossum Kramerii, Masdevallia xanthocorys, M. Chestertoni, sixty leaves; M. Wagneriana, eighty leaves; Cypripedium Regnierii, large plant; Cattleya Sanderiana, C. Schroderæ, Angræcum Sanderianum, Odontoglossum citrosmum, with four spikes; several fine O. Alexandræ in flower; Warscewiczella discolor, large specimen; Oncidium phalænopsis, fine var. Cattleya citrina, and many other ORCHIDS.

On view morning of Sale, and Catalogues had.

FOR DISPOSAL,

MR. LAING'S NURSERY, Twickenham.

Owing to the Death of Mr. LAING, this LONG-ESTABLISHED NURSERY, occupied by Mr. LAING for the last fifty years, with Lease, Goodwill and Stock of GREENHOUSES, PITS, SHRUBS, PLANTS, and IMPLEMENTS, for EARLY SALE. 5 minutes' walk from St. Margarets; 15 minutes' walk from Twickenham; 20 minutes' walk from Richmond. All Stations of the S.-W. Railway, close to the new residential neighbourhood of St. Margarets, and ten minutes' walk from centres of Richmond and Twickenham towns respectively. As a Home Nursery, held with land at Teddington on Twickenham Common (as done by Mr. Laing), or as a Nursery for a London Shop, a Market Grower, or for an energetic man wishing to commence business with a long-established connection, the opportunity is unexceptional. Particulars now ready

Apply to GEORGE PAUL, The Old Nurseries, Cheshunt.

ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

Have recently received large and fine importations of the following Orchids:—

DENDROBIUM Wardianum giganteum
,, thyrsiflorum
,, Falconeri
,, Jamesianum
,, Devonianum
,, densiflorum
,, chrysanthum
,, Brymerianum (true)
,, cariniferum
,, heterocarpum
,, alba sanguineum
,, Parishii
,, crassinode Barberianum
,, infundibulum
,, Bensonia majus
,, eburneum
,, Paxtoni

CATTLEYA Trianæ
,, Mendelii
,, Eldorado
LÆLIA anceps (white)
,, ,, Morada
,, furfuracea
,, acuminata
,, majalis
ODONTOGLOSSUM citrosmum
,, Cervantesi Morada
,, Cervantesi
,, Rossi majus
,, maculatum
ONCIDIUM Cavendishianum
,, incurvum
SACCOLABIUM giganteum
,, Blumei majus

The above are all in grand condition. Prices and full particulars on application. Inspection invited.

The Company has also still to offer a large portion of the "HARVEY COLLECTION" of ORCHIDS. Second edition of this Catalogue will be sent, post-free, on application to the Company,

THE VINEYARD & NURSERIES

GARSTON, near LIVERPOOL.

London, 30 Miles from.

OLD ESTABLISHED NURSERY BUSINESS, with an extensive connection. Satisfactory reasons for disposal.

MESSRS. PROTHEROE AND MORRIS are instructed to find a Purchaser for one of the oldest established Nursery Businesses within a similar distance from London. The incoming would be subject to valuation, or a Partnership would be entertained.

Full particulars of Messrs. PROTHEROE AND MORRIS 67 and 68, Cheapside, London, E.C.

FOR SALE, cheap, a SMALL NURSERY —Acre of Ground. 4000 feet of Glass and Cottage on the Ground. Long Lease. Present occupier twenty years. Given up on account of old age.

Address, J. B., Vine Nursery, Anerley Park, Penge, S.E.

To Florists and Market Gardeners.

Close to a Station and 15 minutes from Town.

TO BE SOLD, as a going concern, 3½ acres of LAND, well planted, capital RESIDENCE, and 500 feet of GLASS HOUSES well stocked with Gardenias, Stephanotis, &c. Proprietor relinquishing solely on account of ill-health.

WM. HODSOLL, Estate Agent, Farningham, and 143, Milton Road, Gravesend.

Florist, &c.

Choice FRUITS, PLANTS, CUT FLOWERS, SEEDS, WREATHS, and SUNDRIES.

FOR DISPOSAL, an Old-established BUSINESS. Fine connection. Good Shop and House. Low rent. Owner relinquishing business.

Apply, BURTON AND CO., Auctioneers and Estate Agents, Tunbridge Wells.

London, W.

Dissolution of Partnership. Must be sold.

TO BE SOLD, an important MARKET NURSERY, with numerous Glass Erections, on very moderate terms. An excellent opportunity.

Full particulars and terms of Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, R.C.

To Fruit and Flower Growers, Market GARDENERS and OTHERS.

Surrey, 18 miles from London midway betwixt two stations, and in the midst of a district where there is a local demand.

TO BE LET on LEASE or SOLD IMMEDIATELY, owing to owner's ill-health, an excellent FRUIT GARDEN, well stocked, about 12 acres in extent (more or less Land could be had as desired), with numerous Glass Erections, including Vinery, Strawberry, and Tomato Houses, and several Pits. All heated.

Substantial brick-built 7-roomed Cottage, also Stabling, Cart-shed, Cow-shed and other Buildings, Fruit, Seed Potting and Washing Sheds. Terms of

WATERER AND SONS, Land Agents, Chertsey.

TO BE LET or SOLD, a well-stocked NURSERY, consisting of 20 Houses and Pits, with Cottage attached. Trade done (all private) about £500 per annum. Can be had upon very reasonable terms.

Apply Victoria Nursery, Malham Road, Forest Hill, S.E.

Landscape Gardening.

H. F. MALLER (of the firm of B. Maller & Sons), late Pupil of the Crystal Palace School of Landscape Gardening, is prepared to FURNISH PLANS, or undertake any kind of the above work.—61, High Street, Lewisham.

The following Circular Letter has been addressed to the Gardeners of the United Kingdom:—

SPECIAL.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

50, Parliament Street, London, S.W.
April 20th, 1887.

Dear Sir,—

Whilst the Members of nearly every Society in the United Kingdom are evincing their Loyalty to the Queen upon the occasion of the completion of the 50th Year of her reign, it would not be becoming that the Horticulturists of England should be behind in showing the respect they owe to their Sovereign.

In anticipation of this eventful year the Pension List was, in January last, increased to 122 recipients, and in order to further mark this interesting occasion the Committee consider that, as Her Majesty is the Patroness of the Institution, the best plan for celebrating the event will be to make a grant of £5 to each of the Pensioners, and to each unsuccessful Candidate at the late Election, in all 133 persons, and thus allow these poorer brethren of the Horticultural world an opportunity of participating in the general rejoicing.

To defray the extra expenses thus entailed, and to carry out the above scheme, the Committee send you the accompanying Collecting Card, and express their earnest hope that you will do your utmost to assist them in their endeavours to promote the happiness and comfort of so many poor and deserving Horticulturists, and secure the sum of £1000, which is the amount required.

The Committee would suggest your submitting this Card to your Employer, experience having shown them that Employers are, as a rule, not aware of the existence of the Institution, and would willingly subscribe to it were it brought to their notice.

The Committee desire now to draw your special attention to the following resolutions:—

"*That upon any person collecting the sum of* **£10 10s.**, *he "will by virtue of such collection become a Life Member "(without any further payment), with all its privi- "leges, from the date upon which the said amount was "completed.*"

"*That any person who may collect Ten Guineas (should he "be already a Life Member), may nominate a Friend, "by virtue of such collection, as a Life Member.*"

All amounts hitherto collected by you will be carried to your credit of this and all future collections.

The Secretary, Mr. Cutler, will be happy at all times to afford you any information, and we trust to receive such a report from him as will show that our appeal has not been in vain.

We are,
Dear Sir,
Yours faithfully,
JOHN LEE, *Chairman of Committee.*
HARRY J. VEITCH, *Treasurer.*

N.B.—This Collection will take the place of that usually made in the Autumn.

SECOND NATIONAL CO-OPERATIVE FLOWER SHOW, SOUTH KENSINGTON, AUGUST 23, 1887.

SIXTY POUNDS in PRIZES for FLOWERS, FRUITS, and VEGETABLES; Silver and Bronze Medals, Certificates of Merit, and Numerous Special Prizes. Schedules of Prizes on application to

WILLIAM BROOMHALL, Secretary.

1, Norfolk Street, Strand, W.C.

NATIONAL CHRYSANTHEMUM SOCIETY.—Schedules now ready, and may be had (free) on application to WILLIAM HOLMES, Hon. Sec.

Frampton Park Nurseries, Hackney, E.

BRIGHTON and SUSSEX FLORICULTURAL and HORTICULTURAL ASSOCIATION.

A GRAND SUMMER EXHIBITION and a GRAND AUTUMN EXHIBITION will be held this year. Dates and particulars will be shortly announced.

EDWARD CARPENTER, Secretary.

Secretary's Office: 96, St. James' Street, Brighton, March 28, 1887.

THE SOCIETY of APOTHECARIES of LONDON give notice that a Course of TWELVE LECTURES on BOTANY will be delivered by J. G. BAKER, F.R.S., and F.L.S., at their Garden at Chelsea, on the Saturdays of May, June, and July next, at 3 P.M.

The Lectures will be open to all Medical Students and other gentlemen being desirous to attend.

Tickets of admission to be obtained of the Bedell.

J. R. UPTON, Clerk to the Society.

Apothecaries Hall, 1887.

BEGONIAS A SPECIALTY.—LAING'S BEGONIA TUBERS. Awarded Two Gold Medals. Free by post. Unequalled quality. Named Singles, from 12*s.* to 42*s.* per dozen; unnamed seedlings, selected to colour, for pots, from 12*s.* per dozen; bedding, selected to colour, 9*s.* per dozen; bedding, choicest mixed colours, 6*s.* per dozen; choicest named Doubles, from 42*s.* per dozen; unnamed, very choice selected, 24*s.* and 30*s.* per dozen; choicest mixed, 18*s.* per dozen. CATALOGUES gratis.

JOHN LAING AND CO., Nurseries, Forest Hill, S.E.

CHRYSANTHEMUMS, 550 varieties, true to name, strong Cuttings; buyers' selection, 1*s.* 6*d.* per dozen, 10*s.* per 100; Plants, 2*s.* 6*d.* per dozen, 16*s.* per 100. For price of new sorts see CATALOGUE. Many of the largest growers are supplied, and many of the best prizes in the county have been taken from plants and cuttings supplied by me. Catalogue, two stamps, of

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EIGHTY THOUSAND CLEMATIS, in Pots, of all the finest Double and Single Varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12*s.* to 24*s.* per dozen, strong plants. Descriptive LIST on application.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

ROBERT NEAL begs to call the attention of Gentlemen, Builders, and others who intend planting this season, to his stock of FRUIT, FOREST, and ORNAMENTAL TREES, SHRUBS, ROSES, &c., which are in fine condition for removal, and comprise especially those kinds which are most suitable for Town Planting. Free delivery in own vans within a distance of six miles.

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WILLIAM BADMAN offers as under, from Store-pots, all well-rooted, and fit for present potting. The present is a good time for making up losses sustained during the winter:—

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LOBELIA Bluestone, pumila magnifica, true, from Cuttings, 2*s.* 6*d.* per 100, 20*s.* per 1000; Brighton Blue, fine, 3*s.* per 100, 21*s.* per 1000.
CALCEOLARIA Golden Gem, 5*s.* per 100, 40*s.* per 1000; Camden Hero, fine dark, 6*s.* per 100.
HELIOTROPE Jaun d'Amour, Miss Nightingale, dark, 6*s.* per 100, 50*s.* per 1000.
AGERATUM Imperial Dwarf, blue, 5*s.* per 100, 40*s.* per 1000.
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PELARGONIUM Vesuvius, finest bedding scarlet, 8*s.* per 100, 75*s.* per 1000; Master Christine, 12*s.* per 100; Mrs. Levers and Jenny Dodds, fine pink, 10*s.* per 100; Henry Jacoby, best crimson, 12*s.* per 100.; Madame Vaucher, white, 12*s.* per 100; Queen of Belgians, finest white, 3*s.* per dozen, 20*s.* per 100; Niphetos, bedding white, 12*s.* per 100; Waltham Seedling, Lucius, Jean Sisley, and White Vesuvius, 10*s.* per 100.
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GOLD-LEAF Crystal Palace Gem, 10*s.* per 100; Happy Thought, 12*s.* per 100.
BRONZE McMahon, Black Douglas. The Czar, the best bedders, 15*s.* per 100..
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DOUBLES, F. V. Raspail, fine scarlet; M. Thibaut, pink, M. Baltet, best white, 12*s.* per 100.
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PELARGONIUMS, Show and Decorative, from single pots, good, 20*s.* per 100, 3*s.* per dozen.

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CLEARANCE SALE of healthy PALMS for Table and Conservatory Decoration.—LATANIA BORBONICA, SEAFORTHIA ELEGANS, and PHŒNIX RECLINATA, 12 inches high, 6*d.* each, 4*s.* per dozen, 25*s.* per 100; same kinds, 20 inches high, 1*s.* 6*d.* each, 6 for 8*s.*, 12 for 14*s.* Packages and parcels post-free.

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GENERAL CATALOGUE

(112 pages) for 1887

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I	fimbriatum ...	... 8 to 10 ,,	5*s.*, 7*s.* 6*d.*
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ABIES DOUGLASII, 14 to 15 inches, 70*s*. per 1000.
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TAXUS (YEW), in great variety, 12 to 18 inches, 9*s*. per dozen.
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100 CONIFERS, in 50 distinct varieties, for 50*s*.

Priced LISTS free on application.

MORRISON BROTHERS, Nurseries, Aberdeen.

1887—DAHLIAS—1887

Present Season's Catalogue is now ready and may be had gratuitously upon application.

It is made up as follows:—

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To this section I pay a very considerable amount of attention, and I am, in the present season's Catalogue offering some two dozen really first-class and showy varieties, perfectly distinct from the Shows and Fancies, and all, more or less, following the style of the well-known old Cactus variety, Jaurezi. The new varieties of the present season are especially deserving of notice.

POMPONS, OR BOUQUET DAHLIAS.

My collection of these is one of the most complete in the trade, consisting of about three dozen varieties of really first-class, distinct sorts, all invaluable for bedding and for cutting.

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My collection of these includes all the well-known old varieties, as well as the best of the new ones.

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The collection is this year considerably improved by the addition of a dozen exceptionally choice new sorts, which are offered in this year's Catalogue for the first time. In addition to these my Catalogue comprises all the choicest of the varieties of previous years' introductions.

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Saved from Selected Stocks with greatest care.

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of Choicest Strains and most select character.

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Best Varieties, carefully selected, hand-picked.

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Descriptive Priced CATALOGUES on application.

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CHARLES SHARPE AND CO. having selected the above Swede for many years, can now offer it in perfection—the produce of their own Seed Grounds.

Price to the Trade on application to

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SEED GROWERS,

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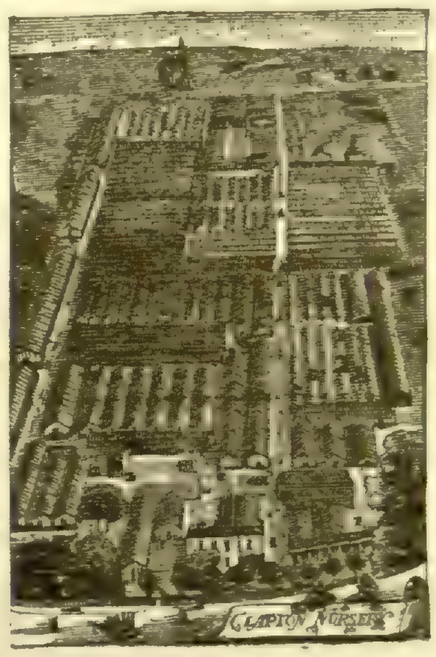
CUTBUSH'S MILL-TRACK MUSHROOM SPAWN.—Too well known to require description. Price, 6*s*. per bushel (1*s*. extra per bushel for package), or 6*d*. per cake; free by parcel post, 1*s*.

None genuine unless in sealed packages and printed cultural directions enclosed, with our signature attached.

WM. CUTBUSH AND SON (Limited), Nurserymen and Seed Merchants, Highgate Nurseries, N.



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274,600 superficial feet of glass.

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NEW BEDDING TROPÆOLUM, MRS. PEEBLES.—Bright rosy-crimson, of fine dwarf habit, and most abundant bloomer, throws its flowers well above the foliage. This beautiful variety will supersede all others in the same class for bedding and ribbon borders. Admired by all who saw it last season.

1*s*. each, or 6*s*. per dozen.

JOHN DOWNIE, Beechhill Nursery, Murrayfield, Edinburgh.

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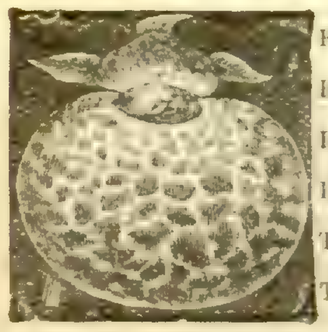

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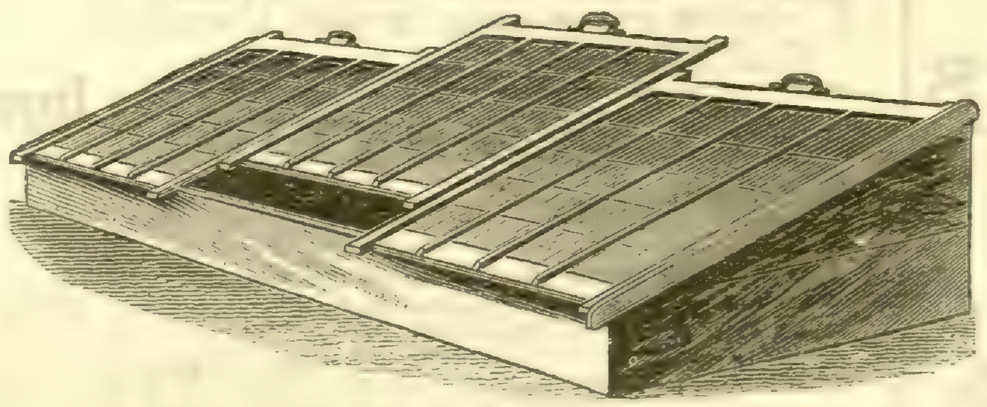

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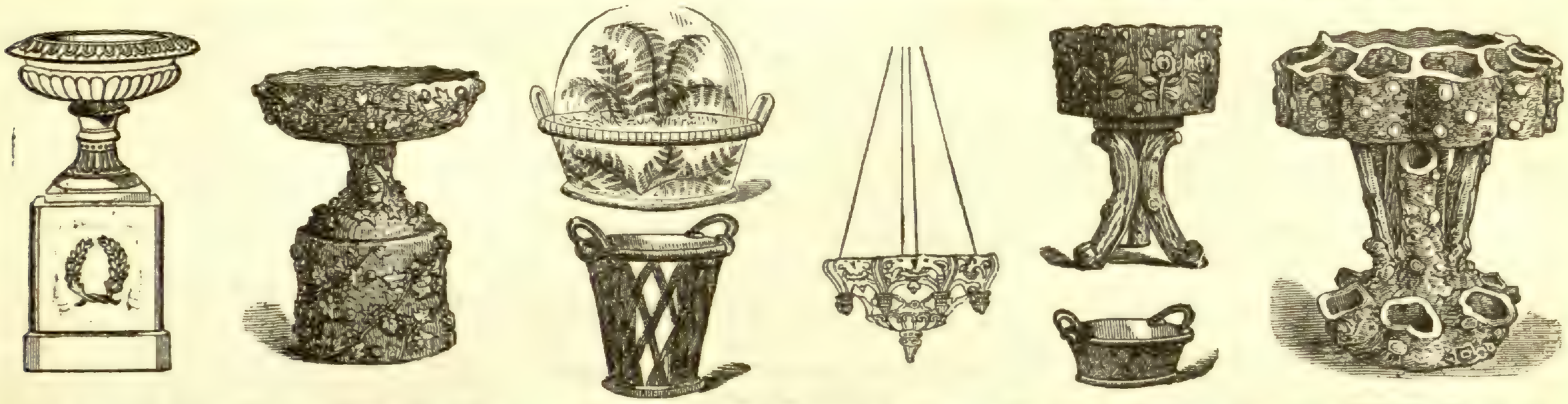

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SATURDAY, APRIL 23, 1887.

THE PRIMÆVAL FORESTS OF BRITISH GUIANA.

THE exploring party consisted of myself, my wife, our daughter, a child of seven, and about a dozen Indians. Our little companion was much indebted to two or three of the Indians for willing and cheerily given assistance over the more difficult parts of a journey that was quite a formidable one to be essayed by so young a traveller. The journey had been made before by three or four colonists, two of whom (both Oxonians) are my friends—one, Mr. Im Thurn, the magistrate and Government officer in charge of the outlying Pomeroon River district, and the other Mr. Percival, the Principal of Queen's College of British Guiana—who made the journey together two or three years before.

I left Georgetown in March last year, and was absent exploring on the Pomeroon River and the region beyond its source three weeks. It took two days to reach the Pomeroon, on the upper part of which I spent several days searching the forest for a flowering specimen of the tree furnishing indiarubber, and which was the object of the journey. After having felled so many trees unavailingly that I had almost abandoned the hope of success, I was fortunate enough at last to find one in full flower, and having secured specimens* I turned from the Pomeroon into the Issororo River, its principal tributary in this upper part, if indeed it be not the main river itself. The banks along the lower stretches are lined with two gregarious Ferns, Meniscium serratum, and the peculiar and characteristic viviparous variety of Aspidium macrophyllum. These are mixed with grass, creepers, and other herbaceous growth, with here and there large beds of Eichornia speciosa, spreading into the river. On each side the forest rises abrupt and wall-like. For about an hour's pulling from the mouth the way is unobstructed, but from this point the

* [The Touck-pong tree, yielding Guiana rubber, is supposed to be a variety of Sapium biglandulosum (Euphorbiaceæ)].

fallen trees which lie across the river are numerous and difficult to pass. We pulled the boat over some of these and under others, and many had to be cut through to afford a passage. Here for the first time I found a beautiful stemless Palm, a Geonoma—G. acaulis of Martius—with the inflorescence forming a short simple spike, 3—4 inches long, at the end of a long peduncle, projected from among the leaves. The spike itself is red, the fruit jet, like Black Currants, and the leaves at first a beautiful pink. There was also a tall species of the same genus, reaching 15 feet high, with the leaves split into narrow leaflets, near G. paniculigera of Martius.

On the banks of the river, in bloom, but not very frequent, was Schomburgh's Rose of the tropics—Brownea latifolia of Jacquin, with its great clusters of brilliant scarlet flowers. Lilies, Hymenocallis, and Crinum grew plentifully in the soft muddy banks. The first is common in the forest over most of the region traversed, and, indeed, over all the alluvial land in the interior of the whole colony. The flowers are produced in an umbel, on straight, diverging pedicels, and have long, pendent, spirally twisted, ligulate petals, each flower of the cluster standing separate, and showing to the greatest advantage. The chief forest tree is the stately towering Mora. Here I noted the disappearance of the Troolie Palm, Manicaria saccifera, which on the Pomeroon is so abundant and luxuriant, reaching often 50 feet high, so as to be quite a characteristic feature of the river.

Half-way up we camped, and spent the night in the forest, our hammocks slung to trees whose heads interlaced high above, and under the improvised shelter of a few Palm leaves felt secure against the contingency of rain. I gathered logs, and made a roaring fire after dinner, which lighted our camp like day, but made the darkness around even more intense. No sense of fear or insecurity need be felt, however, within the radius that the light of our fire illumined, nor, though wild animals abounded, was there much beyond it to excite our apprehension. Our sleep was unbroken till the first grey rays of dawn, with the chill, uninviting aspect it gives the forest surroundings, broke through the dew-dropping roof of the trees, and we turned out to prepare the cup of coffee with which at dawn one begins the day in these latitudes.

After a tedious day, a great part of which was spent in hauling the boat over the prostrate trees that lay across the river, we reached the point where we had to leave the water. The journey now lay overland through the heart of deep primeval forest. About an hour from the landing place, after traversing a rough and difficult track over deep beds of dry creeks or large water channels, a small Indian camp was reached. Here I dried my pressing paper, and we spent the night. Leaving this settlement we entered what appeared like a Fern paradise, so great was the abundance, and, seemingly, the variety of the Fern vegetation. It covered the ground, the decaying logs, and mantled the trees for many feet from the ground. On examination this profusion and variety was seen to be produced almost entirely by a single plant, a large climbing Fern, Acrostichum caudatum, which begins its growth on the ground but which only reaches its full development after it has ascended the trunks of the trees for several feet; and the great variation of form which so impresses and deceives the observer is due merely to the stages of its evolution from birth to maturity. Of mile after mile of this region this species has taken paramount possession, and it constitutes, indeed, the general undergrowth of the forest.

A Miniature Palm.

Continuing our way, all heavily laden with various impedimenta required for a week's journey, I detected beside the path a tiny and most charming little Palm, in full fruit and flower, with a stem no thicker than a quill, and leaves no bigger than a child's hand. In no country is the wide range in size or variety in form of the Palms more completely represented than in Guiana I was delighted with this new acquisition to the flora and to my knowledge, and felt that its discovery was a sufficient reward for the trials of he journey. It is nearly allied to Geonomat pycnostachya of Martius, and it is so small that three or four full-grown plants might be held together on one's open hand. Our track now passed through two or three freshly felled Indian Cassava fields, which, according to the custom everywhere followed, had just been burned to clear off the bushwood. The trunks of the trees, charred and still smouldering, lay stretched across the path in black and unsightly confusion, forming a formidable barrier to our progress unbroken for several hundred yards. The heat was intense and almost unbearable, as one clambered painfully step by step over the blackened stems; and the big collecting cases, carried one over each shoulder, every time one stooped or jumped from a log swung round together from behind with a most disagreeable and aggravating clatter. One meets with nothing so tiresome on a journey nor so trying to the temper as one of these freshly felled Cassava fields, in which one often wanders fruitlessly, the foot track that existed before it was felled having been obliterated by the fire.

At the next settlement there were several families of Indians, but no vacant house on our arrival. However, the usual hospitality of the Indians was immediately shown us; a family turned out of their house, swept it, and made it tidy, and gave it to us, while they joined some of their relations or neighbours.

An Indian house, it may be noted in passing, is, throughout the forest region of Guiana, a mere open shanty of posts with a Palm leaf roof, constructed without a nail in any part. From the framework the universal hammock, which serves the use of bed, lounge, and seat, is permanently slung. A few roughly shaped blocks, often carved into the form of animals, which serve for seats that are seldom used, and perhaps a log, hollowed out, as large as a small canoe, for making the native alcoholic beverage, *paiware*, in, constitute the furniture, and the utensils for preparing and cooking Cassava and pepper-pot, all standing about on the loose sandy floor, complete the domestic equipment of these very untidy, but easily built and easily abandoned homesteads. The Indians of the savannah regions, in the more elevated, and therefore colder and remote interior of the country, enclose their houses. On this journey the Indian settlements proved a very convenient distance apart as stations for drying my pressing paper. Reaching one every day, I was enabled to dry my specimens rapidly, and preserve them in the best of order, whereas without that convenience, as I have experienced on previous expeditions, many things would have been spoiled altogether, and all would have suffered in quality. My first duty, therefore, on reaching a settlement was to lay into paper

Fig. 102.—Wood anemones: wind-flowers. (see p. 543.)

the specimens gathered on the way, turn into fresh paper those already pressed, and dry the paper that had become damp. This, as a rule, took three hours.

At this settlement I found a plentiful lot of Guinea Pepper in full flower. The district being very moist Ferns in variety were plentiful, among which I gathered a small new Trichomanes, T. pinnatinervinum; a new variety of Tree Fern, Hemitelia multiflora var. superba, and a species of Acrostichum, A. osmundaceum, that is new to the country, allied to the ubiquitous species before mentioned, which forms ninety-nine per cent. of the Fern vegetation of the region.

Our path lay entirely through dense towering forests, dim with the diffused and solemn light that ever looms beneath its shade, or brightened only by a sidelong gleam, shot through some chink in the leafy canopy above, which here and there is reflected with dazzling force amid the pervading gloom. Except at the Indian settlements and Cassava fields no opening occurred. Game seemed to be common, and the men, by going out just before dawn, shot several kind. This is the only time, indeed, when one is almost certain to be successful. During the heat of the day no life whatever is heard or seen except, perhaps, that now and again far overhead the ringing pi-pi-yo of the greenheart bird startles the silence, or the strident whur-r-r whiz-z-z of some unusually active member of the cicada host thrills through the forest for an instant, and is silent again. Everything else has gone to rest till the evening, when the forest becomes again animate with life, and resonant with varied cries and noises.

From the third settlement, as my men knew the way no farther, I took another man as guide, and to keep by my side. In stooping to examine plants I could not keep up with the rest, and was often a mile or two behind, and the new guide helped also to carry what I gathered by the way. The way to-day lay over a succession of ridges, with waterways between that gave some trouble in crossing, some having to be waded, while others were bridged over by trees. This rising and falling of the ground seems to be the general character of the topography of the region. I found here another Geonoma new to Guiana—G. leptospadix, Trail. The stem is about one-third of an inch thick, 2—3 feet high, leaves oblong, V-cleft at the top, the base cuneate. It occurred plentifully, and was fruiting freely. Later in the day a few specimens—two or three only—of a very tall and robust species were found, but they were not in fruit. The settlement was reached soon after mid-day, but no further progress was made, as my time was occupied till night with the preparation of plants that had been already collected. This was the last of the Indian settlements in this direction. I was led by the Indians to believe that there was yet another beyond, but found on reaching the place that they referred only to a spot in the forest marked by the remains of an old "benab," where people were in the habit of encamping. *G. S. Jenmans, Government Botanist, British Guiana.*

(To be continued.)

Currants.—The Director of the New York Agricultural Experiment Station has lately published an exhaustive account of the history of the Currant (Ribes). It was not cultivated till the close of the sixteenth century, Ruellius in 1536, being the first to mention it. By 1613 the common red, the Red Dutch, and the White Dutch were known and figured, and now, in Hogg's *Fruit Manual*, twenty sorts are catalogued and described.

THE WOOD ANEMONE.

After patient waiting we are so glad to see the Wood Anemone once more that we are hardly inclined to discuss the origin of the name Windflower sometimes applied to the plant. Our artist evidently approves of the term, for he shows us (fig. 102) the star-like blossoms driven by the breeze. Prior, a scholar as well as a botanist, accepts the derivation of Anemone from *anemos*—wind, and narrates how the flower originated from the tears shed by Venus over the dead body of Adonis, but we are so sceptical now-a-days that all the writers, from Bion to Prior inclusive, would not induce us to believe that except as a fairy tale. Nor are we more inclined to believe that Pliny was right when he said the flower was so named because it never opens but when the wind is blowing. All we know is that the wind has been blowing pretty hard in our garden lately, but it is only to-day (April 20) when the wind has abated, that we have noticed both single and double Wood Anemones in flower. We turn to Messrs. Britten and Holland's *Dictionary of Plant Names*, in the hope of getting information; and so we do, for we find our elegant little friend has no fewer than eighteen synonyms! We feel a grim satisfaction at this, for profane Philistines, who like popular names, are apt to poke fun at the botanists, not only for the uncouthness of their nomenclature, but also for the profusion of their synonyms. Well, let us see how these things are managed by the profane. Here is, first, the botanical name—Anemone nemorosa, L.—two words known and accepted all over the world, and capable of being referred to in the books of all countries. That is the one botanical name—now for the profane:—"Bow Bells, Cowslip, Crowfoot (wood), Cuckoo-flower, Cuckoo-spit, Darn-grass, Drops of Snow, Enemy, Granny's Nightcap, Jessamine (wild), Moon-flower, Neminies, Smell Foxes, Smell Smock, Soldiers, Underground (?), Wind-flower and Wind-plant." *Utrum horum mavis accipe*, we are inclined to say, but don't bewilder us with any.

PLANTS NEW OR NOTEWORTHY.

AGAVE (EU-AGAVE) MORRISII, *Baker, n. sp.**

(See Fig. 105, p. 549).

This new species falls into the same group as americana, as the groups are planned out and characterised in my synopsis of the genus Agave, published in the *Gardeners' Chronicle* in 1877. It has been passed over as A. americana by Swartz, Grisebach, and all the other botanists who have dealt with the botany of Jamaica, and we are indebted entirely to my colleague, Mr. D. Morris, for finding out that it is a distinct species, and for the pains that he has taken in getting together the material on which these notes are founded. The leaves agree in shape with those of americana, but they are larger in size, green not glaucous, not so thick, and more pliable in texture, and the prickles are much smaller, and the edge of the leaf is much less decidedly repand between them. The inflorescence is not so tall, its main branches are more numerous and spread horizontally; the pedicels are shorter, the ovary more slender, and the capsule has a distinct neck at the base. Young plants have recently been imported alive, and placed in the Kew collection.

Description.—Acaulescent. Leaves twenty or more in a dense rosette, oblanceolate spatulate, 6 or 7 feet long when fully developed, nearly 1 foot broad at the broadest part, which is two-thirds of the way up, narrowed gradually to the apex, which has a pungent brown channelled spine 1 inch long, and to 4½—5 inches above the dilated base; colour a dull opaque green, not at all glaucous, on both surfaces, which are very smooth, the face being but little concave when the leaf is fully developed; centre about half an inch, base 2 inches thick; marginal prickles deltoid-cuspidate, horny, dark brown, ⅙ inch long and broad, ½—¾ inch apart in the middle of the leaf, the concolorous edge but little repand between them. Peduncle, including the thyrsoid panicle, 15—20 feet long; main branches thirty to fifty, spreading horizontally, 1 foot or 1½ foot long, densely corymbose at the apex; pedicels about ⅓ inch long; bracts minute, ovate, membranous. Leafy bulbils often produced from the axils of the pedicels. Perianth bright yellow, 2—2½ inches long, exclusive of the stamens; ovary cylindrical-trigonous, an inch long; tube short, infundibuliform; segments lanceolate, from a deltoid base, an inch long. Stamens inserted in the perianth-tube, nearly twice as long as the segments; anthers linear, an inch long. Style not developed till after the anthers fade, 2½ inches long. Capsule oblong-trigonous, 1 inch long, ¾ inch diameter, with a distinct neck, stipitate at the base. Seeds discoid, ½ inch diameter. *J. G. Baker.* [For our illustration we are indebted to the skill and courtesy of Mrs. Dyer. Ed.]

* *Agave (Eu-agave) Morrisii*, Baker, n. sp.—Foliis ad rosulam 20—30 oblanceolato-spatulatis maximis viridibus, aculeis marginalibus deltoideo-cuspidatis atrocastaneis subremotis magnitudine mediocribus; pedunculo cum panicula thyrsoidea 15—20 pedali, ramis primariis 30—50 dense corymbosis; ovario cylindrato-trigono pollicari; perianthio luteo, tubo brevi infundibulari, segmentis lanceolatis basi dilatatis ovario æquilongis; staminibus perianthio sesqui vel subduplo longioribus; fructu oblongo-trigono subpollicari distincte stipitato.

Epidendrum Stamfordianum Bateman, *n. var.* Wallacei.

I have a very rich set of wild grown specimens and garden inflorescences of this well known plant. The first came from Mexico, Costa Rica, Panama, Venezuela, New Grenada. Those with the broadest and largest anterior lacinia of the lip came from St. Martha (Purdie! dd. Lindl.!). Now the opposite is at hand. I had wild flowers, now I have rich inflorescences and plants from Dr. Wallace as well as from my indefatigable correspondent, Mr. W. Bull. No doubt, the last also came from the Ocaña hills,* where they were collected by Mr. Wallace, jun. The mid-lacinia of the lip is obcordate, quite entire and very narrow. It would also appear, that the column is constantly shorter. *H. G. Rchb. f.*

Rhododendron Lochæ, *sp. n.*†

This beautiful and singularly local plant, which attains a height of 20 feet, is cognate with R. javanicum, from which it differs in longer petioles, blunter leaves, smooth pedicels, somewhat smaller flowers, as well as more hairy style and fruit. In some respects this Australian species approaches also R. Griffithianum, but the disposition and colour of the flowers are very different. From R. celebicum it is easily distinguished by broader not acute leaves with not concealed veins, by non scaly pedicels, by mostly not narrow bracts, by the larger lobes of the corolla and not scaly ovary. From R. Arfakianum it is separated already by its glabrous pedicels, by the lobes of the corolla being shorter than the tube, and by the shorter stamens.

When in 1855 the writer of this note saw (on his passage with Mr. Gregory to what is now called the Kimberley country) from near the coast also the bold outlines of Mount Bellenden-Ker, the highest mountain of tropical Australia, towering to 5000 feet, he was led to think that the upper region might prove to be the home of species of Rhododendon, Vaccinium, Quercus, Begonia, and Impatiens, forms

* This is a misunderstanding, the plants were collected in the mountains south of Bogota, not Ocaña. *Alexander Wallace.*

† *Rhododendron Lochæ*, F. r. m. sp. n.—Arborescent, somewhat scandent; leaves persistent, mostly whorled, some scattered, conspicuously stalked, flat, nearly ovate, rather blunt, glabrous, well veined, minutely scaly dotted beneath; flowers rather large, in terminal umbelliform fascicles on very conspicuous stalklets; bracts cuneate or spatular-ovate, glabrescent; calyx rudimentary, oblique-patellar or sometimes variously short-lobed; corolla bright red, glabrous, but scaly dotted outside, slightly hairy inside, the lower portion broadly cylindrical, the upper portion bluntly five-lobed and conspicuously veined; stamens ten, slightly emerging from the corolla-tube, filaments short, hairy towards the base, anthers very small, ellipsoid-cylindrical; style nearly as long as the filaments, short-hairy to about the middle; indusium truncate, stigma slightly lobed; fruit narrow-ellipsoid, about as long as the stalklet or longer, short-hairy, five-celled; seeds conspicuously appendiculated. On the summit of Mount Bellenden-Ker, at an elevation of about 5000 feet. W. Sayer and A. Davidson.

of plants characteristic of cool Malayan sylvan regions; yet these anticipations became not realised. But Messrs. Sayer and Davidson, while accomplishing quite recently the only ascent hitherto made of Mount Bellenden-Ker, have now demonstrated by their botanic collections that a Rhododendron and a plant akin to Vaccinium do really exist on the summit of that mountain as an entirely new feature in the flora of this part of the globe.

The dedication of the only Australian Rhododendron to Lady Loch is in special recognition of the patronage given by her ladyship to Victorian horticulture, and in particular to that very group of plants, the occurrence of which in the Australian vegetation is now only rendered known more than eighty years after the discovery of Mount Bellenden-Ker. *F. von Mueller.*

Panax fruticosum, *L.*, var. multifidum, *N. E. Br., n. var.*

For horticultural purposes this is a distinct and desirable form of the protean Panax fruticosum. It is of compact habit, with tripinnatisect leaves, the ultimate divisions of which are linear or linear-lanceolate, and about $\frac{1}{4}$—$\frac{1}{2}$ inch long, tipped with a short white bristle, and often with bristle-tipped teeth along their margins. The outline of the entire leaf is broadly ovate and very obtuse, the divisions are numerous and close, and as the internodes of the stem are moderately short, the leaves are brought well together, and form a compact plumose crown. *N. E. Brown.*

MOUNT BELLENDEN-KER.

We learn that Mr. W. Sayer, an emissary of the Botanical Department of Victoria presided over by Baron Sir Ferdinand von Mueller, accompanied by an English tourist—Mr. Alexander Davidson—succeeded lately in ascending Mount Bellender-Ker, the highest mountain in Tropical Australia. They had to cut their track for many miles through dense jungles of virgin forest, and they had previously to encounter the hostility of the savages. Two cataracts of considerable magnitude were discovered during the ascent. This mountain has a particular horticultural interest, it having been named at the suggestion of Robert Brown (like Mount Dryander) during Flinders' expedition in honour of a botanist—Mr. Bellenden-Ker—the great investigator of Iridaceous and Amaryllideous plants in the early part of the century. When in 1855 Baron Mueller went with Mr. Aug. Gregory to North-west Australia (where then what now is so famous as the Kimberley country was discovered) he saw from the sea, he tells us, the bold outlines of Mount Bellenden-Ker, towering to 5000 feet, and could well appreciate the feelings which prompted Robert Brown to suggest a botanical name for that mountain; indeed, unexpectedly, it has proved the only one in all Tropical Australia which has a really cool zone. In a discourse given at the School of Mines in Ballarat, and on some other public occasions, the Baron pointed out many years ago that if in Australia any Rhododendron, Vaccinium, Quercus, Impatiens, Begonia, and other plants of the cooler Malayan regions existed at all in Australia, it would be on the almost constantly clouded and temperate heights of Mount Bellenden-Ker. This anticipation has now been verified as regards the two first-mentioned genera—a Rhododendron (R. Lochæ, allied to R. javanicum), and a Vaccinium of the section Agapetes having been discovered at an altitude of about 5000 feet, where they are strangely associated with a new arborescent Dracophyllum, a Spiræanthemum, a new Argophyllum, and other extra Indian types of vegetation specifically here endemic. New genera for Australia from the same high region are also a Didymocarpus, a Pentapanax; besides these were obtained new species of Helicia, Tristania, Morinda, Eugenia, Fagedea, and some others. The remarkable manner in which the Malayan and Australian plants meet others of New Caledonian type on the summit of Mount Bellenden-Ker (among the Australian being such typical forms as Trochocarpa and Arites) renders this high, though not extensive region, singularly remarkable for phytogeography. A new undescribed Proteaceous genus occurs, we are told, lower down on the range, and should on account of its many large seeds prove a new tropical Nut tree.

ST. GEORGE'S MUSHROOM:

Agaricus gambosus, Fries.

This perfectly safe and delicious Mushroom grows on downs and in short pastures, generally hilly pastures, in spring, where it forms Fairy Rings, often of enormous dimensions, and sometimes of twenty or more years' growth. The fungus is dedicated to St. George, because it often first appears about St. George's Day, April 23, and continues in growth for at least three or four weeks. Its appearance above-ground, however, is entirely regulated by the spring rains, so that when the storms of warm rain peculiar to spring are delayed for three or four weeks, as in the present spring, the St. George's Mushroom is correspondingly later in its advent. It is almost impossible to mistake this fungus for any other when the season of growth is borne in mind. The name gambosus has reference to the fanciful shape ascribed to the fungus, viz., a hoof, or the swelling near the hoof, from *gamba*.

The following description is drawn up from living examples:—Cap (pileus) 3 or 4 inches across, like kid leather to the touch, thick, obtuse, fleshy (see A, A, on section, fig. 103), convex, then somewhat unequally expanded, often cracked, smooth, white, very pale ochreous or very pale buff in colour, margin of cap at first rolled in (involute), as at B, B, slightly downy. Gills very narrow and crowded together, ventricose (swelling outwardly), E, E, with a small decurrent process (sinus) near the stem, D, D, livid white in colour. Stem solid, stout, firm, equal in diameter, C, slightly bulbous in young examples, slightly downy at the top, livid white in colour. Spores white, comparatively large, enlarged 500 diameters at F. Odour heavy, powerful, pleasant, fungoid—hence Sowerby's name, *graveolens*. Mr. W. De Lisle Hay, in his new book, says the odour is "musky-fungic."

The fungus is frequent in England, but less so in Scotland. A remarkable proliferous variety is sometimes found; in this form a dozen or twenty very small examples grow together in a connate fashion, and seem to represent one normal example broken up into a group of a dozen or more minor specimens which all spring from one base.

The accompanying illustration (fig. 104) shows a group of examples of A. gambosus belonging to a small Fairy Ring, and growing amongst Cowslips in a hilly pasture. It was sketched on Blow's Downs, Dunstable, Beds.

The St. George's Mushroom of Britain is the *mouçeron* of France. The English word "Mushroom" is derived from the French word, *mouçeron*, which is applied on the Continent to Agaricus gambosus, because it grows in mossy places. When there is an abundant growth of this delicious Agaric, as there often is, it affords a large quantity of delicious fresh food for several weeks in succession. Young and dry examples should be selected for the table; the older ones are liable to become grub-eaten. The mycelium, or spawn, of the fungus diffuses a powerful odour when the ground is disturbed, and this odour has a great attraction for moles, who burrow and throw up their hills in the exact line of the Fairy Ring. A misinterpretation of this fact has led some observers to assert that Fairy Rings grow over the tunnels made by moles.

The following favourable opinions, taken from many others of the same class, have been expressed in regard to the merits of Agaricus gambosus:—

"Deliciosus." *Fries.*

"It is a fungus that a person cannot very well make any mistake about. It sometimes attains a large size, is excellent in flavour, and particularly wholesome." *Berkeley.*

"Although this cannot be considered one of the most delicate flavoured of funguses, it is nevertheless welcome, at such an early period of the year when the more desirable kinds are not to be obtained." *Dr. Cooke.*

"Tout ce qui fait l'ornement des festins s'embaume du parfum de ces cryptogames." *Persoon.*

"When quickly grown after the rains of early spring, and before it is attacked by grubs, Agaricus gambosus is certainly an excellent Agaric. It has a very delicate flavour, and is very light and wholesome. When gathered in dry weather it is more firm in texture, and not so good in flavour. The most savoury fungus with which I am acquainted, ... and which is justly considered over almost the whole continent of Europe, as the *ne plus ultra* of culinary *friandise*. . . . The *prunulus* (=gambosus) is much prized in the Roman market, where it easily fetches, when fresh, 30 baiocchi, *i.e.*, 15 francs per pound; a large sum for any luxury in Rome. It is sent in little baskets as presents to patrons, fees to medical men, and bribes to Roman lawyers." *Dr. Badham.*

"This rare and delicious Agaric, the *mouçeron* of

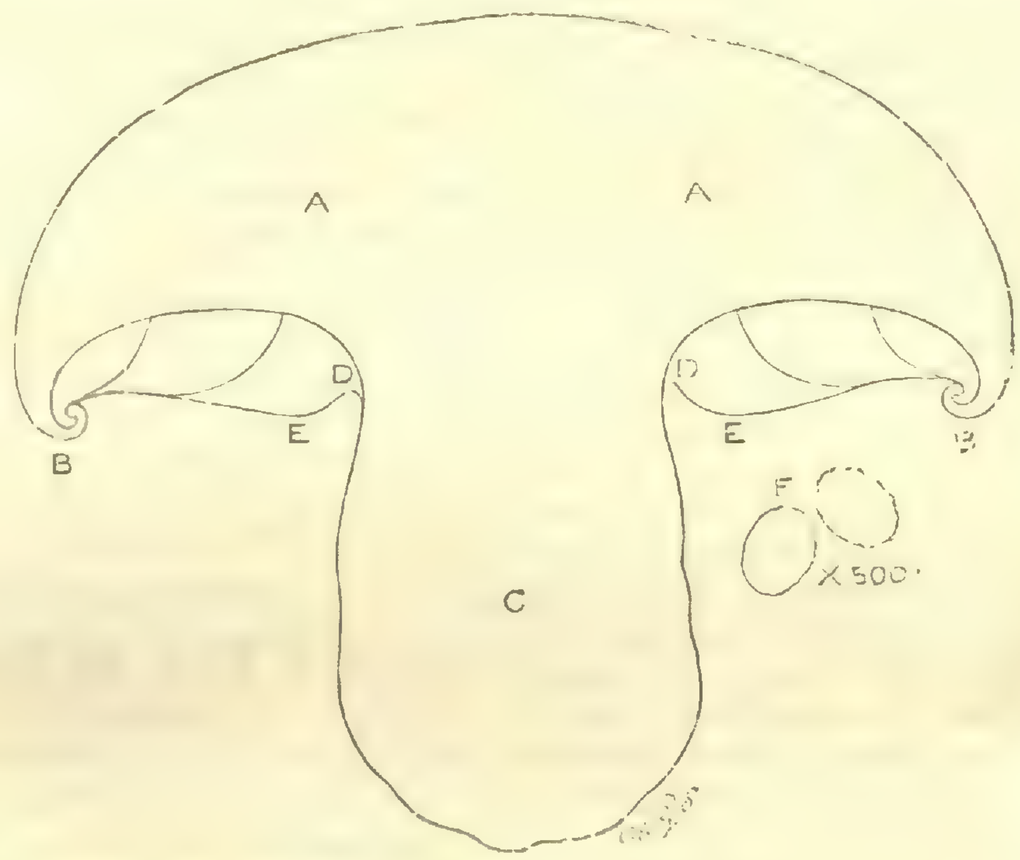

Fig. 103.—St. George's mushroom: section. (see references in text.)

Bulliard, and the Agaricus prunulus of other authors, abounds on the hills above the valley of Stafora, near Bobbio, where it is called *Spinaroli*, and is in great request; the country people eat it fresh in a variety of ways, or they dry and sell it from 12 to 16 francs a pound." *Letter from Professor Balbi to Persoon.*

"Ces mousserons ont une chaire blanche, epaisse, ferme, d'un gout, et d'un parfum délicieux. On les conserve desséchés, et il s'en consomme à Paris une assez grande quantité sous le nom *mousserons de Province.* On les appelle aussi *mousserons blancs, champignons muscats.*" *Roques.*

The following are methods of cooking Agaricus gambosus:—

"The best mode of cooking Agaricus gambosus is either to mince or fricasee it with any sort of meat, or in a *vol-au-vent*, the flavour of which it greatly improves; or simply prepared with salt, pepper, and a small piece of bacon, lard, or butter, to prevent burning, it constitutes of itself an excellent dish." *Dr. Badham.*

"*Breakfast Agaric.*—Place some fresh-made toast, nicely divided, on a dish, and put the Agarics upon it; pepper, salt, and put a small piece of butter on each; then pour on each one a teaspoonful of milk or cream, and add a single Clove to the whole dish. Place a bell-glass (or inverted basin) over the whole, bake twenty minutes, and serve up without removing the glass until it comes to the table, so as to preserve the heat and the aroma, which, on lifting up the cover, will be diffused through the room. It may be broiled, or stewed, or baked. It dries very readily when divided into pieces, and retains most of its excellence. A few pieces added to soups, gravies, or made dishes give a delicious flavour." *Dr. Bull, of Hereford.*

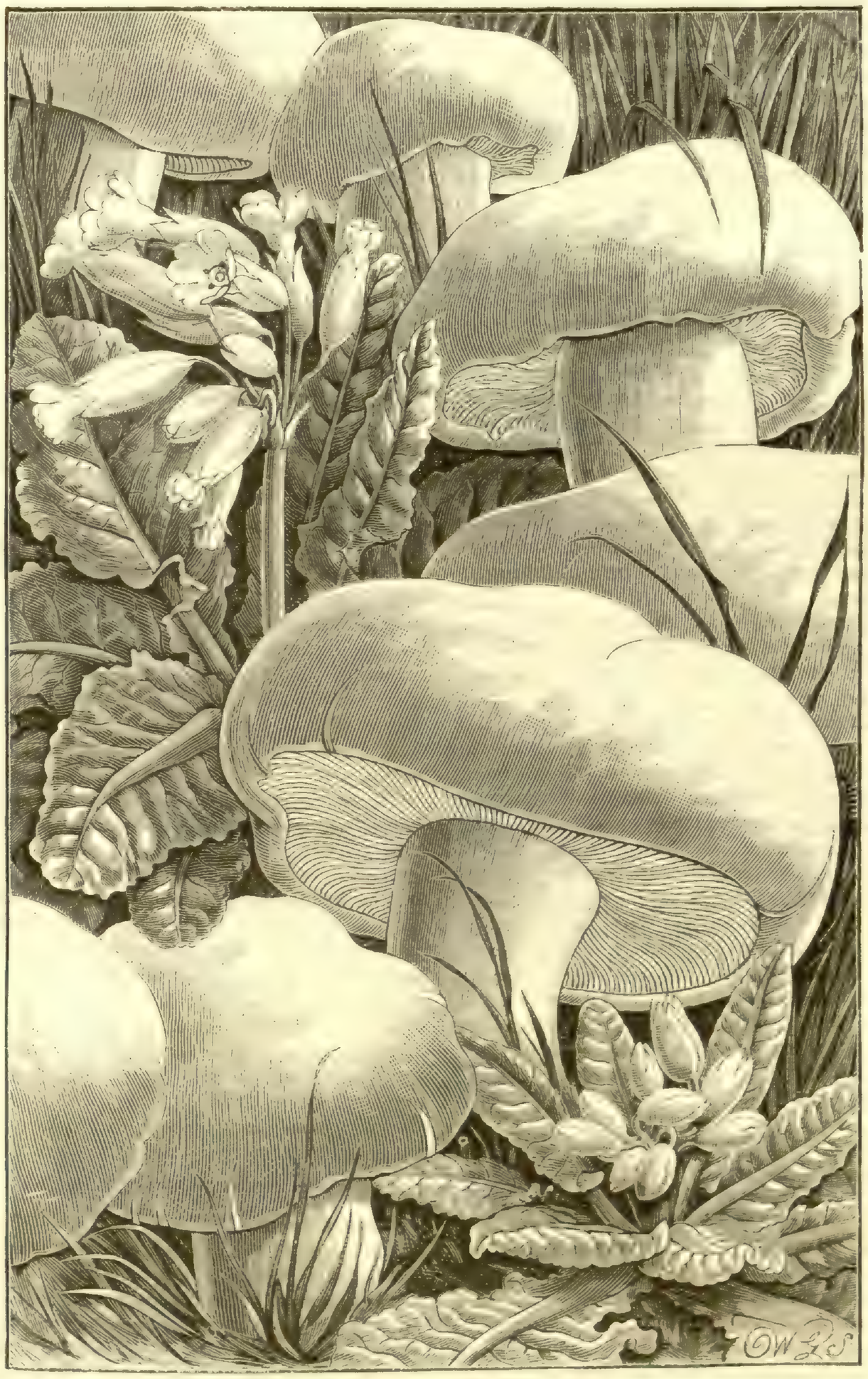

Fig. 104.—St. George's mushroom, Agaricus gambosus. (see p. 544.)

It only remains to be said that by an unfortunate misapprehension Dr. Badham has described Agaricus gambosus under the name of A. prunulus—an esculent, but totally different Agaric. He has also made "confusion worse confounded" by styling A. exquisitus the "St. George's Agaric." A. exquisitus is no other than our old friend the "Horse Mushroom," A. arvensis. Slips like these have a deterrent effect on mycological neophytes.

I have seen Agaricus personatus, an edible fungus allied to A. gambosus, growing in the gambosus rings in autumn; in other words, gambosus and personatus sometimes "consort" together, and have a ring in common, with a mole as an erratic lodger below. Sometimes they have two or three moles. *Worthington G. Smith, Dunstable.*

Orchid Notes and Gleanings.

Cœlogyne ocellata maxima.

A fine specimen of the true form of this fine Orchid is in bloom in Messrs. James Veitch & Son's nursery at Chelsea. Its flowers, which are quite twice as large as those of the type, are pure white, the broad labellum having two blotches of yellow bordered with orange. Not the least of its charms is its delightful fragrance, which pervades the house in which the plant is growing.

Vanda Parishii var. Marriottiana.

This fine plant, like the original V. Parishii, has the habit of growth of a very stout Phalænopsis; its flowers, however, only resemble the ordinary V. Parishii in shape and in their wax-like texture, and not in the greenish-white or brown colour of its flowers. The fine example of V. Parishii Marriottiana is in flower with Messrs. James Veitch & Son, the flowers being almost wholly of that bright rosy-mauve tint familiar to us in Phalænopsis Luddemanniana. The plant is a very free grower and profuse bloomer when once established. *J. O'B.*

Orchids at Moat Lodge, Beckenham.

In the neat little collection of W. B. Lemon, Esq., and under the care of Mr. H. Adams, the gardener, there is a good display of Orchid bloom on the stout healthy plants in both cold and warm houses. In the Odontoglossum-house some varieties of O. Alexandræ, with massive broad-petalled flowers of the highest excellence, are in bloom, and with them some good bright Masdevallias, O. Andersonianum, O. triumphans, O. Halli, O. Cervantesi, O. C. decorum, and bright scarlet Sophronitis. In this cool-house the plants seem especially to like the ornamental Fern rockery and basin at the end. In the intermediate-house the Dendrobium Wardianum and other Dendrobes are fine. Oncidium sarcodes, O. Brunleesianum, and other Oncidiums very showily in bloom, and good masses of Pilumna nobilis, Comparettia falcata, and various other good and rare Orchids, very well bloomed. The Phalænopsis-house, in which are many warm-house Cypripediums in flower, has a good show of P. Stuartiana, P. amabilis, and P. Schilleriana, on very healthy and well-grown plants.

Elmstead Grange, Chislehurst.

In these gardens (belonging to J. Scott, Esq.), there is always something striking and noteworthy to be seen, especially Orchids. Saccolabiums and Vandas are very clean, healthy, and clothed with foliage down to the pots, Aërides Lobbii is throwing up fine spikes. On the roof of the warmest house there is trained a fine plant of Renanthera coccinea with growths some 12 or 14 feet in length. The cool-house contains some very fine Odontoglossums in flower. Among them was noticed a remarkably fine variety of O. Pescatorei, which any Orchid grower journeying in that direction ought to take the opportunity of seeing. It is of handsome shape, very large, the petals actually overlapping the sepals,; there are nineteen flowers on the spike. Other plants in flower consist of O. crispum, O. Cervantesi and its variety decorum; O. triumphans, O. cirrosum, with fifty flowers on a spike; O. Uro-Skinneri, O. gloriosum, O. Rossi majus erubescens, Sophronites grandiflora, Masdevallia ignea, fine specimen plants; and several forms of well flowered Cypripediums. The

Orchids generally, as well as the other departments of the garden, reflect great credit on Mr. Blackburn, the gardener. *W. R., Chislehurst.*

CAMELLIAS AT CHISWICK HOUSE.

The Camellia-house at Chiswick House, where the Marquis of Bute dwells, has contained in its time one of the leading collections of these beautiful shrubs, and even now the collection is not one whit the poorer—it has simply remained as it was, so that a visit to it seems to carry you back many years. There we find several fine plants of the old C. reticulata, than which none are more effective or more gay. There is a great charm in this plant, and however fine others may be, there are few to beat it yet. There is a beautiful red colour to be found in C. imbricata, but, alas! the flowers are no sooner out than they fall—a remark which does not apply to the delicate C. fimbriata, a white variety with fimbriated petals, for we have seen flowers of this variety endure a considerable time; C. nobilissima is also a good white, and is especially acceptable on account of its earliness; its companion in red clothes is Woodsii, which Mr. May, the gardener, says is the earliest of all the reds. Of a totally different type is Anemoneflora, with its Anemone-like flowers, but it is well known and needs no praise of ours.

Those who do not like very stiff flowers nor yet flowers that are not very much the contrary, should have C. atro-rubens, a rich crimson-coloured fine flower. C. picturata is not quite so old a variety as the foregoing, but it deserves a notice, as it is a desirable acquisition, this mixture of white and red; C. Lombardi is also a good form, and is one of the best pink Camellias which we have. Lady Grafton, a rich red, was pointed out as being of great value when it was wanted to have a Camellia which would travel very well, and this, according to Mr. May, is the best on that point. The flowers are of fine substance, and when they do fall, come off in one piece and can be used with great effect and to much advantage on a tray of moss, &c. But as far as colour goes, C. Monarch is a striking variety, with its flowers of very deep red, but which are at the same time very bright, and produce a telling result. The white alba plena is represented by several good trees; this variety is an old one, but it is doubtful whether it is to be beaten; it still holds its own against all rivals. C. elegans, a very fine palish red, and C. Chandleri elegans, salmon-red, are favourites everywhere also, as well as at Chiswick House. We must just name one more variety—it is franco-frutens, deep red, which has the petals in the centre rolled so tightly together, like the heart of a Cabbage, but it is not exactly like the heart of that vegetable, but that matters not—it has a heart—has a peculiar appearance. The above is a selection of the best at Chiswick House, where, in a very long building, devoted entirely to Camellias, a very worthy display is made each year.

THE KITCHEN GARDEN.

Cauliflowers.—Continue to make successional plantings of Early London and Walcheren from plants raised in autumn, also of Veitch's Autumn Giant, raised at the same date. Spring-sown ones will also need attention, and should by this time be large enough to prick out, either into cold frames or on sheltered borders outside, afterwards to be carefully attended to in the way of shading, watering, &c. A good batch of Autumn Giant should be grown from this sowing, for use in early autumn, and as a succession to the earlier planted ones. For the next month or two a somewhat cooler situation should if possible be selected for growing Cauliflowers, especially so for the Early London type; and in all cases the soil must be enriched with good farmyard manure; if planted in trenches, as for Celery, so much the better. In transplanting care must be taken to give the plants as little check as possible by lifting carefully, and with as much soil attached as is practicable. Planting should be done with a trowel, the plants should be made firm in the soil, and receive a thorough soaking of water afterwards; a liberal watering should likewise be administered to the nursery beds before removal.

Turnips.—Similar precautions as regards situation will also be advisable for these sowings for a time. To procure mild tender roots sow in drills from 15 to 18 inches asunder on firm ground; small frequent sowings are the best to maintain a regular supply of usable Turnips during the hot summer months. To prevent and guard against the attacks of "fly" a dusting of quicklime or soot should be given at the time of sowing the seed and repeated when the young plants show above ground. Thinning out must be attended to at an early stage and before they become drawn and weakly, singling them at first, and afterwards finally to a distance of from 6 to 8 inches apart in the rows.

Potatos.—Early planted sorts which are showing above ground should have the hoe passed through the rows and a little soil drawn over the tops to prevent them being nipped by frost, the final earthing-up being deferred for a few days later. Some light protecting material, such as bracken or straw litter, should also be kept in reserve for sprinkling over the tops in the event of frost.

Main Crops.—Parsnips, Onions, &c., should be lightly hoed between the drills when well above ground. Growing crops of all kinds would also be much benefited by this operation, which should be repeated after storms of rain and at intervals throughout the season.

French Beans and Scarlet Runners.—Make successional sowings of the former, in light rich soil, in a warm situation; flattish shallow drills are the best for planting in, the seed from 2 to 3 inches apart in double rows, a space of 2½ to 3 feet being allowed betwixt the drills, according to the height and habit of the variety grown; Sion House, Osborn's Forcing, Ne Plus Ultra, and Canadian Wonder are all good, and may be sown in the order named, for succession. A few rows of Scarlet Runners may be planted if desired, but the principal sowing had better be deferred until a few weeks later. If the site they are to occupy has been trenched and manured no further preparation will be necessary, but where this is not the case, trenches should be thrown out, standing 8 feet asunder 1 foot deep and 18 inches wide, a layer of some light rich compost, being incorporated with the soil beneath, afterwards refilling the trench to the required depth in readiness for planting.

Pits and Frames.

Tomatos.—These plants should be encouraged to cover the space allotted them, by removing the flowers for a time, and until the plants are well established, after which lateral shoots should be stopped one joint above the flowerspikes, surplus shoots being entirely removed. Plenty of heat and moisture should be afforded during the growing stage, and up to the time the plants come into bloom, when a drier and more buoyant temperature should be indulged in.

Potatos that are maturing their crops will require little if any water; the lights should be opened daily, and closed whilst the air is dry and warm; others a stage later, and swelling their tubers, will need a more liberal treatment in that respect. Frames being cleared of Potatos could with advantage be planted with French Beans, or utilised for growing on the first crop of Celery, &c.

General Work.

Sow the remainder of the late Broccolis, Asparagus, Kale, Cauliflower, and Savoys, also Carrots, Spinach, Salsafy, and Scorzonera, and a little of Beetroot. Attend to freshly planted-out subjects, such as Cauliflower, Lettuce, and the like, by supplying them with copious waterings, which should be given during the early part of the day, to allow of the foliage becoming dry before nightfall. *John Austen, Witley Court.*

FLORISTS' FLOWERS.

THE AMARYLLIS.

A raiser of seedling Amaryllids myself, I was much interested in reading Mr. Smythe's remarks at p. 457. It is not generally known that the plant grown under the name of A. reticulata is really Hippeastrum reticulatum striatifolium. H. reticulatum, introduced in 1777, and figured in *Bot. Mag.*, t. 657, has green leaves, the flowers netted-veined. The variety with the broad white line in the leaf was introduced and figured later (*Bot. Mag.*, t. 2113). The point most interesting to me is contained in the remark that good seeds could not be obtained from the hybrids: this is my own experience. The hybrids obtained by crossing H. Leopoldi with varieties of another distinct species will not produce good seeds, nor will the crosses between H. pardinum and H. pulcherrimum do so, although we get good seed-pods, which continue to swell for a period nearly as long as the pods filled with good seeds. I cannot get them to seed by using their own pollen on the stigma, Some varieties produce seeds easily enough, others you may try, try again, and see nothing but failures. These are invariably found amongst the cross-bred varieties. I cannot, for instance, get seeds from the variety John Heal, which is clearly a cross from H. Leopoldi, nor from Chelsoni, a H. pardinum cross. I am trying this year a dozen flowers of John Heal, both by crossing and with its own pollen. We are also giving the plants more heat and sunshine by day, and a rather lower temperature at night. I believe the experience of other growers is similar to mine. When the seeds are of good quality the rest is easy enough. Sow about fifty seeds in a 5-inch pot, place in a good bottom-heat, and they will vegetate in two or three weeks.

In a month or so from the time of sowing prick the young plants out in 5-inch pots, a dozen in a pot; plunge again in bottom-heat, and they will form strong plants by the end of the season. It is very important that the plants be grown well, as it makes all the difference as to the time of flowering. A very large proportion of the plants have to be thrown away when they have flowered, therefore it is desirable to get them into flower as soon as possible. I have obtained flowers in nineteen months, but many plants will take a year longer, and some will not flower until the third year. They get very little rest with us until they do flower; the first winter they are kept continually in a growing state, and the second winter nearly so. *J. Douglas.*

The Yellow Picotee.

History repeats itself in the raising of flowers as in other things, Some remarks written by Dr. Horner and published in the *Midland Florist* nearly forty years ago, might have been written this year: —"In the more northern counties a taste for the yellow Picotee still lingers, and many there be that lament the want of good sorts. There is demand, but not supply. Because, then, of the countless combination and diversity, both in the ground colour and the lacing of which it is capable—because of its yet existing imperfections—let the effort, too long delayed, be in earnest commenced to raise this flower to its true position—the chiefest of the Dianthus class, and to constitute it the most perfect, as it is the most beautiful and attractive."

At present also, the demand for good varieties of yellow Picotees exceeds the supply. There are yellow self Carnations in moderate plenty; they are also more vigorous in growth than the type of edged flowers represented by Princess Beatrice, Ne Plus Ultra, &c. Still, the most vigororous of the yellow Picotees is Prince of Orange (Perkins); this variety I bought with a variety named Ascot Yellow (Standish), some twenty years ago, but, notwithstanding the greatest

care, we lost Mr. Standish's fine variety in four or five years, whereas Prince of Orange is quite as vigorous as ever it was. There is still a good field for the hybridist with Prince of Orange as a pollen parent or a seed bearer. The variety Pride of Penshurst I thought very highly of when it was introduced, but on more intimate acquaintance it was found to lack the most essential property of a Carnation, viz., perfume. In the best interests of the family, I felt it right to keep it out of our collection, because as a rule, bad qualities are as likely to be perpetuated as good ones, or perhaps more so. The Continental varieties of Picotees are a set of impostors; they have none of the qualities so much desired, that is, smooth well formed petals, clear yellow with few spots or bars, and a well defined edge of red or rose colour. The only three in trade that can be recommended to use as seed or pollen bearers are the varieties I have already named. All the yellow varieties flower much later than the white flowered type, and advantage may be taken of this trait in their character to keep up a succession of bloom for two months or more. We had two months of them last season, by placing a few plants, of each variety in a warm house in March, and by keeping some of them out-of-doors until the flowers were about to open. If it is intended to grow yellow Picotees in the open borders, I would advise that they should not be planted out until March. The ground ought to be previously prepared by trenching it, and by giving it a dressing of well decomposed stable manure. The plants which have been kept in cold frames during the winter, should be carefully planted without injuring the roots. I pot the whole of our stock from layers about the first week in October—at the time the varieties of the ordinary type are planted. They are placed in a cold frame, the lights of which are kept rather close until young rootlets are formed. When they are well established air is admitted freely. This season the weather was very warm at potting time, and the plants have already rooted out to the sides of the pots. Some seasons cold frosty weather sets in early in October and checks the growth of the plants very much. For the yellow type of Carnations and Picotees a little fibrous peat added to the potting soil is very beneficial. My own seedlings exhibited this year have received six First-class Certificates from three different societies. I do not intend to say anything more about them, but will leave them to speak for themselves. They are very vigorous in growth, and each variety has been increased to the extent of from fifty to sixy plants, and the seeds were not sown until April, 1884. The terra cotta ground colour will be quite a distinct type; one variety is buff marked with scarlet. I intend to try them out-of-doors when the stock is plentiful. Many growers have written to me from the North of England to say that the Carnation and Picotee succeeds better planted out than it does in pots. *J. Douglas.*

Named Gold-laced Polyanthus.

The past winter, if this term may now safely be employed, has proved very destructive to named gold-laced Polyanthuses; plants that in November were in the pride of vigour have gone down before the hard frost as if attacked by an epidemic. From all parts of the country where these plants are grown for show purposes comes the same intelligence. Mr. S. Barlow writes from Stakehill House:—"The Polyanthuses in my principal frame are nearly all dead; Lancer, Cox's Prince Regent, and Cheshire Favourite—not an exhibition plant among them." I had in December as fine a lot of plants as I could desire to look upon, and when the frost came they were in a cold frame, were fairly dry, and protected from it as much as possible, When the thaw came they appeared none the worse. but in a few days all the largest plants almost without an exception rotted away just at the collar, leaving stumps with plenty of fibrous roots. It is a great disappointment, but it has to be borne. For weeks after the thaw this district was enveloped in London fogs; perhaps they had something to do with the destruction that has been wrought. *R. Dean, Ealing, W.*

A DECADE OF NEW ADIANTUMS.

(*Concluded from p.* 448.)

A. cyclosorum (Moore in *Hort. Veitch*).—Fronds triangular, tripinnate, glabrous, semi-deciduous; pinnæ spreading, those of the mature fronds ovate, narrowly ovate when less developed, stalked, the stalks shorter upwards; pinnules rather large, the upper basal ones overlying the rachis, terminal ones cuneate deeply lobed, intermediate ones dimidiately rhomboid, lobed on the upper margin, the basal ones roundish and lobed at the end, all distinctly pedicellate; veins prominent beneath, dichotomously forked, the veinlets free; sori numerous, large, circular, seated in a very shallow sinus at the tips of the marginal lobes, and covered by glabrous indusia of the same form; stipes and rachides glossy ebeneous. Habitat Ecuador.

This well-marked species was introduced by Mr. Pearce in 1873 to the collection of Messrs. Veitch & Sons, of Chelsea, and has been a good deal overlooked, so that the record of its original habitat is lost. Other specimens from Ecaudor, sent us by Messrs. J. Backhouse & Son, help to supply the desired information. It is of deciduous or semi-deciduous habit, the fronds dying off either wholly or in part during the winter season. When in its summer dress it is, however, very handsome, being ample in dimensions, bold in character, and of a rich green colour. The fronds are from 1½ to 2 feet in height, and from 10 to 15 inches across, the pinnæ alternate, the lower ones with long, and the upper with gradually shortening stalks, the base only in some stages, and nearly the whole pinna in others, being divided into branches of from 2 to 3 inches in length, the longest bearing ten or a dozen pinnules. The rhomboid pinnules are from 5 to 8 or 9 lines long, according to vigour, and these bear eight or ten large plump marginal sori along the upper side and end, the circular form of which is very conspicuous. It has a stoutish, glossy black stipes, 8 to 10 inches long, and wide-spreading branches, which, when but slightly divided, bear the larger individual pinnules, but which in the more matured state become more compound, though the central pinnules are smaller.

Adiantum Capillus-veneris imbricatum, Hort.—Fronds ovate, densely imbricated, bi-tri-pinnate, evergreen; pinnæ crowded, 2 to 2¼ inches long, 1½ inch wide, bluntly oblong; pinnules large, much overlapping, the lateral ones rhomboid, 9 lines long and 6 lines wide, the terminal ones broadly flabellate, an inch or more in width; the margins deeply lobed and densely frilled, in some fronds fimbriately laciniate; veins as in the type; sori imperfectly developed, elongate oblong, often continuous around the end of the lobes; stipes and rachides glossy ebeneous.

One of the most beautiful forms of our native Maidenhair Fern which have yet appeared, and which was deservedly honoured with the award of a First-class Certificate at one of the meetings of the Royal Horticultural Society. It was raised by Mr. G. Masters, the gardener at High Leigh Hall, Knutsford, who, seeing that it was more compact in habit than any others of a batch of seedlings of A. Capillus-veneris, which he had raised, selected it for more careful cultivation, and has been rewarded by its development into a variety of the very highest degree of merit as a dwarf evergreen greenhouse decorative Fern. The fronds before us are 6 inches long, exclusive of the stipes which is of about the usual proportions, and the breadth at the base where they are widest is 4 inches. These fronds, as those readers will know who saw the plants exhibited at South Kensington, overhang each other in a most graceful manner, which habit, together with the large size of the crowded imbricated pinnules, and their charmingly undulated and crispy surface, renders the plant worthy of a place in every collection.

Adiantum Capillus-veneris digitatum, n. var.—Fronds unsymmetrical, but with a tendency to become unequally ovate, dwarfish, smooth, evergreen; pinnæ, as well as the pinnules, unequal in size and irregular in form; the latter very variable in size, and ometimes deformed, the more perfect ones rhomboid with a rounded apex, deeply furcato-lobate, the edges marginate; veins flabellately forked as in the type; sori wanting.

A curious variety of the common Maidenhairs obtained from spores some years since and constantly sterile. The sori are compensated for by the deep cutting of the pinnules, which gives a singular appearance to the polymorphic fronds. The terminal pinnule, where there is one developed, is cuneato-flabellate deeply cut down from the apex, and the lobes thus formed again divided. The lateral pinnules are shortly rhomboid, rounded off at the end and divided like the others into deeply cut, and these again into shallower lobes. The edges of the pinnules are marginate. Our specimens of this form came from Mr. J. O'Brien, of Harrow-on-the-Hill. *From a MS. of the late T. Moore.*

THE FLOWER GARDEN.

The present is the most suitable time to transplant Gynerium argenteum (Pampas-grass); a deep peaty soil is the most suitable, although it will grow well in almost any soil, provided it be well enriched and the situation sheltered and moist, but not shaded. Planted in clumps or as single plants by the sides of walks or carriage-drives it has a noble appearance. The old foliage should be trimmed to allow the young leaves space to develope. A good mulching of manure, or rich soil should be placed over the roots, and copious supplies of weak manure-water poured into the centres will greatly assist old-established plants. In order to have well-developed plumes the plants must be well fed.

Wall Plants.—Wall plants should now be trimmed, and fastened to their allotted spaces. A capital plant for covering a wall is Indigofera floribunda. This is a very striking object in autumn, and is very graceful, with its drooping shoots clothed with light rosy flowers. It is a fairly rapid grower, and will soon cover a wall 12 to 14 feet high. It should have a warm, sheltered situation.

Nymphæas, if they have a place to grow in, soon monopolise the whole of the water surface. They appear to most advantage when they are confined in groups or single plants. It may be therefore necessary to sacrifice part of the plants in order to keep them strong and vigorous. When it is desired to plant, the best way is to tie a few sods together and insert the plant in the centre of the mass, dropping it into the water where it is intended to grow. Where the bottom is too poor to afford nourishment some additional soil should be added.

Ivy on walls may now be trimmed where the foliage has become brown. It will be best to shave the whole of the old foliage off with an old scythe; this will the better allow of getting the whole surfaces well cleansed with the engine. A little petroleum in the water will destroy any red-spider, which is about the only insect which infests Ivy. Where the foliage is in good condition a knife should be used, so as the foliage may not be mutilated.

Bedding Plants.—Push forward the propagation of any bedding plants, where there is any deficiency. Prick out all seedlings as soon as they are fit to handle. Pot on Dahlias and all subtropicals as the pots get filled with roots, and guard against any check, which will certainly destroy the beauty of those plants. Gradually inure all the hardiest sorts of bedding plants to bear full exposure, the more tender sorts should still be retained in heat. *W. M. Baillie, Luton Hoo, Luton.*

Plant Diseases.—Professor Max Cornu is delivering a course of lectures on this subject at the Museum of Natural History, Paris. His lectures, it may be hoped, will ultimately be published, as there are few persons more competent in this matter than the present Director of the Jardin des Plantes.

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APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

TUESDAY,	APR. 26	Royal Horticultural Society: Council, and Scientific, Fruit, Floral, and Narcissus Committees.

SHOWS.

TUESDAY,	APR. 26	National Auricula Society (Southern Section) at South Kensington.
FRIDAY,	APR. 29	Royal Botanical and Horticultural of Manchester.
SATURDAY,	APR. 30—Leek Auricula Society.	

SALES.

MONDAY,	APR. 25	Imported Orchids, at Protheroe & Morris' Rooms.
TUESDAY,	APR. 26	Orchids in Flower, at Protheroe & Morris' Rooms.
WEDNESDAY,	APR. 27	Hardy Plants and Bulbs, Imported and Established Orchids, and 5000 Lilium auratum from Japan, at Stevens' Rooms. Lilies, Roses, &c., at Protheroe & Morris' Rooms.
THURSDAY,	APR. 28	Importations of Orchids from Mr. F. Sander, 5000 Lilium auratum from Japan, &c., at Stevens' Rooms. Disposal of Hans Niemand's Nursery, &c., Birmingham, by Thomas & Bettridge, at 1, Newell Street, Birmingham. The First Portion of the Stock of Orchids of the New Plant and Bulb Company, in Liquidation, at Protheroe & Morris' Rooms.

Shanking in Grapes.

IN spite of all that has been written on the shanking of Grapes, the malady remains as prevalent as ever, and its causes as perplexing to those unfamiliar with plant life. When a diversity of causes is assigned, and a multiplicity of remedies suggested for any disease, we generally come to the conclusion that not much is really known about it, and that its treatment is purely empirical. But this, though true in part, is not so wholly. One man dines on beans, another on bacon, a third combines the two; the food-supplies are different in each case, but the ultimate result—the nutrition of the individual—is the same. Other things being equal, there is no difference in the ultimate results of a dinner eaten by a prince and that partaken of by a peasant. And so when we find our text-books and calendars assigning this, that, and the other cause for shanking, the diversity of alleged causes offers in itself no argument against their validity.

The disease in question is evidently a consequence defective nutrition, and consequent arrest of growth of the berry. Common observation shows that this results from the shrivelling and drying up of the stalk, and that in consequence the flow of nutritive fluids to the berry is stopped. But hitherto we have not been able to get further than this. No one has done more than conjecture how and why the stalks shrivel, and therefore no one as yet has been able to suggest an effectual remedy. The actual shrivelling is occasioned by the conversion of the cells of the stalk into cork. When a cutting is made or a wound inflicted this formation of cork is general. The cell-membranes undergo a chemical and a physical change, the ultimate result of which is the formation of cork, which may be easily detected by appropriate reagents under the microscope even when the quantity is small. It is a layer of cork cells which effects the shedding of the leaves in autumn, which severs the twigs of the Oaks and Arborvitæs, and which liberates the ripened fruit of the Pear or Apple. The layer or sheet of cork-cells descends gradually from above downwards like an iron shutter to a shop window, and cuts off all communication of air or fluid from either side. This same process occurs in the shanking of Grapes—the cells of the stalk become converted into cork, and just as a cork stops the flow of liquid from a bottle so the cork-cells formed in the stalk of the Grape prevent the circulation of air or fluid, and bring about the shrivelling of the stalk. The object of this corky formation is a beneficent one so far as the plant is concerned. It prevents waste of food material; it is an adaptation to circumstances, an endeavour to compensate for injury or loss, a plaster for an open wound. But what we want to know now is what are the causes which lead to and necessitate this cork-formation. But here we are driven to vague generalities. We attribute it to faulty nutrition—to a process of indigestion, in fact, and that is true, but it does not afford any enlightenment as to whether the indigestion is the result of too much, too little, unfitting, or unseasonable food, whether the disorder is merely a functional derangement, or whether it is the result of more serious organic change. From this latter point of view we may say that we, like others, have often suspected the operations of a predatory fungus, but such a parasite has not been seen. A writer in the *Bulletin de l'Association des Anciens Elèves de Vilvorde* shows that in shanking the starchy material, the food in fact, is not present in the dried-up stalks, while it is very abundant in the healthy stalks.

So far all is clear. The food supplies are diminished, then cut off, the berry ceases to grow, and remains sour. But how and why are the food supplies diminished? The writer in question assumes that they are, but he does not attempt to prove that they are so except in the case of the stalk. If he can show that in the leaves or in the bark of a Vine subject to shanking there is a deficiency of food-material the case would be clearer. Assuming, however, that there is a deficiency in the quantity or quality of the food supply that defect may, of course, be readily explained by a variety of causes dependent on imperfect or faulty action of leaf, or root, or both. For the formation of food, that is, starchy material, in the leaves, and its storage in the bark, exposure to sunlight, a certain degree of temperature, and a sufficiency of water are all demanded. If any of these fail the quantity of food formed will be less than it should be, or it will be of inferior quality. Cold cloudy weather therefore reduces the vitality of a plant, while, on the other hand, excess of heat, light, and moisture are equally prejudicial.

Again, it may happen that leaf-action under the influence of light is satisfactory—the formation of nutritive matter (starch) may be sufficient, but the means of conveying it to the growing parts of the plant, where it is most wanted, may be deficient. It will be remembered that starch is solid and not very soluble, and that in order that it may be conveyed from the leaves to the spots where it is required, either for immediate consumption, as in the case of growing organs, or for storage, as in the bark, in seeds, tubers, &c., it must be rendered soluble. This is effected by the conversion of the starch into sugar; the latter being soluble. This conversion necessitates the presence of an adequate water supply from the roots; hence if root action be imperfectly fulfilled, the conversion of the starch into sugar, and the transport of the latter cannot be properly accomplished. A soil too cold or too dry, or one laden with stagnant moisture, may bring about this result. Again, as pointed out by the writer of the article above mentioned, the leaf surface or food-forming area may be disproportionately small as compared with the requirements of the consumer—that is, of the bunches to be nourished. This might happen from too severe pruning, or from want of adequate thinning of the bunches.

Such is the philosophy of shanking, so far as we can at present formulate it. Practically it may be avoided by good management, and in what that good management really consists is obvious from the general principles above laid down. Their successful application depends upon the particular circumstances of each case, and upon the sagacity and experience of the cultivator.

THE LINDLEY LIBRARY.—Owing to the death of Mr. THOMAS MOORE, the number of trustees (other than the official ones connected with the Royal Horticultural Society) had become reduced to two, viz., Dr. HOGG and Dr. MASTERS, the only survivors of the original seven. Under these circumstances it became, in the words of the trust deed, "a moral obligation" to fill up the vacancies. This has accordingly been done, by the election of three new trustees, in the persons of WILLIAM CARRUTHERS, Esq., President of the Linnean Society, Keeper of the Botanical Department, British Museum; GEORGE MAW, Esq., F.L.S., of Kenley, Surrey; and HARRY J. VEITCH, Esq., F.L.S., of Chelsea. The official trustees are the Treasurer and Secretary of the Royal Horticultural Society for the time being. Though connected in a measure with the fortunes of the Royal Horticultural Society, the Library is essentially an independent institution, and is open to the general public as well as to Fellows of the Society, under proper regulations, and under certain conditions books are allowed to be borrowed. The funds at the disposal of the trustees are, unfortunately, too small to allow of much more than the purchase of periodicals, while the room in which it is lodged is so inconvenient of access that the utility of the Library is seriously impeded. In any change of site or other circumstance connected with the Royal Horticultural Society, the question of adequate accommodation for the Library and its proper maintenance must have earnest consideration. In the meantime donations of books or of funds will be thankfully welcomed by the trustees.

THE KEW "BULLETIN."—The April number contains articles on Manilla Hemp (Musa textilis), which yields an excellent fibre, the supply being derived from the Philippine Islands. It may be grown where and in the same way as the common Banana, and its cultivation should therefore be taken into consideration in our tropical colonies, but only where labour is cheap and abundant, and where the best methods of preparation can be carried out. Mr. MORRIS gives details as to the best method of culture and preparation, but, on the whole, the culture does not seem to be very promising, although the price per ton of fibre is as high as £36, or even £45—two-thirds more than the price of ordinary Plantain fibre, which also receives attention in this *Bulletin*. Plantain-fibre might be utilised for paper-making.

The fibre of the Pine-apple plant is stated to have a future of considerable importance before it.

Cinerarias at Farnham Royal.—The show of Cinerarias which Mr. James has on view just now at Woodside, near Slough, is very remarkable. It is seldom that some 2500 well-grown plants may be seen blooming at once. The Woodside strain has at no time been excelled for quality, substance, form, or habit; and apart from all trade considerations it has been a labour of love to promote in it all those elements which help to bring the flowers near to perfection. Selection, however, is the chief cause of this progress, for fertilisation seems to be done by the bees. Plenty of pollen and plenty of bees, with fine sunny days, naturally lead to seed production, and that is, after all, the great object in view; but those who love beautiful flowers only, and specially those adapted for greenhouse decoration, would hardly concern themselves about seed whilst such a brilliant show of bloom was before them to admire. It has been urged with reference to Mr. James' Cinerarias, that the strain is too much restricted to self colours. That has in the past been largely true, but still what flowers, what breadth of petal and substance and what colouring! However, criticisms, if worth anything, must be met, and to that end some foreign blood in the shape of a large flowered and very light coloured strain has been introduced with happy results, as fine light flowers are now plentiful. Very many indeed, whilst of the finest form, are fully 3 inches across, and produced in massive heads. As it is preferred to have seed saved in colours the many plants have been grouped, and thus throughout the houses are seen blocks of heavy purple, bright purple, dark blue, light blue, crimson, red, magenta, rosy-lake, pure white, and innumerable edged flowers, blue, purple, red, crimson, and more or less weighted with colour. Some of these latter selections seem admirably suited for market work, the flowers being large, very effective, fine form, and produced in massive heads. A marked novelty undoubtedly is an edged kind, the ground pure white, with a clearly defined purple Picotee lacing; but still more striking is a really striped or flaked selection,

Fig. 105.—Agave (euagave) morrisii. (see p. 543.)

the ground white and the colouring bright red. This, though not yet perfect, bids fair to be the progenitor of a beautiful striped strain later on, the flowers which open on the side shoots in some cases being as clearly marked as are those of the striped French Marigold. Although named plants of Cinerarias have had their day it is evident that seed strains are still not only fine, but much in advance of anything which has preceded it.

M. Bergman.—A proposal has been made by some friends of M. Bergman to celebrate in an appropriate manner the fiftieth anniversary of his entry upon the charge of the gardens of Baron Rothschild at Ferrières en Brie, and to present this well known and highly esteemed gardener with some memorial of the event.

The "Botanical Magazine."—The April number of this periodical contains coloured figures of the following plants:—

Clavija Ernesti, t. 6928.—The Clavijas are tropical trees or shrubs, remarkable for the boldness of their foliage. The reddish flowers are individually small but borne in loose axillary racemes. The present species is a native of Caraccas.

Heuchera sanguinea, t. 6929.—The Heucheras are, as a whole, more remarkable for their foliage than for their flowers, but the present one, with its panicled cymes of blood-red flowers, is very attractive. It is a hardy perennial, native of New Mexico and Arizona, from whence it was introduced to Kew by Mr. Ware, of Tottenham.

Chrysanthemum multicaule, t. 6930.—A pretty species greatly resembling the common C. segetum.

Hedysarum microcalyx, t. 6931.—A near ally of the common Sainfoin, but stated to be a far more beautiful species. It is a native of the Western Himalaya, and forms a shrub. Probably it would be valuable as a forage plant.

Momordica involucrata, t. 6932.—An elegant climbing plant, native of Natal, with small Vine-like leaves, the divisions of which run out into fine hair-like points. The male flowers are companulate, nearly 2 inches across, pale yellow, five-parted, each of the three inner divisions with a black blotch at the base. The fruits are pendulous from long slender stalks. Each fruit is about 2 inches long, bright scarlet, oblong, sparingly spiny, and pointed at both ends. In summer it forms an attractive feature of the Water Lily-house at Kew.

Glasgow Botanic Garden.—We have on previous occasions alluded to this fine establishment, and given illustrations of its conservatories. This garden has done excellent service to botany as well as a pleasure-ground, and its history is inseparably connected with that of Sir William Hooker, the Dr. Hooker of that day, who spread the renown of the garden throughout all lands. The finances of the garden have never been satisfactory, and now it appears that the institution, after seventy years existence, is indebted to the corporation of the city for no smaller a sum than £46,000. The conservatories and collections are still excellent, and if retained and developed by the Glasgow corporation on an adequate scale they may continue to render great services to botany. Glasgow is so specially interested in economic products from the vegetable kingdom, that for this cause alone the gardens should be maintained.

Exhibition Fixtures.—A flower show in aid of the local hospital will take place in the Victoria Park, Portsea, on July 5, 6, and 7. The Boston Horticultural Show will be held on July 5. The annual exhibition of the Portsmouth Chrysanthemum Society is fixed for November 10 and 11, and that of the Reading Chrysanthemum Society on November 18.

"A Beekeeper's Experience in the East."—Under this title Mr. Blow, of Welwyn, has given a narrative of his journeys in Cyprus, Syria, Carniola, and Northern Italy. His experience in collecting stocks and in observing the bee-establishments of the countries he visited, are told simply and with no pretence to literary skill, but they are none the less interesting. Mr. Blow considers the Carniolan bees as the best race, and as natives of a cold, windy, and wet country, adapted to our own climate. At the same time they are quiet and easy to handle, while Cyprians are spiteful and unmanageable.

The "Orchid Album."—The plants figured in the April number are:—

Phalænopsis grandiflora, t. 277.—A fine example from the collection of C. J. Partington, Esq.

Cypripedium insigne punctatum violaceum, t. 278.—A form in which the dorsal sepal is thickly studded with purple spots.

Oncidium Papilio majus, t. 279.—A fine variety, grown by C. Ingram, Esq., Elstead House, New Godalming. Mr. Williams counsels the plant to be grown in the Cattleya-house near the glass, exposed to full sunshine, and with a full supply of moisture and very little soil (fibrous peat).

Odontoglossum Pollettianum, hort., t. 280.—A supposed hybrid between O. gloriosum and O. crispum. The flowers are in racemes, each about 3 inches across, flat, the segments forming a five-rayed star. In colour they are white, flushed with rose, and with large irregularly-disposed purplish spots.

American Larkspurs.—The March number of the *Botanical Gazette* contains an article by Professor Asa Gray on the species of Delphinium, native to the United States.

Cremona Violins.—Slowly but surely correct scientific information is penetrating the "masses." Of this the *Pall Mall Gazette* lately afforded an illustration in the shape of an article on the botany of Cremona violins, and to which the name of Mr. Walter Gardiner is attached. He shows that the back of a violin is made of Spruce or white deal (Picea excelsa), and he goes on to show how the anatomical construction of the wood and the absence of ducts may have been the determining causes for the selection of this wood; a more porous wood would be pervious to sound, and instead of vibrating as a whole in response to the vibrations set up in the string it would rather allow the sound waves to pass mechanically through its structure. The oil, Tung oil, used in the manufacture of violins, is supposed to be that derived from the seeds of Aleurites triloba. Mr. Gardiner follows the fashion of employing the useless neologism tracheids for what for popular purposes might be called wood-cells.

Paralysis of the Sense of Taste.—In a recent number of *Nature* Mr. Thiselton Dyer alludes to a leaf sent to him by Sir Mountstuart Grant Duff from Madras, and which, when chewed, has the singular faculty of abolishing the sense of taste, so far as sugar is concerned. The leaf is that of an Asclepiad, Gymnema sylvestre, and it has been made the subject of chemical analysis by Mr. David Hooper. It appears that the late Mr. Edgeworth was the first to discover the singular property which the leaf has of abolishing the taste of sugar and of bitter substances. Sugar taken after the leaves tastes like so much sand, and quinine like chalk. The taste of other substances, salines, astringents, aromatics, and acids, is not affected. The root of the plant is one of the many substances used in snake bite.

Gentians.—Professor Huxley, when resident last autumn at Arolla, in the neighbourhood of the Rhone valley, 6400 feet above the sea-level, became interested in the Gentians growing abundantly there. The result has been a study of the group, and the reading of an important paper thereon at the Linnean Society (April 7). Taking the flower as a basis, he divides the Gentianeæ into two great series, each of which is characterised by a peculiar disposition of the nectaries, and a gradation of forms of the corolla from the deeply cleft rotate or stellate condition of G. lutea, &c., through the campanulate to the extreme infundibulate kind, G. amarella, &c. One series he terms—1. Perimelitæ, in which the nectarial cells are aggregated in a single or double patch; the other series, 2, Mesomelitæ, is distinguished by a zone of secreting cells encircling the ovary. He assumes on morphological grounds a hypothetical ancestral flower or Ur-Gentian-Haplanthe. Derivative from this the Perimelitous series comprises four subsidiary groups, to wit:—1, Actinanthe; 2, Keratanthe; 3, Lophanthe; and 4, Stephananthe. Similarly the Mesomelitous series comprise:—1, Asteranthe; 2, Linnanthe; 3, Lissanthe; and 4, Ptychanthe. The one series appears to bear a certain progressive relation in its evolution to the leading morphological modifications of the opposite series. As regards their geographical distribution the Gentianeæ are widespread, and representatives flourish from the marshy level of the sea up mountains to the limits of the snow line. Though fossil remains of Gentians are not known, Professor Huxley nevertheless believes that in Pliocene and Miocene times their distribution may have been substantially similar to what is now extant. He further throws out the hint that could the age of the first appearance of flies and butterflies provided with long proboscides be indicated we should then be in a position to guess approximately when specialisation of the types of the Gentians and their ultimate distribution occurred.

A New Vegetable.—At one of the recent meetings of the National Horticultural Society of France M. Chappellier exhibited tubers of Stachys affinis, a newly introduced esculent from Japan, which is of the easiest possible cultivation, and which may be planted at any season of the year. Two or three tufts yield sufficient tubers for a dish. They contain no starch, but instead of it the substance known as inulin, the main constituent of Jerusalem Artichokes. It is to be hoped we may soon have an opportunity of testing the value of the plant here, for if all be true that is said concerning it, it will be valuable for cottagers.

Money Telegrams.—Mr. Wills has addressed to the Postmaster-General a letter advocating the adoption of a system whereby sums of money could be made payable on receipt of telegram, from any office in which the required sum had previously been deposited. The immense convenience of such a system needs no argument, and no doubt it could be worked at a profit to the Post Office.

Effects of the Snow on Plantations of Scotch Fir.—It is only those who have had an opportunity of personally inspecting the destructive effects of the late snowstorms in the extensive Fir plantations in North Hampshire that can realise anything like the extent of damage done. Branches of Scotch Fir lie about in heaps, and many fine specimens are almost entirely denuded of their limbs. Some of the plantations have the appearance of having been devastated by artillery, so mangled are the trunks of not a few of the trees; instances can be witnessed of tall specimens completely overturned. The effects are general, and not merely isolated; the tourist can travel for miles and see the work of destruction on every hand. Roadsides are disfigured by the *débris*, but they will doubtless lie there until they decay.

Boston Horticultural Society.—The annual exhibition of this Society is fixed for July 5, and the usual show of horses, poultry, &c., will be combined with it.

Rates.—Next to taxes, rates form the most objectionable of imposts in the estimation of many folk. Those who want to appeal against them will find instructions in a little book published by Effingham, Wilson & Co., and prepared by Andrew Laurie, Esq. The present work applies to the extra-metropolitan districts only, the rating of the metropolis itself being regulated by a special statute. The value of this little treatise to nur-

serymen and florists would be greatly enhanced if in a future edition a section were devoted to the questions of rating affecting them. The author's attention should be called to the Worthing case lately decided. The omission is the more remarkable in that tithes, woods, and sporting rights are included.

"Chambre Syndicale" of Ghent.—At a meeting held on April 11, the following awards were made:—

First-class Certificates.—To Mr. J. Hye-Leysen, for Cypripedium Hyeanum, Oncidium Papilio giganteum, and for Odontoglossum triumphans var.; to Mr. Ad. D'Haene, for Vanda Denisoniana; to Mr. B. Spae, for Anthurium Andreanum maximum superbum; to Mr. Jean De Kneef, for Azalea President Comte O. de Kerchove; to Mr. Edouard Pynaert, for Adiantum fragrantissimum; to Mr. L. Van Houtte, for Clivea miniata Louis Van Houtte; to Mr. L. De Smet-Duvivier, for Odontoglossum luteo-purpureum magnificum; to Messrs. Vervaet & Co., for Odontoglossum hybrid; to Mr. Moens, for Cypripedium Io.

Floral Certificate.—To Mr. De Smet-Duvivier, for Odontoglossum luteo-purpureum.

Commendations.—To Messrs. Vervaet & Co., for Cypripedium hirsutissimum, and also for Odontoglossum luteo-purpureum, var.; to Mr. L. De Smet-Duvivier, for Cattleya Trianæ splendens; to Mr. Jules Hye-Leysen, for Odontoglossum odoratum; to Mr. Ed. Pynaert, for Clivea miniata gandavensis; to Mr. Moens, for Cypripedium ciliolare; to Messrs. Vervaet & Co., for Odontoglossum Alexandræ; to Mr. Paul de Hemptinne, for Phalænopsis Stuartiana.

Studies in Microscopical Science.—This excellent periodical, devoted to the illustration and elucidation of the microscopic structures of plants and animals, contains in the present part illustrations of the growing points of stems, the process of defoliation, the characteristics of diseased kidneys, &c. Each part is accompanied by a microscopic preparation. The Editor is Mr. Arthur Cole, 171, Ladbrooke Grove Road, Notting Hill. We heartily commend this work to those who desire to make themselves acquainted with vegetable structures.

Kitchen Garden Calendar.—Mr. Messer, of Quality Court, Chancery Lane, has issued in the form of a card, to be hung up in the garden office, an ingenious remembrancer of the times, seasons, and methods of planting or sowing the ordinary vegetables. It is in the form of a table, divided by vertical and horizontal lines. The left-hand column contains, alphabetically from above downwards, the names of the vegetables, each of which occupies a horizontal space; then follow in order spaces for the several months, subdivided into minor spaces for the weeks, and to the right a column of miscellaneous information. A mark is placed in the weekly space when a particular plant is to be dealt with, the form of the mark varying according as seeds or plants are to be used, or taken up for storing. Variations in the colour of the weekly spaces show whether the seed or the plant is to be placed in the open ground, in a sheltered, sunny spot, under glass, or on a hotbed. Thus, taking the Carrot as an example, the dots and patches of colour show that seed may be sown on a hotbed at the end of January, in a warm situation in March, and again in August, in the open ground in April, and lastly, that they should be stored in October.

Daffodil Sir Watkin.—From Messrs. R. Veitch & Son, of Exeter, we have received flowers of this form of incomparabilis as fine or finer than any we remember to have seen; some of the flowers have an additional number of segments—another proof of strong bulbs and suitable treatment.

Iris lineata is the name given by Professor Foster to a small-flowered Iris from the Caucasus with distichous flat leaves. The flowers are purplish-brown, the reflexed sepals bearded, the erect petals sharply pointed, both traversed by conspicuous reddish-purple veins. It is figured in the April number of the *Gartenflora*.

Larix Griffithii.—From the garden of General Trelawney, near Liskeard, Cornwall, we have received specimens forwarded by Mr. Nanscawen, of the male flowers and young cones of Larix Griffithii. Last year we gave an illustration of the perfect cones of this species, but in which, unfortunately, the cones were shown as pendulous, instead of upturned on the pendulous branches. Every one knows how beautiful are the female catkins of the common Larch at this season, but we may safely say they are much exceeded by those of the Himalayan Larch in question. The branches are pendulous. The male catkins are smaller and more pointed than those of the common Larch, and emerging from the sides of the branches like the tufts of leaves. The female catkins are upturned, their bracts of a rich lilac-red, with long golden-green reflected points. A glorious thing.

"Genera Plantarum."—M. Theophile Durand, sub-curator of the Herbarium of the Brussels Botanic Garden, has prepared an index to the three volumes of Bentham and Hooker's *Genera Plantarum*, comprising the names of the genera, the principal synonyms, and the number and geographical distribution of the species. The genera are numbered consecutively and arranged alphabetically as well as systematically. Such a work, well carried out, would be of vast service in herbaria and libraries. The subscription price is 20 francs, and application should be made to M. Durand, at the Botanic Garden, Brussels.

Publications Received.—*May's British and Irish Press Guide.* (London: F. L. May & Co., 159, Piccadilly, W.).—*American Florist Company's Directory.* (Chicago, U.S.A.: American Florist Company).—*Fire Protection of Mansions*, by J. C. Merryweather, M.I.M.E. (London: Merritt & Hatcher, 2, Grocers' Hall Court, E.C.).—*The Primrose*, No. 1, vol. i. (London: 32, Bouverie Street, Fleet Street, E.C.).

SPIRÆAS, SHRUBBY AND HERBACEOUS.

I. Shrubby Spiræas.—Very beautiful and distinct are the score and a half species, or species and their varieties, of Spiræa, habitually met with in commerce. A more free growing, enduring class of plants it is difficult to imagine. Probably a drawback connected with them is their deciduous habit, though there is space enough in all gardens, where Spiræas could not fail to be appreciated. Apart from the floral wealth of some species, many have very ornamental foliage, of which S. Lindleyana is a conspicuous instance; the foliage of this when well grown vieing with some forms of Tree Ferns.

Spiræa alpina.—The Siberian alpine Spiræa is an erect habited shrub, from 4 to 5 feet in height, producing flowers in terminal stalked corymbs, white in colour, during the months of June and July. It is a desirable variety owing to its neat upright habit, and the large size of the flower corymbs compared to the size of its serrulated lanceolate leaves.

S, ariæfolia.—This is the White Beam-leaved North American species, and is in fact the American Meadow Sweet, growing on the north-west coasts of its native country. It is very hardy and would no doubt prove an excellent plant for the sea-side. The plant grows very freely into dense bushy form, and generally averages 5 or 6 feet in height. The flowers are produced between the last week in the month of June and the second week in July—a season when comparatively few shrubs flower—in the form of large, long, erect plumes of white flowers, bending over at the points, giving a graceful curvature to each plume. The plant will thrive in almost any soil, showing no particular aversion to one somewhat stiff and undrained. It repays occasional transplanting into fresh soil, and is readily propagated by division, or from seeds, which it sometimes perfects even in this country.

S. bella.—This beautiful Spiræa is a a very desirable species, for though introduced from Nepaul it seems as hardy and endurable as the well-known Willow-leaved Spiræa, which it resembles in all but its looser habit of growth, and flowers produced in corymbs, instead of elongated, spiked, upright racemes, as in the latter. This species is a very desirable one, and well repays transplanting carefully every three or four years.

S. corymbosa.—The corymbose flowering species, a handsome shrub, bearing white flowers, introduced from Virginia, is a desirable, distinct form, free-growing, and showy.

S. Lindleyana.—Beyond doubt this species is the handsomest, foliage and flowers counted together, of all the species. Planted in good new ground, it will often grow to a height of 7 or 8 feet, the long racemes of pure white flowers being formed at the ends of the young lateral growths about the end of July. The plant is described variously as from Nepaul and other places.

S. Sorbifolia.—The Sorbus-leaved species somewhat resembles the above, though smaller in all ways, the leaves growing more horizontally, the colour of stems, &c., showing besides a marked difference. Planted in bad soil, or permitted to remain too long unattended to in the matter of division, &c., the plant becomes much more dwarf. It is a native of low-lying districts, moist places, &c., in Siberia.

S. tomentosa.—The downy Canadian Spiræa, called by the Americans "Steeple Bush," owing to its erect habit, and the upright form of its branched spikes of bloom. It is about as hardy and enduring as the Willow-leaved, which it resembles in all but its tomentose or hairy stems, leaves, &c. Found upon the exposed hills in Canada, it is doubtless exceptionally hardy, and would thrive in exposed draughty corners between detached villas, &c., where few plants can be got to live long together.

S. salicifolia.—Several varieties of this species exist, and they are, in some form or another, widely distributed over the face of the globe, being found in Siberia, Bohemia, Tartary, America, and the flesh-coloured S. carnea grows as a naturalised shrub in some parts of Britain. It is a very free-growing species, very hardy, flowering freely during the months of July and August.

S. hypericifolia.—The Hypericum-leaved species is an erect shrub, averaging 4 feet in height, having white flowers in corymbs, the native country of which has not satisfactorily been determined. Three or four sub-varieties belong to this species, though only desirable as curiosities, or where collections are grown.

To the latter may be added also S. Reevesiana, S prunifolia flore-pleno, S. callosa in variety (pink), S. Nobleana (pink), S. Fortunei (pink), S. Douglasii (pink), S. formosa, S. splendens, and S. Thunbergi (white).

II. Herbaceous Spiræas.

S. filipendula flore-pleno.—The doubled-flowered form of the British Dropwort is a very beautiful object, which should never be absent from gardens. Whether for garden display or for cut blooms it is equally desirable.

S. japonica.—This better known to some as Hoteia japonica, though most commonly employed for forcing, succeeds well out-of-doors, planted in deep rich soil in a position where protection from late spring frosts is assured; such late frost sometimes destroys the early show for flower, which is the only adverse feature to be noted in connection with it. The variegated leaved form is desirable.

S. aruncus.—The Goat's-beard Spiræa is of all these lowly species certainly the most showy. Growing to a height of 3 or 4 feet, it produces numerous branched spikes of white inflorescence which, issuing forth from above beautifully appropriate foliage, give a charming effect. The plant is a native of Siberia, though a counterpart, or very similar species, exists in America. As a border perennial plant this is a most desirable

one, and should not be absent from the smallest collections. It is increased by division in spring.

S. palmata.—Second to no species in the whole genus, and one of the handsomest plants in cultivation. In a word, a form similar to our British Meadow Sweet, producing broader corymbs of bloom than even this, and of a deep purplish-red colour, the branches or stems to which these corymbs are attached, being more crimson still; set off by lovely foliage, which in autumn assumes also a pleasing ripening hue. To this may also be added the taller growing S. venusta, with rosy-carmine coloured flowers, and if need be, the white-flowered form of S. palmata, and the variegated-leaved S. ulmaria. *William Earley.*

CULTURAL MEMORANDA.

PLUMBAGO CAPENSIS.

This is a showy greenhouse climbing plant of free growth, yielding an abundant supply of sprays of beautiful grey-blue flowers during the summer and early autumn months. It is admirably adapted for draping a wall, pillar, or for training to a trellis as a pot plant. Cuttings taken now and inserted round the side of 3-inch pots, and placed in a Cucumber or Melon frame, will soon root. They should then be potted singly into properly drained 3-inch pots, in a compost consisting of three parts sandy loam and one of leaf-mould, put back in heat, watered, and shaded from bright sunshine for a few days until the roots have taken to the soil. As soon as the young plants have made fresh growths they should be stopped to make them branch. When the plants require more room at the roots they should be shifted into 4-inch and 6-inch pots respectively, again pinching the points out of the shoots soon after each shift has taken place. Thus grown, nice bushy little plants, having several trusses of flowers each, will be secured by the end of August next, and which will then be found very effective for intermixing with Pelargoniums, Fuchsias, Begonias, &c.

Cinerarias.

"J. H." states at p. 490 that his plants of Cineraria growing in 5-inch and 6-inch pots have heads of bloom from 6 to 6½ feet round, which, if the heads are close, are very good specimens of culture resulting from the size of pots indicated. We grow a goodly number of Cinerarias here, and which are now, as they have been for the last few weeks, in fine flower, and which are greatly admired by visitors as well as by my employer. The plants are growing in pots ranging in size from 6 to 10 inches in diameter in an admixture of three parts good turfy loam and one of sweet leaf-mould and pulverised horse-droppings, with a good sprinkling of drift sand added. They have compact heads of bloom measuring from 6½ feet to 9 feet in circumference. Had the plants been pegged or tied out the measurements indicated would have been considerably increased, as we have had heads of bloom on plants so treated nearly 4 feet in diameter, as a reference to back numbers of the *Gardeners' Chronicle* would show.

Bougainvillea glabra.

Although this climbing plant is classed in catalogues with the stove climbers it is, in my opinion, more adapted for a greenhouse temperature. It is a matter of fact that the finest specimens I have seen were grown in a greenhouse at Broadlands, Romsey, and Pyt House, Tisbury. It is a very suitable plant for draping a pillar or training thinly under the roof of conservatory or greenhouse, and when grown in a 12-inch pot in good fibrous sandy loam, and trained over a balloon or pyramid oval-shaped trellis it is very telling. Cuttings taken with a heel of the old wood from plants now starting into growth in a cool temperature, and inserted in small pots filled with sandy soil, placed under a hand-light or bell-glass in the stove and watered, will soon root. They should then be potted singly into 3-inch pots, afterwards shifting them into pots a couple of sizes larger, and by pinching the points out of the shoots once or twice to make them branch, and subsequently training the young growths to a small trellis, neat little table plants with trailing shoots, well furnished with pale mauve flowers or bracts and light green leaves, will be secured in due time.

Hoya bella.

This old favourite twining plant is not so often met with as its merits entitle it to be. Well cared for, the plant produces freely during the summer months lovely wax-like flowers, white, with a pink star-like centre, and delicately scented. It is a beautiful plant for a hanging basket in the stove. Cuttings put in now, in pots filled with sandy peat, placed in heat, and watered, will root freely; and if they are then potted singly into 3-inch pots, and grown on in heat and stopped a few times, they will make nice little plants by the autumn. *H. W. Ward.*

THOMAS BAILEY.

On the morning of Sunday, April 17, Mr. Thomas Bailey died, in his eighty-first year, at the gardens,

Shardeloes, Amersham, Bucks. For nearly fifty years he very successfully managed these gardens for T. T. Drake, Esq., whose confidence and esteem he enjoyed to the last. Mr. Bailey was a most enthusiastic and thoroughly practical gardener, who carried out every detail of his work in a most scrupulously systematic manner, and made a chief point of being well in advance with it. Of late Mr. Bailey did not exhibit frequently, but that was not the case formerly, as he used to be an almost regular contributor of plants, &c., at the metropolitan and provincial shows, and generally speaking his name was in those days to be found in the foremost place.

The magnificent plants of both kinds of Pelargoniums that he used to show will be remembered by many now as being wonderful examples of skilful cultivation. He likewise exhibited fruit, &c., sometimes, which was also remarkably good; and in the cultivation of some kinds but few have surpassed him, particularly in Providence Pine-apples. These, of great weight and size, he produced under the old-fashioned system, viz., in small places heated by means of fermenting materials. Melon cultivation was a favourite pursuit. He raised several new kinds; Bailey's Greenflesh is undoubtedly one of the best kinds in cultivation, and which has borne the test against others for the past thirty years at least. The vegetable garden was to him a delightful study, and it was very interesting to hear his description, &c., of some of the subjects which he treated almost as pets. His chief productions in this way comprise Bailey's Superb Cabbage, Selected Bath Cos Lettuce, and Pearl Cauliflower. This most valuable kind was recently introduced by Messrs. Veitch, London. The methodical way in which the rotation of crops and other kindred arrangements were carried out in his kitchen garden was at once observable to a practical hand, and without fear of contradiction it may safely be said that in the ordinary way of cultivation in this department here it stands second to none in the kingdom. *G. T. Miles, Wycombe Abbey, April* 20.

Mr. Bailey was born at Croydon on October 13, 1806. He received his first horticultural lessons at home in a market garden, at sixteen years of age removing to Addington Park, where he remained two years under the direction of Mr. Buckwell. On leaving Addington he went to Althorpe Park under his uncle, who was for many years park steward and gardener there. Leaving Althorpe after some time he became head gardener at Delapré Abbey, the seat of the late Edward Bouverie, Esq., where he remained for eleven years. In the year 1838 he became gardener at Shardeloes.

NARCISSUS LITTLE NELL.

Our illustration (fig. 107), taken from a drawing made by Mr. Hartland's niece, shows three flowers of a new variety introduced by Mr. Hartland, of Cork, and exhibited by him at the meeting of the Narcissus Committee at South Kensington on April 12 last. The elegance and beauty of the flower will undoubtedly render it a great favourite. It would be a great boon to those who have to fill greenhouses and conservatories in early spring.

THE HARDY FRUIT GARDEN.

INSECTS.

The foliage and buds of Peaches and Nectarines are very liable to attacks of greenfly and red-spider early in the season, and should therefore receive frequent and careful examination to see if any are present, when means must be taken immediately to eradicate them. Insecticides are not very suitable for this purpose in the early stages of growth, as the downy covering of the fruit absorbs the mixture, however carefully it may be applied, disfiguring the fruit. The most simple and easily applied remedy is tobacco-powder, which should be dusted over the infested trees, and washed off a few days afterwards with the syringe or garden engine, and again applied if found to be necessary. Should the Apricot maggot put in an appearance it can easily be detected by the leaves being rolled up; the leaves should be pressed between the finger and thumb, and so destroy it.

Watering.

Should the trees be protected by heavy copings, and become dry at their roots, advantage should be taken of the early part of a mild day to give a thorough watering, and (if not already done) give a good heavy mulching of well-rotted manure. Allowing the roots of wall-trees to become too dry is a fruitful source of bud dropping and the trees not setting their fruits. *E. Ward, Hewell Grange, Bromsgrove.*

Presentation.—Mr. William S. Bisset, Head Gardener and Land Steward to Sir Robert Drummond Moncreiffe, Bart., of Moncrieffe, Perth, N.B., has been presented with a handsome gold watch and pendant and a purse of sovereigns, by the members of the Kilgraston and Moncreiffe Curling Club, tenants on the Moncreiffe estate and numerous other friends, as a mark of the high respect and esteem in which he has been held during the thirty years in which he has discharged the arduous duties of his responsible position.

Plants and Their Culture.

STOVE FOLIAGE PLANTS.

The cold winds accompanied with bright sunshine, at a time when the young leaves of many stove plants are tender, will have made great care necessary in the stove, to prevent injury to them. During the prevalence of this kind of weather no more artificial heat should be employed than will keep the temperatures at the lowest safe point, and shade should be given early to prevent a rapid rise by sun-heat which would have to be corrected by the admission of cold air. As soon as the weather becomes genial a high and moist temperature must be maintained to cause quick growth, no pains being spared to keep the foliage clean. Crotons, Dracænas, Cyanophyllums, &c., that are subject to thrips, will require great attention, much may be done however towards keeping this insect down by the timely use of the sponge and syringe. It is not advisable to fumigate or to make use of powerful insecticides oftener than it can be avoided, particularly when young foliage is forming. As soon as the roots of plants recently potted take possession of the fresh soil close attention to watering will be needful, and fast-growing subjects must have more space afforded them to prevent crowding. Cissus, Pothos, Smilax, Asparagus, Philodendrons must have their young shoots fastened up as they lengthen; and specimen Crotons should also be staked and tied out. Caladiums, Peperomias, Begonias of the Rex type, and young plants of Aralias, Aphelandras, Reidias, Rhopalas, Pandanus, &c., should be shifted into larger pots as fast as they require more root-space. Old plants of Cyanophyllum and Sphærogyne that have lost their bottom leaves, if cut back now, will push young shoots, which will readily root if taken off as soon as they have become firm, and inserted in small pots filled with fine light soil; they should be placed under a bell-glass in a brisk temperature. The young plants are impatient of chills, and must be very gradually accustomed when well rooted to the atmosphere of the house.

Poinsettias.

Cuttings of these should be taken off with a heel when a few inches in length, and placed singly in small pots filled with fine sandy soil, with a surface covering of silver-sand. They should be gently watered without being allowed to flag, placed in a propagating frame, and gradually exposed to air when rooted. *Thomas Coomber, Hendre Gardens.*

Strobilanthes attenuatus.

A Himalayan shrub, with stalked ovate-acuminate leaves, and erect many-flowered panicles of bluish-lilac flowers. Each flower is about 2 inches long, with a curved funnel-shaped tube, and a recurved four-lobed limb, the lobes rounded. It is suitable for stove culture, like the Ruellias, and flowers in summer. Figured in *Gartenflora* for March last.

Fig. 107.—Narcissus Little Nell: segments and cup pure white. (see p. 552.)

The Orchid Houses.

SHADING AND THE POSITION OF THE PLANTS.

Growers of varied collections of Orchids who have not the convenience of many subdivisions, will find it necessary to vary the conditions in such houses as they have, to suit the requirements of the various species. This can be accomplished by giving more or less air to one part of the house, and by fixing heavy shading on one part, and shading of a light kind on the other. Many Dendrobiums will grow well on the south side of an East Indian-house if lightly shaded, but I have often found thin shading on the south side to let in too much sunlight for the well-doing of many tender foliaged Orchids requiring considerable heat; therefore it is best when trying to alter the conditions in one house to have the thin shading on the north end or side according to the position of the house. When the structures run north and south it will be found that many species of Dendrobium grow well when suspended at the north end, with very little shade given. The following will succeed in the hottest division:—the D. bigibbum section, D. formosum, D. Ainsworthi, D. albo-sanguineum, D. endocharis, D. rhodostoma, D. Lowii, D. Harryanum, now flowering—a very pretty and distinct species; this and D. Dearei do very well at all seasons in the warmest house. The two latter and D. Findleyanum endure a little more shade during summer.

Plants of Cattleya gigas that have been fully exposed to the sun until now, will require a little shading to prevent the foliage from becoming too yellow, and if the plants be strong, in order to induce flowering, keep them very short of water until the growths begin to open their leaves, after which give liberal treatment. If Cyrtopodium punctatum has been fully exposed to the sun it should now be sending up flower-spikes from the new growths.

Orchids that have been taken from cool to warmer houses for the winter should now be placed in their summer quarters; and if any should require potting, do it a short time before changing their quarters, or wait until they get acclimatised to the cooler treatment. *C. Woolford, Downside, Leatherhead.*

Home Correspondence.

WATERING FRUIT TREES AGAINST WALLS.—Owing to the small quantity of rain which has fallen during the last few months, Peach, Nectarine, Apricot, and Cherry trees now in flower are necessarily drier at the roots than they ought to be in the present stage of growth. [What of the snow, sleet, hail, &c.? Ed.] Therefore, the surface of the soil about the individual trees should be pricked over slightly with a fork previous to giving them a thorough soaking of water at the roots, then, with a view to preserving the moisture as well as the soil about the roots in a more equable condition, lay on a mulching of rotten dung to the thickness of 2 inches, and which should extend for about 3 feet from the stems of the trees. Trees thus treated, should the season continue rainless, will yield better results than others not mulched. Last week all the Peach, Apricot, Cherry, Green Gage, Plum, and all young trees, which were planted last autumn in this garden, were thoroughly watered at the roots, &c. Had I not done so, I believe the ultimate thinness of the crop, as well as the possibly unhealthy look of the trees, would have daily reminded me that something had been left undone in the hardy fruit department that I most certainly ought not to have overlooked. Hence this note, in the hope that those of your readers who may have overlooked this important matter may see to it while there is yet time. *H. W. Ward.*

GARDENERS' ROYAL BENEVOLENT INSTITUTION AND THE JUBILEE.—I venture to think that horticulturists generaly will rally to support the laudable endeavours of the committee of the Institution to enable the pensioners as well as the unsuccessful candidates at the last election to share in the general rejoicing of the year by a present to each of £5, should the result of the special collection now being made enable this to be done. The noble example set by a true friend of the institution, who promises 30 guineas, followed by another with the promise of 10 guineas, will surely induce every true hearted gardener to subscribe to the fund, even if it be but a few pence. Large donations are not expected in connection with such a special effort, but if all gave according to their means the fund would admit of the presentation to each pensioner of much more than the proposed £5. That such may be the result is the earnest wish of *Head Gardener.*

MORE GARDENERS THAN GARDENS.—Having carefully read over the advice of your correspondent on p. 490 I should like to make a few remarks in reference to the country being over-stocked with

gardeners. I think if journeymen are now too numerous head gardeners are to blame in giving encouragement to the prevailing system, which lies at the root of the evil. The majority of head gardeners of to-day teach far too many youths, obtaining premiums from them of £3 and more per year; this your correspondent has failed to mention, but I think myself he is very hard on young gardeners themselves, who entertain much the same feelings as he does—that is, every man for himself—as all must earn a living or want. If there were fewer young men in gardens, and their places were filled by labourers, as your correspondent suggests, these latter would naturally try and gain higher positions, precisely as the young men do now; so that the result would be the same. If head gardeners would be satisfied with their ir pay, and premium-taking be forbidden by employers, the present evil of having so many gardeners doing nothing would in time cure itself. *F. W.*

PELARGONIUM HENRI JACOBY FOR CHURCH DECORATION.—One of the most effective decorations employed in the church here this year was made with the scarlet Pelargonium Henri Jacoby. The plants were grown in 6 and 7-inch pots for decorations and for cut blooms, for which purpose it is one of the most useful sorts. This beautiful Pelargonium has no equal for brightening up groups of Callas, Palms, Spiræas, &c. Another plant used largely for vases was the deliciously scented Stauntonia latifolia, long branches being cut the night before, and placed in pans of water; these stood without flagging during the whole of Easter Day, inserted in wet sand. A plant of Stauntonia planted out and trained up the pillars of the conservatory is at this time of year in full flower; its delicious scent pervades the place. *Bailey Wadds, Birdsall Gardens, York.*

GRAPES IN THE OPEN AIR.—In these sceptical times, when so many people are like the men of Athens spoken of by St. Paul, constantly seeking for some new thing, it is pleasant to read "P. G.'s" practical notes upon open-air Grape culture (p. 512). There is, I think, no doubt that the cheapening of glass, though it has done much for horticulture generally, has led to the neglect of the Grape Vine as an open-air fruit, and in some degree to less attention being given to other hardy fruits, also the Peach, for instance. Still even now fairly good Grapes are grown on sunny walls in an average season, and when the fruit is not ripe enough for dessert it is still valuable for wine-making. I have now some wine that was made eighteen months ago from Muscadine Grapes at a cost of something less than 3*d.* per bottle that is more refreshing and more wholesome than much of the cheap stuff sold as imported wine. When rationally managed open-air Grapes are at least as profitable as any other hardy fruit. And in many parts of rural England the dwellings are pleasanter to look at and to live in because of their garniture of Grape Vine. Overcrowding of the branches is the great evil in open-air Grape culture, for as remarked by your correspondent, the wood must be thin, so that the sun's rays may strike the wall behind the foliage, to ripen, not only the fruit, but the wood also, for the next year's crop. With overcrowding of the leaves and branches as a matter of course is associated over-cropping. And if the Grape Vines had not been exceedingly tenacious of life, the race would have become extinct long ago—at least, as an open-air fruit. Mildew is often a terrible pest to open-air Grapes, especially when the roots have got into a stagnant condition; but if taken in time, and sulphur judiciously applied, it may be speedily and easily checked. A well-drained site is a necessity, as then, when the Grapes are swelling, liquid food can be given with advantage. I I believe a good deal may be done by artificial manure in increasing the size of both bunch and berry, if not of hastening the maturity of the crop. Liquid manure from the farmyard is in a way valuable, but if used constantly its tendency is to clog up the pores of the soil and make it sour, and this leads to stagnation of the roots and mildew follows naturally. As regards varieties the best among the varieties commonly grown are the Muscadine and Esperione, but I see in the catalogue of Messrs. Smith & Son, of Worcester, the following varieties are recommended for open-air cultivation:—Ferdinand de Lesseps, Muscat Lierval, and Muscat St. Laurent. I have seen the White Sweetwater good in the South, but the best white Grape is the White Muscadine for the open air, at least according to our present knowledge. Will some one having "P. G.'s" cultural knowledge, possessing a warm sunny wall, become a public benefactor by getting together all the best hardy Grapes obtainable, and show what can be done with them? The work itself would be interesting and the results valuable. *H.*

MILLER'S "GARDENER'S DICTIONARY."—I am very much obliged to Mr. Hughes for calling my attention to the date given on p. 451 as that of the first edition of this work. I wrote—perhaps rather slovenly—1731, and I overlooked the matter in the proof. However, I shall have an opportunity for making the correction in the continuation of my sketch. I may add here that Miller's *Gardener's and Florist's Dictionary*, a work of two octavo volumes, which appeared in 1724, was the basis of the later work. *W. B. Hemsley.*

—— In reference to the question of the first edition of Miller's *Dictionary*, it should be pointed out that *The Gardener's and Florist's Dictionary, or a Complete System of Horticulture* (1724, 2 vols. 8vo.), was practically the earliest issue. But this work was ostensibly the production of a society of gardeners, of which Miller was the secretary, as will be seen noted in Johnson's *History of English Gardening*, p. 193. Miller's *Dictionary*, in the narrower sense of the word, appeared in 1731, as pointed out in your last issue by Mr. Hughes. It is an enlarged and much improved issue, in folio, of the 1724 publication. The second edition appeared in 1733, the third in 1737, the fourth in 1743, the fifth in 1748, the sixth in 1752, and so on. An abridgment first appeared in 1735, and quickly ran through a number of editions. A Dutch translation appeared in 1746, a German in 1750, and a French in 1785. I have not been able to find any reference to a 1736 edition of Miller's *Dictionary*, to which Mr. Hemsley refers, either in the British Museum Catalogue or in Lownde's *Bibliographer's Manual*. The date given, therefore, is probably a misprint. *W. Roberts*, 11, *Frederick Street, Gray's Inn Road, W.C.*

TREATMENT OF ROSES PLANTED OUT.—I send you some Rose blooms to show you what may be done in the way of resuscitating old Rose trees. Eighteen months ago (November) the house was found to be in a bad state with mildew, I therefore pruned the trees, and removed as much of the soil as possible without lifting the plants. They had scarcely a good root left, as far as could be seen. The plants were then well dusted with Thomson's manure, and top-dressed with loam and soil that had been charred with wood in equal parts, When the plants got hold of this they grew vigorously, and made a great quantity of fibry roots. There was no mildew until the latter part of the past season. In November the plants were pruned, and the beds were discovered to be so full of roots that it was not safe to disturb them, so a little more manure was sprinkled on the surface, and about a couple of inches of charred soil added. Alternate dustings of Vine manure and blood manure, with copious waterings when required, is all the treatment the Roses have received. *W. M. Baillie.* [The blooms very fine for the season. Ed.]

CALANTHE DISCOLOR AND C. SIEBOLDI.—The writer of the paragraph at p. 455, respecting Calanthe Sieboldi has fallen into an error, which should at once be corrected. He speaks of a plant flowering at Kew, of which he gives a brief description; and then he goes on to speak of coloured figures in the *Revue Horticole* and *Regel's Gartenflora*. The plant he describes is, however, something very different. The plates represent a species with yellow flowers—the true C. Sieboldi—while his description refers to one with dull purple sepals and petals, and a pale yellow lip. This latter is Calanthe discolor, a pretty species, but scarcely so attractive as C. Sieboldi. Both of them are natives of Japan, and hence require cool treatment. *R. A. R.*

CRINUM CAPENSE.—This is very lovely now. The bulb is 22 inches in circumference, spike 3 feet 9 inches, with sixteen flowers on the spike. Another spike from the same bulb will, I think, be equally as good. Has it ever been crossed with any of the Amaryllis? Can any of your correspondents inform me on this point? *W. Nanscawen.*

RHODODENDRON CAMPBELLIÆ.—Your correspondent, "W. S." (p. 451 of issue of 2d inst.), says of this, that it is closely related to R. arboreum. May I ask if it is not R. arboreum var. rosea of De Candolle? We have Sir J. D. Hooker's own conclusion that R. Campbelliæ is only a variety of R. arboreum, and that the specimen figured in his *Rhododendrons of Sikkim Himalaya* of R. Campbelliæ does not differ specifically from R. arboreum. Again, on the summit of Mount Tanglo Sir J. D. (then Dr.) Hooker gives the three Rhododendrons as R. arboreum roseum, R. barbatum, R. Falconeri amongst the prevailing plants; *verb. sap. W. E. D.* [In the most recent summary of the Indian Rhododendrons—that of Mr. C. B. Clarke in Hooker's *Flora of British India*, vol. iii., 1882, p. 465—R. Campbelliæ is referred to R. arboreum, together with R. cinnamomeum, R. album, Sweet, and R. Windsori, Nuttal. Ed.]

SOCIETIES.

ROYAL HORTICULTURAL.

Tuesday, *April* 12.—Owing to the great pressure on our space, the following report was omitted in our last issue:—

Scientific Committee.

Present: Dr. M. T. Masters, in the chair; Professor M. Ward, Professor A. Church, Mr. G. Maw, Dr. Lowe, Mr. G. F. Wilson, Mr. O'Brien, Mr. Maclachlan, Mr. W. G. Smith, Mr. A. Smee, Professor Boulger, and Rev. G. Henslow (Hon. Sec.).

Hybrid Bulbocodium (Supposed.)—Mr. Smyth forwarded flowers, as requested at the last meeting, but which proved to be exactly like a large form exhibited by Mr. Maw, who had no doubt they were from true seedlings and not a cross.

Crocuses.—Mr. Maw exhibited the following:—C. biflorus var. Pestalozzæ, from near Constantinople, with a very small white perianth; C. minimus, DC., from Ajaccio, Corsica, with dark purple outer petals and lighter coloured ones within; C. Imperati, from Bavillo, South Italy, also a white variety of the same, first introduced by Dr. Lowe, who sent it to the late Rev. H. H. Crewe.

Narcissi.—Mr. Maw observed that the "obesa" form is not a distinct form, but is characteristic of many, as of C. nivalis, both of larger and smaller kinds. Specimens of N. nanus, found wild or naturalised near Bewdley, Salop. were exhibited.

Chionodoxa sp.—Mr. Maw showed specimens from Crete, having a much smaller flower than C. Luciliæ. Dr. Masters observed, that in his experience the latter will degenerate in a wet soil so as to assume a diminished stature, which was, therefore, probably solely due to its habitat.

Fritillaria armena, from Erzeroum, Armenia (chocolate-flowered), was shown. This was figured in the *Botanical Magazine*, together with a yellow form from mountains near Smyrna which Mr. Maw thought to be distinct. Mr. Maw also exhibited a vernal form of Colchicum from the Dardanelles.

Kief.—Mr. Ridley reported upon his examination of the plant producing this intoxicant, which proved to be a dwarf form of Cannabis sativa, or Hemp, due to its growth in a poor soil. It has smaller and darker coloured fruit than that of ordinary Hemp.

Radulum.—Mr. O'Brien exhibited specimens of a form of this fungus growing on imported Orchid blocks, and also a young form of some species of the Locustideæ on Dendrobium Falconeri.

Primula sp.?—Mr. G. F. Wilson exhibited a small species of Primrose which had come up amongst Himalayan seed, and several blossoms of seedlings of Scott Wilson, showing the retention of the blue tint, though exhibiting great variety of colours.

Primrose, White Variety.—Mr. W. D'Arcy Godolphin Osborne sent a plant of a white Primrose found wild near Biarritz. Though a common cultivated form it is probably rare in a wild state. It was growing in red clay.

Primula, Hybrid.—Colonel Clarke exhibited blossoms of a hybrid of P. ciliata crossed by pollen of a dark alpine Auricula. The colour closely resembled the latter, but the corolla was very large, being quite half as large again as the Auricula, while the centre was of a deeper yellow.

Rhubarb, Hybrid.—Colonel Clarke also showed a leaf of a hybrid between Rheum palmatum and the common garden Rhubarb, R. undulatum.

Cattleyas, Malformed.—Mr. Ridley reported upon these as follows:—(1.) The lip was twisted 90°; there was one petal only, three stamens but only one rostellum, with all the pollen aborted. (2.) One petal was somewhat labelliform, and apparently two rostella were present.

Rose Cuttings Hypertrophied.—Professor M. Ward reported on these. The protuberances were very remarkable. He detected a plasmodium within the cells, showing a definite relationship to the outgrowths. On cultivating the fungus a definite

plasmodium was seen outside the cells; it was accompanied by a Myxomycete, seen in yellow accretions of spores. It somewhat resembled the growth in Turnips, but was of an unknown species. He proposed to investigate it further.

Hyacinths, Malformed.—Mrs. Lee sent bulbs of Hyacinths from which the short undeveloped spike of buds had prematurely fallen by a constriction of the peduncle, about an inch below the base of the flower-buds. They were referred to Professor M. Ward for further examination and report.

Azalea Sport.—Rev. G. Henslow exhibited a mauve-coloured blossom which had appeared on a shrub with nearly scarlet-coloured flowers. The foliage on the sport was much larger and more hairy than on the usual branch. Moreover, in the sport there was a tendency to doubling, but not in the normal flower.

Portuguese Narcissi: Notes on, by Mr. A. Tait.—A communication was read, giving details of Mr. Tait's and Mr. Barr's observations in North and South Portugal.

Corbularias.—Of these was found a large form, perhaps conspicua or serotina, in marshy ground, and in sandy woods of Pinus maritima; edging the marshes there was a much dwarfer form, varying in colour from a rich orange to pale yellow, distinctly striped with greenish-white; all probably of one species, but with variations, due to environment, as some of the larger kinds, planted in 1886 in a dry situation, have become reduced this year.

On higher ground in North Portugal the Corbularias are small, with Rush-like, twisted, and drooping leaves; but at 3000 feet in the Gerez Mountains was C. nivalis, with erect leaves and small flowers, varying from a rich yellow to pale sulphur.

In February a fine form, probably C. obesa, Salisb., was found in Estremadura, at Montegil. Mr. Tait remarks upon the varying lengths of the styles in this species, and thinks that it is an unstable character for classificatory purposes. He notices—what has been already observed by others—a similar instability in the stamen of N. triandrus, an approximation towards heterostylism. It is rare, he adds, to find the style deep down in the Ajax section.

A small-flowered form of Ajax, transplanted in 1885, has now borne flowers equal in size to the larger form, the small size being attributed by Mr. Tait to poverty of soil. He notices great variation in the form of the flower representing "Maximus," "Major," and the "Tenby," suggesting to Mr. Barr that these forms originally came from Portugal. Near Braga forms with the perianth paler than the crown, as in the English and Scotch wild form, were met with. Ajax bicolor occurred in abundance, and was the nearest approach to pl. 1187, *Bot. Mag.*

Mr. Barr has found N. Johnstoni in several localities in North Spain. N. triandrus is specially remarkable for the extraordinary variations in form of flower, foliage, size of bulb, &c., together with the curious trimorphism of the sexual organs. N. triandrus var. concolor was found in a few mountainous situations by Professor Henriques, and Mr. Tait identifies it with Parkinson's N. juncifolius flore luteo reflexo (*Parad.*, p. 92), remarkable for its golden-yellow colour. N. Jonquilla, a remarkably large form, has flowered with Mr. Tait.

Mr. Tait concludes his interesting communication with some remarks on hybrids, all of which are of a creamy-white colour when due to the natural crossing of Pseudo-Narcissus and N. triandrus. Other hybrids from Gerez are uniform in size, colour, &c., and partake of the features of both the parents, viz., C. nivalis and N. triandrus. He asks, Why are these hybrids so rare, and do they die out?

ROYAL BOTANIC.

April 20.—The second spring show of this Society was as good a one as could well be desired, and the weather being warm and sunny the exhibits were seen to the best advantage. As regards quantity, it must be said that the show, although of fair dimensions, was not so large as the first show of the season. A great charm was lent by the exhibits of Roses, and brilliancy was supplied by Azaleas chiefly, for the Daffodils and Narcissi exhibited in groups by Mr. T. S. Ware, Tottenham; Messrs. J. Veitch & Son, Chelsea; Messrs. Barr & Son, King Street, Covent Garden, London; and by Messrs. Collins Bros. & Gabriel, of 39, Waterloo Road, London (who also had a very good group of Anemones), made a good display of colour, but one that was rather monotonous.

Roses.—Messrs. Paul & Son, Old Nurseries, Cheshunt, exhibited very well in the nurseryman's Rose class, taking the 1st prize for nine forced plants, and having as the finest Marie van Houtte, Alba rosea, Souvenir d'un Ami, and Catherine Soupert; but all were good plants, and full of large flowers. Mr. Rumsey, Joyning's Nursery, Waltham Cross, was next in order, having plants of very good quality, but of smaller size; Magna Charta, John Hopper, and Souvenir d'un Ami were his best. Mr. P. Perry, gr. to W. G. Rowlett, Esq., The Woodlands, Cheshunt, was 1st in the amateur class. Both Messrs. Paul & Son and Mr. Rumsey sent other collections of Roses in pots, Messrs. Paul including several of the popular varieties. The plants were very fine, and evenly trained (Silver Medal). Mr. Rumsey's group consisted of smaller plants, not so comprehensive, and rather weak in the training (Small Silver Medal).

Azaleas and Rhododendrons.—In the nurseryman's division for greenhouse Azaleas, Mr. C. Turner, Royal Nurseries, Slough, showed most successfully, having well and evenly flowered specimens. The best varieties were Roi d'Hollande, Madame Van Houtte, Mrs. Turner, and Comtesse de Flandres. The 2d place was given to Mr. H. James, Castle Nursery, Norwood, who had well flowered but rather small plants. Amateurs were well to the fore, in fact, eclipsing the nurserymen. Mr. H. Eason, gr. to B. Noakes, Esq., Hope Cottage, Highgate, was the leader, showing fine specimens, especially of M. Thibaut and Princess Charlotte. Azalea mollis was shown by Messrs. H. Lane & Son, Berkhamstead, the plants being a perfect blaze of colour. The same exhibitors showed a fine lot of Rhododendrons, taking 1st prizes in both instances. Among the Rhododendrons were—Snowflake, Auguste van Geert, Cynthia, John Waterer, and Limbatum. Messrs. Lane also showed a miscellaneous group of Azalas and Rhododendrons, for which a Bronze Medal was awarded.

Cinerarias.—In this class there was a good show and close competition. Mr. J. James, Woodside, Farnham Royal, Slough, showed the best plants, well flowered, good shape, and having individual flowers large, well formed, and of good substance and colour: 2d, Mr. J. Douglas, Great Gearies Gardens, Ilford, who followed very closely; and a good 3d was made by Mr. C. J. Salter, gr. to J. Southgate, Esq., Streatham.

Auriculas, &c.—These were well shown, Mr. J. Douglas having the best lot of show Auriculas, and showed some exceedingly pretty varieties, among which were Sir Lancelot, Rev. Charles Kingsley, Rev. F. D. Horner, and Montrose; Mr. C. Turner was 2d, and this order was reversed with regard to alpines. Mr. J. Douglas was also 1st with Polyanthus, showing very floriferous plants. A very interesting and extensive collection of hardy Primulas was shown by Mr. A. Waterer. This consisted of several hundred plants, and embraced a great variety. The pots were embedded in moss.

Herbaceous and Alpine Plants.—Messrs. Paul & Son, Cheshunt, received the leading awards in both these classes, showing in the herbaceous class Dentaria polyphylla, Corydalis bulbosa, Primula acaulis altaica, and several Violas, &c. In the alpine class a very fine show of interesting plants was made, and among many may be mentioned:—Anemone vernalis, A. Ranunculoides pallida, Primula ciliata purpurea, P. latifolia, P. Wolfeniana, and several other Swiss Primroses; Saxifraga aretioides alba, S. virginica plena, Draba bruniæfolia, Epigæa repens, Androsace Chamæjasme, Houstonia cœrulea, &c. In this class Mr. T. S. Ware was 2d; his group was similar in many respects, but not so comprehensive.

Other exhibits were Amaryllis, which were shown best by Mr. J. Douglas; and 2d, Messrs. Paul & Son, both having many new seedlings. Amaryllis were also shown (not for competition) by Messrs. J. Veitch & Son, Chelsea—a fine lot. Pelargoniums, shown by Mr. D. Phillips, Langley Broom, Slough, who received the premier award for large plants, masses of flower.

Mr. H. Low, Clapton, London, showed a collection of Orchids, including a number of varieties of Odontoglossum crispum and of Miltonia Roezli, which displayed the great variability of these two species. Mr. Low also showed Cypripedium Lawrenceanum, C. ciliolare, Dendrobium Wardianum Lowii (a fine flower), &c.

A large number of pots of Violet Victoria were shown by Mr. J. Chambers, Isleworth (Certificate recommended). Mr. C. Turner, Slough, sent a group of Tree Carnations, to which a Certificate was awarded.

Groups.—Messrs. J. Laing & Co., Forest Hill, London, contributed a very pretty and tastefully arranged group of plants, consisting mostly of Orchids, of which there were many different sorts, such as Cattleyas, Dendrobiums, Ada, Odontoglossum, &c., and these were set off by a variety of foliage plants, the whole being very pleasing.

Mr. B. S. Williams also had a group of plants, consisting of various species of Dendrobium, Cattleya, Ada, Phaius, Erica, Amaryllis, Cliveas, Azaleas, Primulas, &c., and a plant of Ochna multiflora, and was awarded a Small Silver Medal.

An extensive group of Ferns came from Mr. H. B. May, Upper Edmonton, but comprised too many for us to name; it was a very well arranged group, and very interesting. (Large Bronze Medal.)

Botanical Certificates.

To Messrs, Barr & Son, for Narcissus cyclamineus.

To Mr. H. B. May, for Pteris tremula flaccida, very much like P. tremula, but the tips elongated and flaccid.

To Mr. H. B. May, for Pteris Mayi, a crested form of P. cretica, with silvery-green fronds with a darker green margin.

To Mr. J. Douglas, for Primula obtusifolia Gammieana, a new variety, from Sikkim, at 15,000 feet elevation, found in sunny positions. Flowers bright crimson-purple, a port-wine colour, with a golden-yellow eye, borne on a scape about 6 inches long. Very pretty.

Floral Certificates.

To Mr. J. James, for Cineraria Eclipse, carmine-magenta.

To Mr. J. James, for Cineraria Ariel, lilac-pink, with white base.

To Mr. J. James, for Cineraria Jubilee, white, with magenta-rose margin.

To Mr. J. James, for Cineraria Royalty, deep blue.

To Mr. J. Douglas, for Amaryllis Hilda, large flowers; bright scarlet, broad white nerve.

To Messrs. Paul & Son, for Amaryllis R. D. Blackmore, white ground, with heavy crimson-scarlet flame.

To Messrs. Veitch & Son, for Amaryllis Edith Wynne. (See Royal Horticultural Society report last week.)

To Mr. J. Odell, for Cyclamen persicum majesticum, blush, with crimson bases to petals.

To Mr. J. Douglas, for Auricula Tiresias, deep maroon.

To Mr. J. Douglas, for Auricula Rev. Charles Kingsley, purple-violet.

To Mr. J. Douglas, for Auricula Montrose, purple-violet, green-edge, mealy.

To Messrs. Paul & Son, for Rose H.P. Puritan. (See Royal Horticultural Society's report last week.)

SCOTLAND.

EDINBURGH BOTANICAL SOCIETY.

April 14.—The Society met at 55, St. Andrew Square, when Professor Dickson, President, occupied the chair. The following communications were read:—

I. "Observation on the Monthly Increase in Girth of Trees at the Royal Botanic Garden." By Dr. David Christison.

This paper gave the results of monthly measurements of different species of deciduous and evergreen trees in the Edinburgh Botanic Garden from 1883 to 1886. It was ascertained:—

1. That some trees begin to increase in girth in April, but only a very little, and that some continue to grow to a still more trifling extent in September; that the growth of evergreens in May is considerable, but that the main increase of deciduous trees is confined to June, July, and August.

2. The maximum month of growth in most of the deciduous trees examined was July, and in most evergreens June.

3. That the increase in deciduous and evergreen trees in April was about equal, but the latter then went rapidly ahead, so as to accomplish the greater part of their annual increase in the first half of the growing season, while that of deciduous trees took place in the last half. In both classes, however, there were exceptions, and notably the Deodar, which

increased in energy up to August, and accomplished 65 per cent. of its increase in the latter half season.

4. The annual increment in evergreens is spread more equally over the months than that of deciduous trees. Several species of the latter grew more than 50 per cent. in a single month. Some of the results are shown in the table, which gives only those species in which the results are fully reliable. Experiments on many other species have been commenced with the view of ascertaining their characteristics, and whether a general law of distinction between deciduous and evergreen trees can be made out.

Monthly Percentage of Increase of Girth in different Species of Trees, in Edinburgh Botanic Garden or Craigiehall, based on Three Years' Measurements.

	Species.	Number of Trees Measured.	April.	May.	June.	July.	August and September.
Deciduous.	Beech	9	4	7	25	37	27
	Hungary Oak .	3	9	9	20	35	27
	Turkish Oak ...	2	6	14	10	35	35
	Spanish Chestnut	1	9	12	12	36	31
	Liriodendron ...	1	2	5	5	34	54
Evergreen.	Sequoia ...	4	3	24	39	22	12
	Araucaria ...	3	17	23	32	19	9
	African Cedar .	1	5	20	24	25	26
	Cypress ...	1	8	23	31	31	7
	Deodar	4	5	11	19	28	37

II. "Notes on the British Species of Epilobium." By Arthur Bennett, Esq., F.L.S., Croydon.

III. "On the Size and Number of Wood Vessels in relation to the amount of Wood Development." By Mr. Philip Sewell.

IV. "Report on the Progress of Vegetation at the Royal Botanic Gardens, Edinburgh." By W. R. Lindsay, Curator.

The weather during March was rough, with much snow, wind, and frequent frosts. Vegetation having been forced on by the unusual mildness of the preceding month, suffered a severe check, and made little progress till near the end of the month. Compared with last year, the season is still considerably in advance. The thermometer was at or below the freezing point on eighteen nights, collectively 100° of frost were registered for the month as against 134° for the corresponding month last year.

The lowest readings of the thermometer were, on the 12th, 24°; 13th, 18°; 14th, 24°; 15th, 23°; 21st, 24°.

The highest morning readings were, on the 2d, 42°; 3d, 44°; 7th, 35°; 27th, 39°; 31st, 39°.

The lowest day temperatures was 29°, which occurred on the 11th, and the highest 52° on the 30th.

Flowers of Rhododendron præcox, R. Nobleanum, and R. atrovirens were much injured by frost on the 9th, Roses, which had started into growth, had their young leaves slightly browned; no other injury was observed. Snow fell more or less from the 10th till the 22d, which helped to protect spring flowering plants. Thorns, Poplar, and Lilac are well advanced in leaf. Willows, Alder, Elms, Pyrus japonica, Ribes sanguineum and Forsythia viridissima are flowering profusely. Magnolias and Prunus triloba are well set with flower-buds. Spring-flowering bulbous plants are vigorous and flowering well, although cold drying winds and absence of anything like genial rains is beginning to tell on them.

On the rock garden a large number of plants are now in flower. Sixty-five species came into bloom during March, exclusive of those which opened in the previous month, many of which are still flowering. Among the most interesting which opened in March were the following, viz.:—Corydalis angustifolia, Primula denticulata, Erica carnea, Chionodoxa Luciliæ, Saxifraga sancta. S. oppositifolia var. aretioides, S. Burseriana var. Boydii, Puschkinia scilloides, Polygala Chamæbuxus and purpurea, Pachystema Canbyi, Draba Mawei, Anemone Pulsatilla, &c.

Of the forty spring flowering plants whose dates of flowering are annually recorded to the Society the following fifteen came into flower, viz.:—

Scilla bifolia... ...	Mar. 2	Erythronium Dens-canis	Mar. 19
Mandragora officinalis	,, 2	Hyoscyamus scopolia...	,, 23
Scilla bifolia alba ...	,, 4	Narcissus Pseudo-Narcissus	,, 23
Sisyrinchium grandiflorum	,, 4	Ribes sanguineum ...	,, 23
Orobus vernus	,, 6	Corydalis solida ...	,, 26
Sisyrinchium grandiflorum album	,, 8	Draba aizoides... ...	,, 28
Narcissus pumilus ...	,, 14	Adonis vernalis ...	,, 29
Aubrietia grandiflora...	,, 19		

V. "Report on the Temperatures and Vegetation at the Glasgow Botanic Garden." By Mr. B. Bullen, Curator: March, 1887.—During the month the night temperature has fallen below the freezing point twenty times, and several times very near it. The total frost registered this month is 117°. During the corresponding month last year the total was 139°. We have experienced a low temperature this month; but last year the temperature for the corresponding period was unusually so. The lowest reading was 16° during the night of the 12th. The lowest day reading was 32° on the 11th, when considerable snow fell. Rain and snowstorms have been light as compared with most other districts. Although an average number of fine days are recorded, outdoor gardening work has been retarded by the frequent frosts, &c. The same may be said as regards vegetation generally, for little progress has been made. Many plants, so much in advance of the season last month, have suffered slightly.

VI. Miscellaneous:—Mr. Lindsay exhibited plants in flower of Primula obtusifolia var. Gammieana and P. glabra, raised from seeds presented to the garden by Dr. King, of Calcutta, in January last. The former has large flowers, dark purple in colour, and is a great acquisition to this fine family; the latter has small heads of flower, somewhat like a miniature P. capitata. Also two plants of Primula Reidi, figured in the *Gardeners' Chronicle*, November 27, 1886, p. 693, raised from seeds presented by Miss Reid, in October, 1885; P. denticulata erosoides, P. Olgæ, P. viscosa, seedling varieties, having large, well-coloured flowers.

VARIORUM.

Science and Art.—Practice is often spoken of as if it were altogether distinct from science, and inconsistent with it. We hear science and practice spoken of as if in opposition, and sometimes as if they were mutually distrustful. I will not deny that strange contrasts of the practical and the scientific may be found among us, but these contrasts are constantly becoming more rare, and it is an excellent influence of scientific societies that they tend to cultivate the scientific mind and to maintain it in the practical life. For what practice may be depends, in all respects, much more on the person engaged on it than on its own subject matter. . . . It may be a mere useful art practised by one who has neither love for nor knowledge of any science, or to the man of scientific mind it may be a thoroughly scientific study as well as an applied science. . . . Practice is full of opportunities for science. Reflections on any day's work in practice may convince us that we have been using a good deal of knowledge or belief which we cannot explain by its relation with other knowledge. *Sir James Paget.*

Sub-tropical Plants in Small Gardens.—These, of course, are named as best sites, but the owner of a small village garden, who—as a matter of course—has no choice of sites, need not despair. If he only has shelter, he may, if so inclined, have a first-rate sub-tropical bed. Say, for instance, he has a large circular bed, and wishes it planted effectively after the sub-tropical fashion; here is the arrangement. In the middle plant a large clump of the hardy Bamboo (Bambusa metake), or else of New Zealand Flax (Phormium tenax); then three plants, equal in size, of seedling Acacia lophantha; and next six plants of Grevillea robusta; the outer row of all being twelve plants of variegated Abutilon: the edging to be the hardy variegated Plantain Lily (Funkia ovata variegata). All these plants can be bought at the price usually paid for common Pelagoniums, and are, therefore, within the reach of all. The bed can be filled out either with flowering or foliage plants; considering the position, we should advise the former, the kinds to be either Pelagoniums or Fuchsias, or both in mixture. Should foliage plants be preferred, variegated Thyme, Golden Feather Pyrethrum, or any of the mossy selection of Sedums would be appropriate. *Cassell's Popular Gardening.*

Obituary.

Richard Carr.—We regret to announce the death, under very painful circumstances, of Mr. Richard Carr, Head Gardener to the Duke of Portland, Welbeck Abbey. His death was due to an inadvertence in stepping from a railway carriage whilst in motion, at Retford Junction, on returning from a journey to London, on Wednesday, the 13th inst. He fell between the footboard and the platform, and was carried a distance of more than 40 yards, receiving internal injuries, to which he succumbed about three hours' afterwards. Mr. Carr made many changes and alterations in the gardens at Welbeck, which are several hundred acres in extent, the kitchen garden alone being about 36 acres. He put this department into thorough working order, the walls being planted with the choicest sorts of fruit trees for the consumption of one of the largest establishments in England, giving the greatest satisfaction to his employer. The planting and laying down of this large extent of ground, which some forty years ago was covered with bricks, stone, and mortar heaps, and the *débris* from the continued building work that had been carried on, was executed by him. Some short time since Mr. Carr was presented with a valuable gold watch by the Duke of Portland as a recognition of valuable services rendered. He was one of the most intelligent of gardeners, and enjoyed the confidence of his employer. He was interred on Saturday last at Cuckney, many of his gardening friends being present at the ceremony. The deceased, who was fifty-seven years of age, leaves a widow and eight children,

THE WEATHER.

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING APRIL 30. (AVERAGE OF THIRTY-THREE YEARS.)

April 24	49°.5	April 28	50°.1
,, 25	49°.6	,, 29	50°.4
,, 26	49°.7	,, 30	50°.7
,, 27	49°.8	Mean for the week ...	50°.0

THE PAST WEEK.

The following summary record of the weather for the week ending April 18, is furnished from the Meteorological Office:—

"The *weather* has continued fine and dry in all parts of the kingdom. The nights were generally very cold, while the days were bright, and on some occasions rather warmer than they have been of late.

"The *temperature* has remained below the mean in all districts, the deficit ranging from 2° to 4° in Ireland and Scotland, to 5° over the northern parts of England, and to 6° or 7° in the other English districts. The highest of the maxima, which were recorded either on the 12th, 17th, or 18th, varied from 58° in 'Scotland, N.,' to 66° in the 'Midland Counties' and 'England, S.,' and to 67° in 'Scotland, E.' The lowest of the minima, which were registered on irregular dates, were unusually low for the time of year. In the 'Midland Counties' (at Cirencester) the thermometer fell to 20°, in 'England, S.W.' (at Llandovery) to 21°, in 'England, S.' to 22°, and in 'Ireland, S.' and 'England, E.' to 23°; in Scotland and the north of Ireland they were a few degrees higher, ranging from 24° to 29°, while in the 'Channel Islands' the lowest reading was 34°.

"The *rainfall* has been scarcely appreciable in any part of the kingdom. Over central and south

western England and in the south of Ireland and the Channel Islands the weather has been quite rainless.

"*Bright sunshine* has been more prevalent generally than any recorded since the week ending September 20, 1866. The percentage of the possible amount of duration ranged from 38 to 57 in the 'wheat-producing' districts, and from 51 to 73 in the 'grazing' districts. In 'Scotland, N.' the percentage was 32, and in the 'Channel Islands' 65."

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 32° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature.		Accumulated.		
	Above or below the Mean for the week ending April 18.	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 4, 1887.	Below 42° difference from Mean since Jan. 4, 1887.
Principal Wheat-producing Districts.		Day-deg.	Day-deg.	Day-deg.	Day-deg.
0. Scotland, N. ...	3 below	20	42	+ 33	+ 30
1. Scotland, E. ...	2 below	38	23	+ 52	+ 16
2. England, N.E. ...	5 below	20	34	— 5	+ 79
3. England, E. ...	7 below	26	39	— 88	+ 169
4. Midland Cos. ...	6 below	32	42	— 63	+ 160
5. England, S. ...	7 below	28	37	— 78	+ 155
Principal Grazing, &c., Districts.					
6. Scotland, W. ...	3 below	36	21	— 6	+ 38
7. England, N.W. ...	5 below	24	31	— 51	+ 121
8. England, S.W. ...	6 below	38	22	— 74	+ 163
9. Ireland, N. ...	3 below	44	17	+ 17	+ 21
10. Ireland, S. ...	4 below	47	21	— 19	+ 85
— Channel Islands	4 below	31	3	— 133	+ 78

Districts.	Rainfall.			Bright Sunshine.	
	More or less than the Mean for the Week.	No. of Rainy Days since Jan. 4, 1887.	Total Fall since Jan. 4, 1887.	Percentage of possible duration for the Week.	Percentage of possible Duration since Jan. 4, 1887.
Principal Wheat-producing Districts.	Tenths of Inch.		Ins.		
0. Scotland, N. ...	3 less	63	12.4	32	24
1. Scotland, E. ...	5 less	45	5.5	38	33
2. England, N.E. ...	4 less	43	4.0	43	33
3. England, E. ...	4 less	36	3.8	57	36
4. Midland Cos. ...	5 less	36	4.2	48	30
5. England, S. ...	4 less	36	4.4	49	31
Principal Grazing, &c., Districts.					
6. Scotland, W. ...	5 less	49	9.8	59	31
7. England, N.W. ...	4 less	40	6.0	51	33
8. England, S.W. ...	6 less	39	5.5	71	41
9. Ireland, N. ...	5 less	48	7.3	56	32
10. Ireland, S. ...	7 less	41	7.8	73	40
— Channel Islands	6 less	44	4.7	65	47

Notices to Correspondents.

A Curtain of Creepers: *L. G. P.* Passiflora cœrulea, Clematis flammula, and hybrid Clematises; Caprifolium (Honeysuckles) in variety; Menispermum canadense, and Aristolochia sipho, Ampelopsis hederacea, A. Veitchi, Bignonia capreolata, Jasminum revolutum.

Asphalte Walk: *J. D.* You mean, probably, a gas tarred one, which may be made by taking two parts of very dry lime rubbish, and one part of coal ashes, also very dry. Make a heap in a dry place, and into a hole made in the middle of this pour boiling coal tar: mix, and when as stiff as mortar, put it 3 inches thick where the walk is to be: the ground should be beaten smooth: sprinkle over the tar materials coarse sand. When cold pass a roller over it.

Beetles: *C. T.* You are not a very careful reader of the *Gardeners' Chronicle*, or you would remember that these have often been figured and described. Lay pieces of Carrot about the house, and go round at night and immolate your enemies.

Burton's New Indian Tobacco-paper for Fumigation: *A. B.* We do not know where this is to be obtained. Apply to some of the horticultural sundries-men.

Chickweed: *G. Payne.* We have no knowledge of this plant being injurious to young lambs. The seeds of the native species are the common food of finches and small birds. The common Chickweed (Stellaria media) has a line of hairs on one side of the stem, and a few on the leaf, so that if the plant were eaten in large quantities evil results might possibly follow, though we doubt it.

Dendrobiums: *A. W.* The sport on Dendrobium nobile is a case of trilabellia, the petals partaking of the form and colour of the lip. D. nobile Tollianum and D. n. Cooksonianum are instances of the same thing, and they are now quite constant in gardens. By propagating from the pseudobulb from which these flowers were taken you may perpetuate this.

Flowers of Peach Trees Falling Off: *One Anxious to Know.* The flowers are fertilised; and as you state the roots and soil are in a good state the evil may be traced probably to the action of ants or weevils: the latter depredators work by night, and too often escape observation.

Flower-buds of Tacsonia Van Volxemi Falling off: *W. P. H.* The roots may be in a bad condition, or too much or too little water may have been given. Examine them, for we think the cause of bud-dropping lies there.

Grapes Newly Planted: *An Amateur.* Something will depend on the height of your front wall. As a general rule Vines may be cut back to the point where the glass begins. If you fear to prune back because of bleeding of the wounds, disbud down to the point named as soon as you can fairly lay hold of the young shoots.

Ice Gales: *D.* The trees we find to resist frosty winds the best are Picea nigra, the Black Spruce; P. excelsa, the Norway Spruce; Pinus austriaca, the Black Austrian Pine; P. silvestris, the Scotch Pine; and Juniperus communis, Ulmus alata, the Winged Elm; and the common Birch. Of shrubs Mahonia aquifolia, Kalmia angustifolia, Gualtheria Shallon, and the common Privet may be recommended.

Large Cineraria Blooms: *J. H. S.* The colours and their arrangement are very charming; the size is abnormal, but all are wanting in the desirable quality of substance; hence the outline of the individual flower is lost. To many, however, these plants would afford more satisfaction than the stiff florists' ideals.

Muriatic Acid for Weeds: *F. T. D.* A quantity of half a pint to a gallon of water. This proportion is fatal to vegetable, animal, and insect life, but it may be increased if the result be not found satisfactory.

Names of Plants: *T. P.* Cornus mas.—*R. T.* 1, Sisirhynchium grandiflorum; 2, Sanguinaria canadensis.—*W. H. M.* Myrsine africana.—*W. C. B.* Probably Rhododendron Thomsoni.—*A. H.* should address such questions to the Editor. 2, Akebia quinata; 5, Veronica Traversii. The Ferns next week.

Skeleton Leaves: *E. H. H.* Apply to Mrs. Hodkinson, 5, Beaufort Avenue, Withington, near Manchester—not Willington, as stated in the issue for April 9.

Supposed Case of Fungoid Disease on Fuchsias: *G. B.* There is no mildew on the Fuchsia leaves. The Onagraceæ are remarkably free from mildews. The white stains seem to be deposits from the water used, either from the watering-pot, syringe, or by condensation. All the spots contain Nematoid worms such as are illustrated in a recent number of the *Gardeners' Chronicle* (see p. 488). The microscopic worms came from the soil or the water.

Vine Leaves: *A. A.* These have damp decaying places with common mould upon them—possibly due to imperfect ventilation and to too much vapour, but no letter was sent, so we do not know the conditions under which the plants grew.—*J. T. P.* The warts on the under surface of the leaf are attributable to too close moist an atmosphere: give more air.

CATALOGUES RECEIVED.

Wm. Paul & Son, Waltham Cross, Herts—Roses and Florists' Flowers.

Charles Turner, Royal Nurseries, Slough—Soft-wooded and Stove and Greenhouse Plants.

Merryweather & Sons, 63, Long Acre, London, W.C.—Garden Engines, Hose, Pumps, &c.

Hooper & Co. (Limited), Pine-apple Nursery, Maida Vale, London, W.—Spring Plant List.

M. Bruant, Boulevard St. Cyprien, Poitiers, Vienne, France—General Flower Catalogue.

A. F. Meert-Van Malderen, Lebbeke-lez-Termonde, Belgium—Gladioli.

Communications Received.—J. H., Trinidad.—W. B.—W. E., Leipsic.—Dr. W. (the list shall be given).—Royal Institution.—R. McL.—Lucien Linden, Ghent (with many thanks).—J. Z.—Carnation.—W. B.—L. J.—Wild Rose.—H. E.—J. Webster.—J. G. Baker.—J. L.—N. E. B.—T. C.

Enquiries.

"*He that questioneth much shall learn much.*"—Bacon.

Juice of Cucumbers.—Can any one inform me of the best method of extracting juice from Cucumbers, to be put in bottles and taken on a long sea-voyage, for ladies' toilet uses? *Young Foreman.*

Markets.

COVENT GARDEN, April 21.

Some fair samples of new Grapes to hand, selling freely at prices quoted. Strawberries in good demand. Business generally improving. *James Webber, Wholesale Apple Market.*

Fruit.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Apple, ½-sieve	1 6– 5 0	Lemons, per case ...	12 0–21 0
— Nova Scotia, brl.	8 0–12 0	Pears, per dozen ...	2 0– 4 0
Grapes, new, per lb.	8 0–10 0	Pine-apples, Eng., lb.	1 0– 1 6
— old, per lb. ...	4 0– 8 0	— St. Michael, each	1 6– 6 0
Kent Cobs, 100 lb. ...	60 0– ...	Strawberries, per lb.	4 0– 8 0

Vegetables—Average Retail Prices.

	s. d. s. d.		s. d. s. d.
Artichokes, per doz. ...	6 0– ...	Lettuce, Cos., Fr., each	0 6– ...
Asparagus, French, per bundle	4 0–12 0	Mushrooms, punnet	1 6– 2 0
— English, per 100	8 0– ...	Mustard and Cress, punnet	0 4– ...
Beans, Kidney, lb. ...	1 6– ...	Onions, per bushel ...	4 0– ...
Beet, red, per dozen	1 0– 2 0	Parsley, per bunch ...	0 6– ...
Carrots, per bunch ...	0 6– ...	Peas, per quart ...	6 0– ...
Cauliflowers, per dozen	3 0– ...	Potatos, per cwt. ...	4 0– 5 0
Celery, per bundle ...	1 6– 2 0	,, kidney, per cwt.	4 0– 5 0
Cucumbers, each ...	0 6– 1 0	Rhubarb, per bundle	0 6– ...
Endive, per dozen ...	3 0– ...	Seakale, per punnet	2 6– ...
Green Mint, bunch ...	1 0– ...	Shallots, per lb. ...	0 3– ...
Herbs, per bunch ...	0 4– ...	Spinach, per bushel ...	4 0– ...
Leeks, per bunch ...	0 3– ...	Sprue, bundle ...	1 0– ...
Lettuce, per dozen ...	1 6– 2 0	Tomatos, per lb. ...	4 0– ...
		Turnips, new, bunch	1 0– ...

Potatos.—Markets very heavy, at the following prices:—Regents, 80*s.* to 100*s.*; Magnums, 70*s.* to 110*s.* per ton.

Plants in Pots.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz.	6 0–18 0	Foliage plants, various, each ...	2 0–10 0
Arum Lilies, dozen ...	9 0–12 0	Fuchsias, doz. ...	9 0–12 0
Azaleas, per dozen ...	24 0–42 0	Genistas, per doz. ...	8 0–12 0
Cinerarias, per doz. ...	6 0– 9 0	Hydrangeas, doz. ...	9 0–12 0
Cyclamens, dozen ...	10 0–18 0	Lilium longiflorum, per dozen	24 0–36 0
Cyperus, per dozen .	4 0–12 0	Lily-of-Val., 12 pots	12 0–18 0
Daffodils, 12 pots ...	9 0–10 0	Marguerite Daisy, per dozen	6 0–12 0
Dracæna terminalis, per dozen ...	30 0–60 0	Mignonette, doz. ...	6 0– 9 0
— viridis, per doz.	12 0–24 0	Myrtles, per dozen ...	6 0–12 0
Erica, various, per dozen	18 0–42 0	Palms, in var., each	2 6–21 0
Euonymus, in var., per dozen	6 0–18 0	Pelargoniums, dozen	12 0–18 0
Evergreens, in var., per dozen	6 0–24 0	— scarlet, per doz.	4 0– 8 0
Fairy Roses, doz. ...	10 0–12 0	Rhodanthe, dozen ...	6 0– 9 0
Ferns, in variety, per dozen	4 0–18 0	Roses, various, doz. ...	18 0–30 0
Ficus elastica, each .	1 6– 7 0	Solanums, per dozen	9 0–12 0
		Spiræa, per dozen ...	12 0–18 0
		Tulips, 12 pots ...	6 0– 8 0

Cut Flowers.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Anemone, 12 bun. ...	3 0– 6 0	Marguerites, per 12 bunches	3 0– 6 0
Arum Lilies, 12 blms.	3 0– 5 0	Mignonette, 12 bun.	3 0– 6 0
Azaleas, 12 sprays ...	0 6– 0 9	Pelargoniums, scarlet, 12 sprays ...	0 4– 0 9
Bouvardias, per bun.	0 6– 1 0	Primroses, 12 bun....	0 6– 1 0
Camellias, 12 blooms	1 0– 3 0	Primulas, double, 12 sprays	0 9– 1 0
Carnations, 12 blms.	1 0– 3 0	Roses, Tea, per doz.	1 0– 2 0
Cyclamen, 12 blooms	0 4– 0 6	— coloured, dozen.	3 0– 6 0
Daffodils, single, 12 bunches	1 6– 4 0	— red, French, doz.	1 6– 2 0
— double, 12 bun.	2 0– 4 0	— Saffrano, dozen...	1 0– 1 6
Eucharis, per dozen	4 0– 6 0	Spiræa, 12 bunches..	6 0– 9 0
Gardenias. 12 blooms	1 6– 3 0	Tropæolums, 12 bun.	1 0– 2 0
Heliotropes, 12 spr.	0 6– 1 0	Tuberoses, 12 blms....	1 0– ...
Hyacinths (in boxes from Holland), box	1 6– 4 0	Violets, 12 bunches...	0 4– 0 9
Jasmine, white, bun.	0 6– 0 9	— Parme, French, per bunch	2 0– 3 0
Lilies of the Valley, 12 sprays	0 6– 1 6	— Czar, Fr., bunch	0 9– ...
Lilium longiflorum, 12 blooms	4 0– 6 0	Wallflowers, 12 bun.	3 0– 6 0

SEEDS.

London: *April* 20.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., report a steady sowing demand for field seeds, which demand some warm rains would greatly increase. Choice English Cloverseed is getting into very narrow compass; foreign samples are, however, still obtainable on unusually low terms. Alsike, white Clover, and Trefoil are also exceedingly cheap. In perennial and Italian Rye-grasses there is no change to note. Spring Tares meet a fair inquiry. In Hemp and Canary seed there is but little business passing. More money is asked for Rape seed. Feeding Linseed is easier.

FRUIT AND VEGETABLES.

Columbia (East London): *April* 20.—Good supplies of vegetables; trade fair at lower prices. Fruit trade dull. Quotations:—Apples (American), 10*s*. 6*d*. to 21*s*. per barrel; spring Cabbages, 5*s*. 6*d*. to 8*s*. per tally; Savoys, 2*s*. 6*d*. to 4*s*. 6*d*. do.; Greens, 2*s*. to 2*s*. 6*d*. per dozen bunches; Sprouting Broccoli, 1*s*. 6*d*. to 1*s*. 9*d*. per sieve; Turnip-tops, 1*s*. to 1*s*. 6*d*. do.; Rhubarb, 1*s*. 6*d*. to 3*s*. per dozen bundles; Beetroots, 4*d*. to 6*d*. per dozen; Onions (English), 5*s*. to 5*s*. 6*d*. per cwt.; foreign do., 3*s*. 6*d*. to 4*s*. 6*d*. per bag; Carrots, 16*s*. to 24*s*. per ton; Mangels, 11*s*. to 12*s*. 6*d*. do.

Stratford: *April* 19.—A brisk trade was done at the undermentioned quotations:—Cauliflowers, 1*s*. 9*d*. to 2*s*. per dozen; Carrots, households, 20*s*. to 30*s*. per ton; do., cattle feeding, 18*s*. to 20*s*. do.; Mangels, 18*s*. to 20*s*. do.; Swedes, 18*s*. to 20*s*. do.; Onions, Dutch, 4*s*. to 4*s*. 6*d*. per bag; do., English, 1*s*. 9*d*. to 2*s*. per bushel; Apples, 3*s*. to 3*s*. 6*d*. per peck; Rhubarb, 2*s*. to 3*s*. per dozen bundles; Cress, in basket, 3*s*. to 4*s*. per dozen baskets; Watercress, 6*d*. per dozen.

POTATOS.

King's Cross: *April* 18.—The following are the prices obtained in the station yard for the week ending April 16, all for good samples:—Magnum Bonums, Beds, 70*s*. to 75*s*.; Blackland, 62*s*. 6*d*. to 65*s*.; Lincolns, 60*s*. to 70*s*.; Kents, 75*s*. to 80*s*.; Yorks, 90*s*. to 100*s*; Scotch, grey soil, 75*s*. to 90*s*.; do., red soil, 120*s*. to 130*s*. per ton. Regents:—Lincolns, 65*s*. to 70*s*.; Kents, 80*s*. to 90*s*.; Yorks, 70*s*. to 75*s*.; Scotch, grey soil, 70*s*. to 75*s*.; do., red soil, 90*s*. to 110*s*. per ton. Beauty of Hebron:—Lincolns, 100*s*. to 110*s*. per ton. Champions:—Lincolns, 60*s*. to 65*s*.; Kents, 65*s*. to 70*s*.; Scotch, grey soil, 65*s*. to 70*s*.; do., red soil, 75*s*. per ton.

During last week 380 trucks arrived at King's Cross, and 454 emptied; 84 arrived to-day, and 459 are in stock. You will notice that the stock in the straion-yard is rapidly decreasing, and consequently any good stuff is in good demand at high prices, *i.e.*, Magnums of first-rate quality reaching 100*s*. to 130*s*. per ton: the latter quotation is for red soil, Regarding Jersey new Potatos, a telegram has reached me to-day, saying:—"Season backward, weather cold, not likely to ship until June." *F. W. Foord.*

April 20.—My Jersey correspondent, writing on the 18th inst., says:—"Since our last of March 29 we have had a continuation of sharp easterly winds, with cold nights and exceedingly dry weather. The Potatos show above ground, but do not progress, and we hear that some districts have suffered from hoar frost last night. We fear that unless grown under glass and very early spots, which would be a very small quantity, there will be nothing done till June. The grass crops are still worse. We want rain and mild weather badly." *F. W. Foord.*

Gravel!—Gravel!—Gravel!

JOHN KNIGHT, Upper Bourne, Farnham, having a very large quantity of beautiful Red Binding Farnham GRAVEL for Carriage Drives and Garden Paths, will sell the same at a very reasonable price, as the ground must be cleared. Apply as above.

CERTAIN SUDDEN DEATH

To all Grubs, Aphis, Lice, Red Spider, Thrip, Mealy Bug, Caterpillars, &c., &c.

PERFECTLY HARMLESS } to the Hands and Skin, but will cure Ringworm in Animals, and all Diseases produced by parasites.

FIR TREE OIL (SOLUBLE) INSECTICIDE

A combination of Hydrocarbon Oils, made soluble in Water, for Destroying ALL INSECTS & PARASITES that infest Trees and Plants, whether at the Roots or on the Foliage.

Sold by Seedsmen and Chemists, 1s. 6d, 2s. 6d, & 4s. 6d; ½ gallon 7s. 6d, 1 gallon 12s. 6d, or less in larger quantities.

A Treatise on FIR TREE OIL as an INSECTICIDE, its application to Plants and Animals, sent Post free on receipt of address, by the Manufacturer,

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Wholesale: Hooper & Co.; Corry, Soper, Fowler & Co.; C. E. Osman & Co.; and from all the London Seed Merchants and Wholesale Patent Medicine Houses. NEW YORK—Rolker & Sons.

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Throws a fine spray 20 ft., and a jet 30 ft., with great force. A splendid substitute for the Syringe for using Insecticide, Price 25s. A larger size for watering purposes, 45s.

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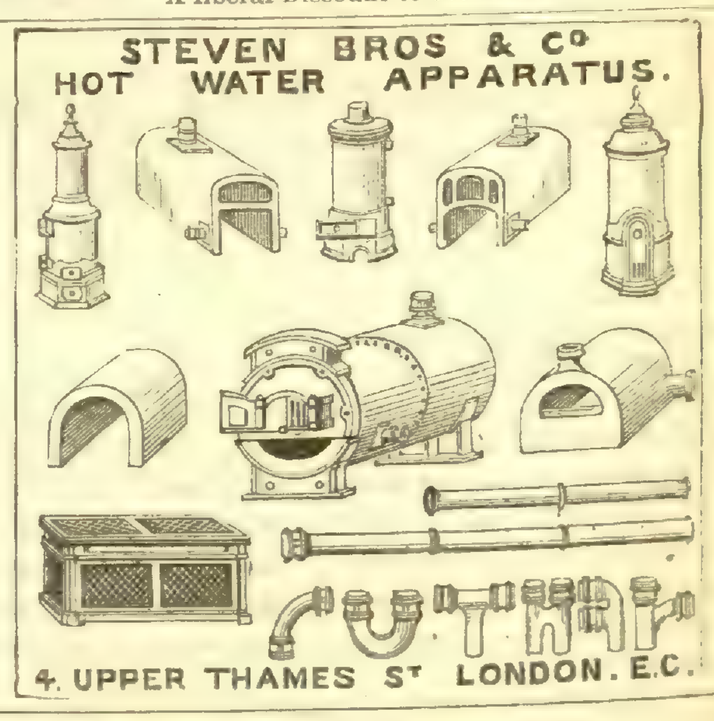

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"The 'ARCHIMEDEAN' did the BEST WORK of any Lawn Mower exhibited."

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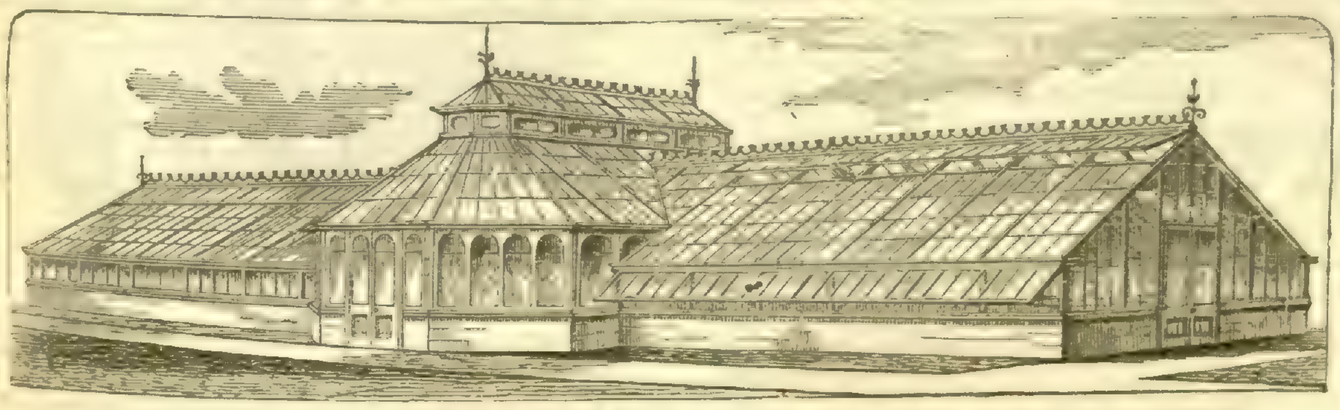

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Vineries, Stoves, Greenhouses, Peach Houses, Forcing Houses, &c., constructed on our improved plan, are the perfection of growing houses, and for practical utility, economy, and durability cannot be equalled. We only do one class of work, and that THE VERY BEST.

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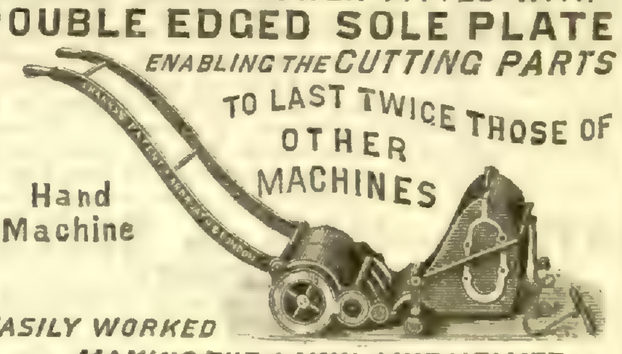
THE ONLY LAWN MOWER FITTED WITH

DOUBLE EDGED SOLE PLATE

ENABLING THE CUTTING PARTS TO LAST TWICE THOSE OF OTHER MACHINES



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MAKING THE LAWN LIKE VELVET

DOES NOT GET OUT OF ORDER

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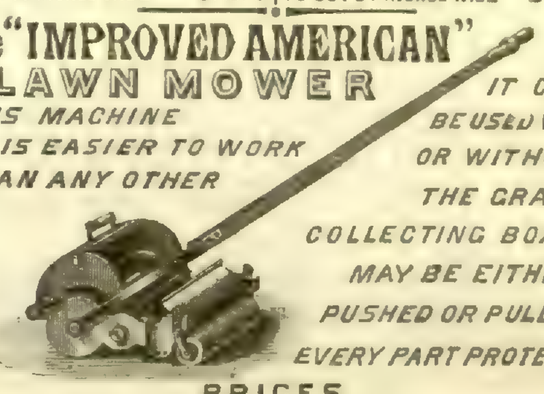
To cut 12 inches wide	4. 10. 0	To cut 22 inches wide	8. 10. 0
To cut 14 inches wide	5. 10. 0	To cut 24 inches wide	9. 0. 0
To cut 16 inches wide	6. 10. 0		

The "IMPROVED AMERICAN" LAWN MOWER

THIS MACHINE IS EASIER TO WORK THAN ANY OTHER



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MAY BE EITHER PUSHED OR PULLED

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10 inch machine	£3. 0. 0	14 inch machine	£4. 15. 0
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SMALL LAWN MOWERS

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NORWEGIAN
FISH-POTASH GUANO

has given splendid results with

VINES, ROSES, CHRYSANTHEMUMS, AND TENNIS LAWNS.

The following Analysis is guaranteed:—

7 per cent. Ammonia.	20 per cent. Phosphates.
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Only 5 per cent. Moisture.

RETAIL PRICES, CARRIAGE PAID.

2 lb. Tin, 1s.; Bags, 7 lb., 2s.; 14 lb., 4s.; 28 lb. 6s. 6d.; 56 lb., 10s. 6d.; 1 cwt., 16s.; 2 cwt., 30s. Bags free.

Write for Testimonials and Directions for Use.

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100 MILES of GARDEN NETTING for Protecting FRUIT TREES, SEED-BEDS, PLANTS, FLOWERS, &c., 1-inch mesh, 100 yards by 2 yards, or 50 yards by 4 yards, price 10s. each, carriage paid. Hundreds of Testimonials. Any size made to order. Trade supplied. Special quotations for large quantities. LAWN TENNIS BOUNDARY NETS, HAMMOCKS, FLAGS, CRICKET, SALMON, RABBIT, and FISHING NETS.
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For Preserving Ironwork, Wood, or Stone.

It is applied cold, and may be laid on by any farm labourer or other unskilled person. It dries quickly, giving a hard, brilliant polish, and looks equally as well as oil paint, yet at one-fourth the cost. Price:—Black, 1*s.* 6*d.* per gallon, in casks containing not less than nine gallons, delivered at most railway stations. Casks extra. Brushes for coating Ironwork, Wood, or Stone, 1*s.* each.

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HORTICULTURAL BUILDERS AND HEATING ENGINEERS,

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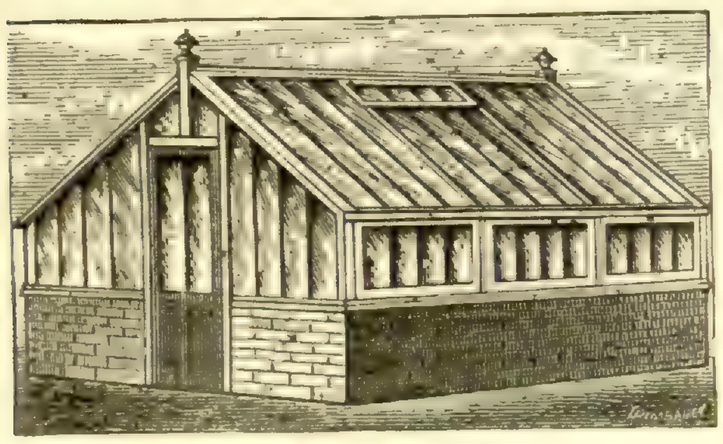

Length.	Width.		Length.	Width.	
10 by 8 ft.	£7 7 0		30 by 12 ft.	£23 19 6	
15 by 10 ft.	11 15 0		40 by 14 ft.	34 9 0	
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LEAN-TO and THREE-QUARTER SPAN same prices as above.
PIT FRAMES equally cheap.

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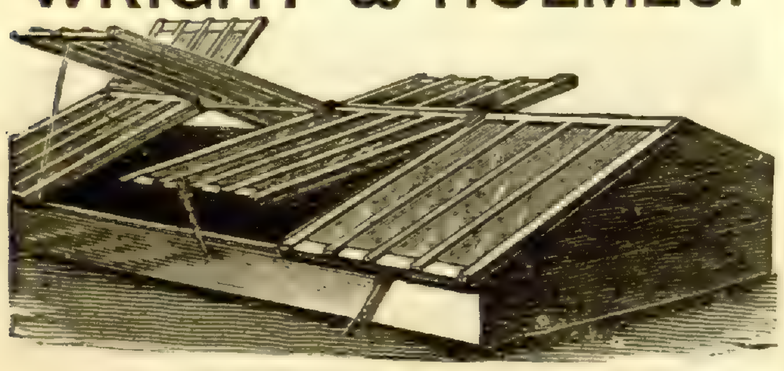

Figure 5.—Three-quarter Span Frame.

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Length.	Width.	Price.
8 feet	... 6 feet	... £4 10 0
12 ,, ...	... 6 ,, ...	... 6 3 0
16 ,, ...	.. 6 ,, ...	... 7 18 0
20 ,, ...	... 6 ,, ...	... 9 12 6
24 ,, ...	... 6 ,, ...	... 11 10 0

Illustrated CATALOGUE post-free on application to

WRIGHT & HOLMES,
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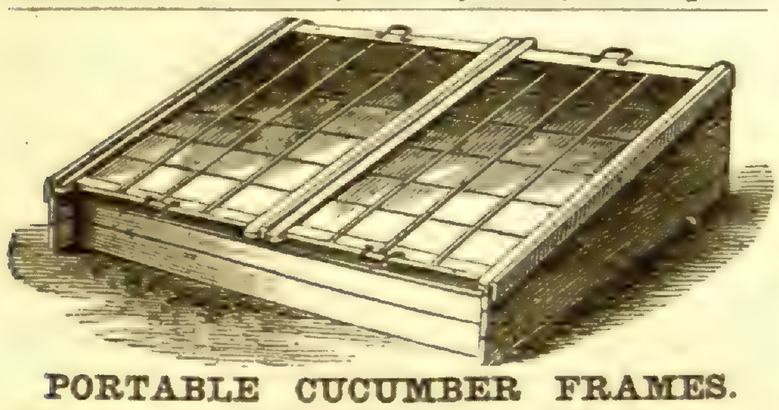

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		£ s. d.
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3-light frame, 12 feet by 6 feet		5 5 0
6-light frame, 24 feet by 6 feet		10 0 0

The glass is nailed and puttied in. Lights and framing for brick pits at proportionately low prices.

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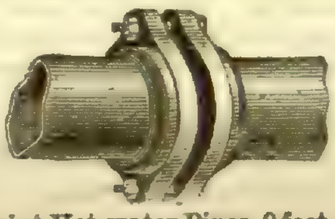
DENNIS PARK IRONWORKS, STOURBRIDGE,

The "Expansion Joint."



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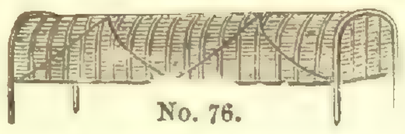

No. 76.

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3 feet long.
Galvanised after made.
Either pattern.
Price, 5s. per dozen.
Two end pieces included with each dozen.
4 dozen carriage paid to any station within 100 miles on receipt of remittance for **21s.**

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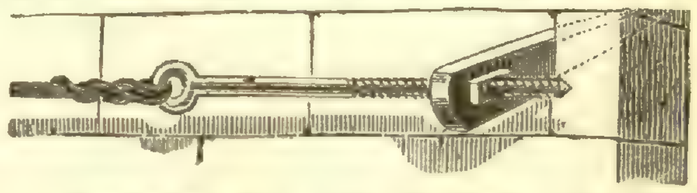

Straining Bolt and Holdfast.—No. 635.
As illustrated above, price 3*s.* 3*d.* per doz.

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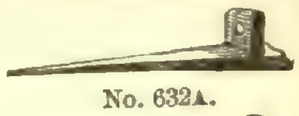
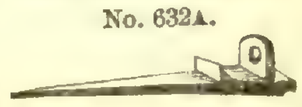


Per doz. **2s.**

No. 632A.



2 2½ 3 3½ inches. **2s. 6d.**
3d., 4d., 5d., 7d. per doz.

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CONSERVATORY BLINDS made to order,
of Plain or Striped Material.

NEW CANVAS SHADING.

It is perfectly rot-proof, keeps sound under conditions where other fabrics have shown fungoid growth and incipient decay.

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BLACK VARNISH

for preserving Ironwork, Wood, or Stone.

(Registered Trade Mark.)

An excellent substitute for oil paint, at one-third the cost. Used in all London Parks, at Windsor, and Kew Gardens, and on every important estate in the Kingdom. Has stood the test of forty years' trial. Requires no mixing; can be applied cold by any ordinary labourer.

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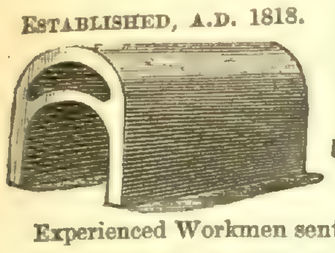

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14×12	20×15
16×12	20×16
18×12	22×16
20×12	24×16
16×14	20×18
18×14	22×18
20×14	24×18

21-oz. Foreign of the above sizes, in 100 and 200 feet boxes, 3ds and 4ths qualities, always kept in stock.

A large stock of similar current sizes of **15-oz.** glass in 200 feet boxes.

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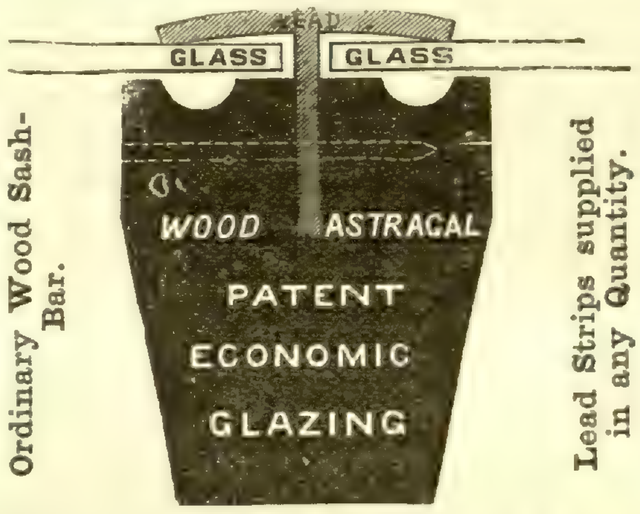

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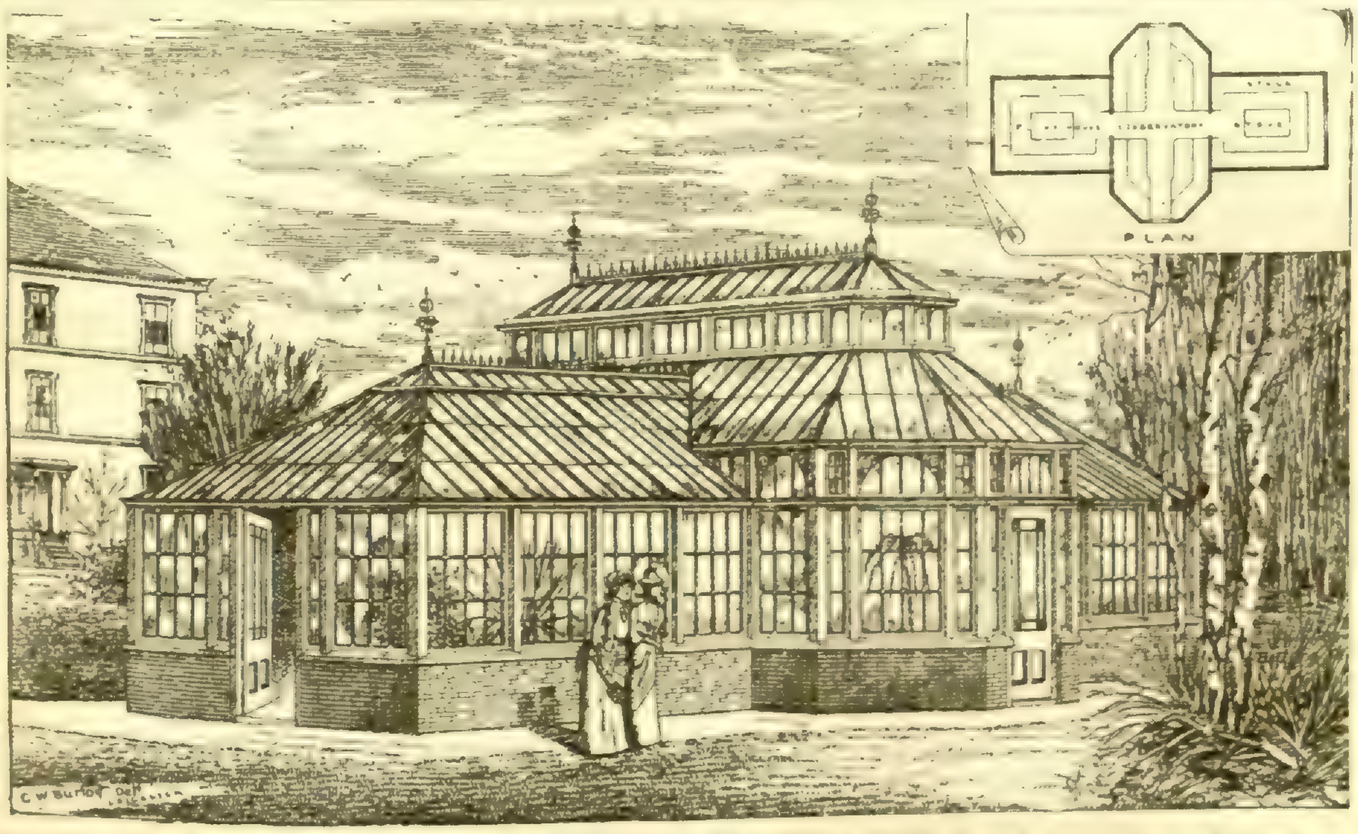

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JOURNEYMAN (First), in the Houses under a Foreman.—Age 22; eight years' experience and character. Well recommended.—E. N., Croft House, Bridge Street, Witham, Essex.

JOURNEYMAN (First); age 23.—H. Wingrove, The Gardens, Rousham Park, Oxford, will be pleased to recommend a young man as above. Steady and obliging, with a good knowledge of his work.

JOURNEYMAN (First), in a good establishment; age 21.—Mr. E. Gibbs will be very pleased to recommend a young man as above; has been with him four years.—M. A. WISE, Eythorpe, Aylesbury, Bucks.

JOURNEYMAN, in a Gentleman's establishment.—Ten years' experience. Good character, State wages, &c.—JOSEPH HORNER, Farmby, near Bedale, Yorks.

JOURNEYMAN, in a good establishment.—Age 25; can be well recommended. Two years in present situation.—F. METHERELL, Gardens, Thorpe Lee, Egham.

JOURNEYMAN, in the Houses, or Inside and Out, in a gentleman's establishment.—Age 21; six years' good experience.—A. J., 1, Brownlow Road, Church End, Finchley.

JOURNEYMAN, in a good establishment; age 20.—C. H. Perkins, Gardener, Milton Abbey, Blandford, Dorset, can with confidence recommend a young man as above.

JOURNEYMAN, in the Houses; age 19.—F. Cornish, The Gardens, Joldwynds, Dorking, can thoroughly recommend a young Man as above.—For particulars, apply as above.

JOURNEYMAN, in a good establishment.—Age 23; seven years' experience; excellent references from present and previous employers.—J. BROOKS, The Gardens, Ruxley Lodge, Esher, Surrey.

JOURNEYMAN, in a Gentleman's establishment or Nursery.—Age 20; six years' experience. Two years' good character from present employer.—G. LANE, The Gardens, Sherborne Castle, Dorsetshire.

JOURNEYMAN, in the Houses, under a Foreman; no objection to good Inside and Out.—Age 21; good character.—C. HYATT, Cannon Hall Gardens, Barnsley, Yorkshire.

JOURNEYMAN, or SECOND, in the Houses; age 22.—Mr. Tull, Head Gardener, Belmont Park, Havant, Hants, wishes to recommend G. Mullins as above Six years' experience.

IMPROVER, in Gentleman's Garden.—Age 19.—G. JOHNSON, Upper North Town, Maidenhead.

KNIFEMAN.—Age 27; eleven years' experience in Budding, Grafting, Tree Training, and Outdoor Nursery Work.—M. N., Normandy, near Guildford.

APPRENTICE. — Wanted to place a well educated Youth as an Apprentice to high-class Horticulture. Please state terms, &c.—J. H., 106, Brecknock Road, London, N.

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TO GARDENERS, &c.—Situation wanted by a young man (age 24). Total abstainer. Seven years' personal and four years' present character. Large establishment preferred.—W. B., 85, High Street, St. John's Wood, N.W.

TO NURSERYMEN.—Wanted, a situation in a Nursery by a young man (age 18). Four years' experience; up in Propagating and the general routine of Nursery Work. Good references.—H., 41, Wellington Street, Strand, W.C.

TO GARDENERS. — £5 Premium will be given by a Gardener's son for a two years' engagement. Age 19; active and obliging; good references. Five years' experience, the last three under glass, in a leading Nursery.—BURSTON, Kinnerton, Chester.

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TO GARDENERS, &c.—Wanted, a situation by a Lad in a Garden; age 17. Willing and obliging. Two years' good character.—E. NEAL, Norbury Park, near Dorking, Surrey.

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TO NURSERYMEN.—A young man (age 23) seeks situation to make up Wreaths, Bouquets, &c., and fill up spare time in the Houses. Excellent references.—J. LANE, Canbury Park Road, Kingston, Surrey.

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SHOPMAN—also used to Plant and Flower Trade.—Age 28; good Penman and Accountant. Good references.—W. HARRIS, Hammerwood, East Grinstead, Sussex.

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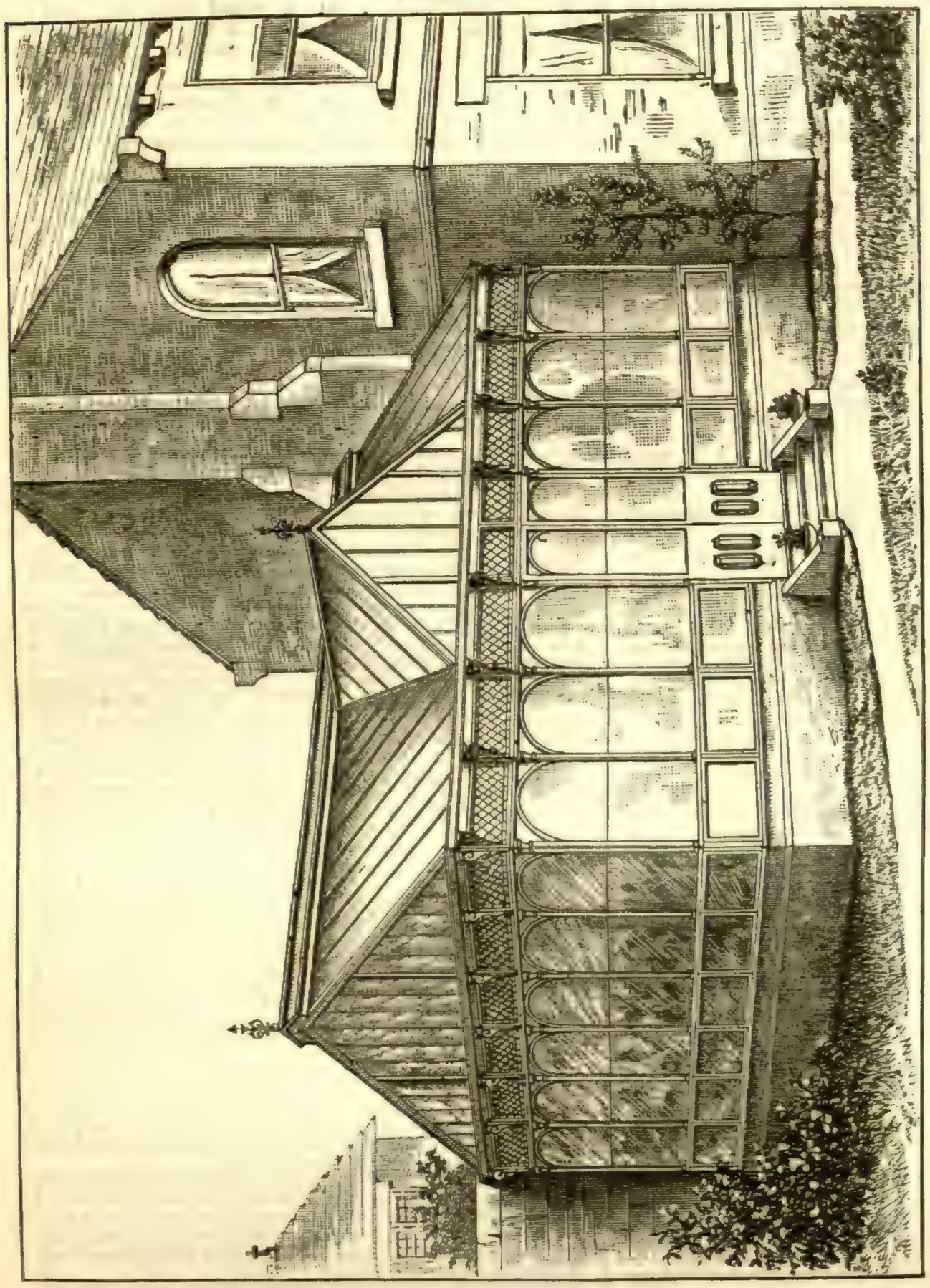

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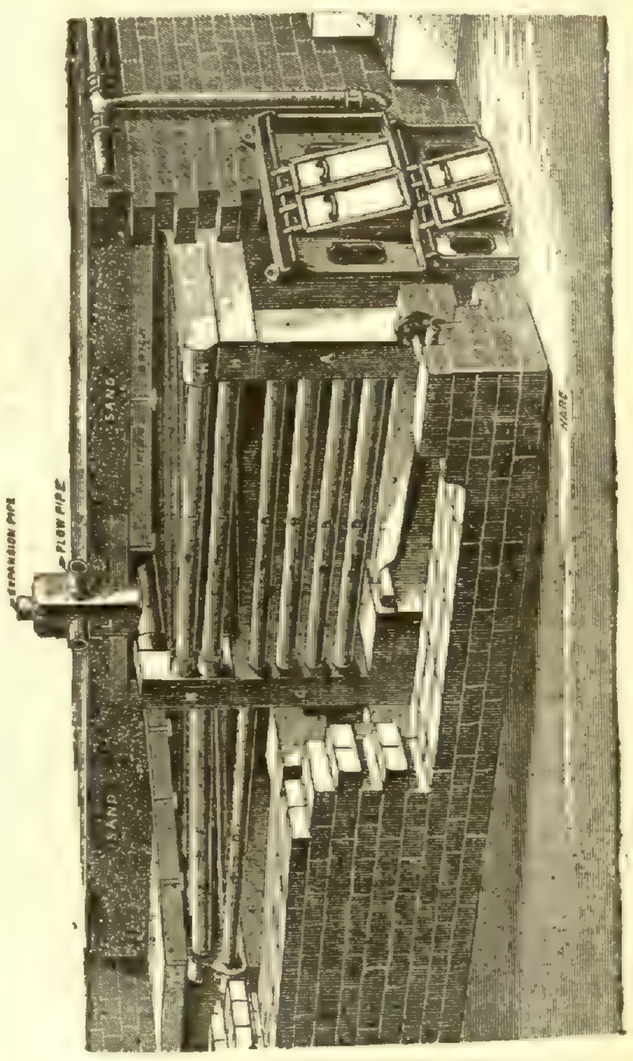

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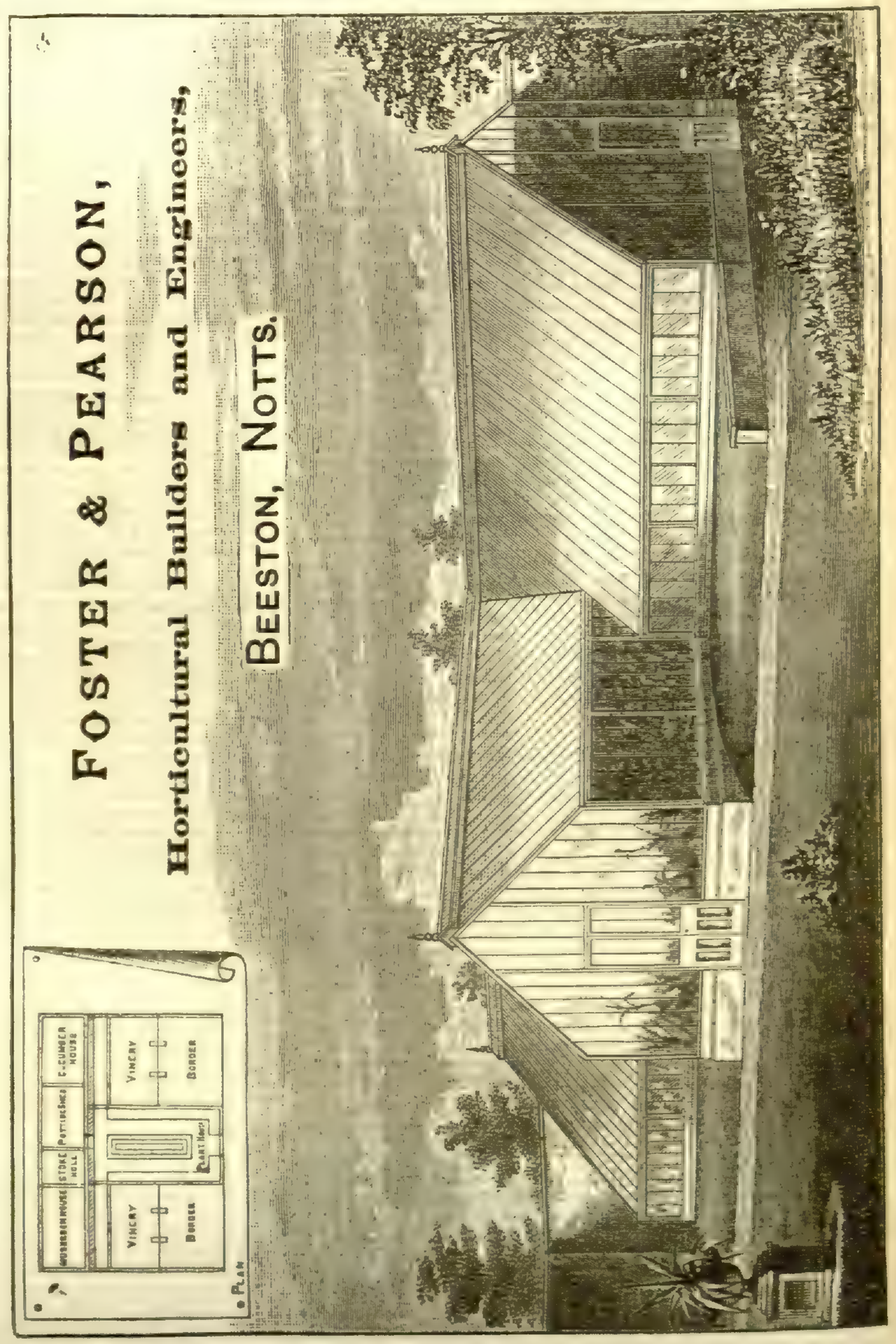

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CONTENTS.

Anthurium purpureum... 575
Apiary, the 583
Apples, late keeping ... 581
British Guiana, primæval forests of 573
Buds on roots 583
Camellia Dante 581
Cattleya Dukeana ... 576
Clivia 580
Continental novelties:—
Lobelia Cavanillesi ... 584
Senecio elegans pomponicus 584
Dresden International Horticultural Exhibition 581
Flower garden, the ... 578
Florists' flowers 578
Fruits under glass ... 578
Gardeners, more, than gardens 581, 585
Gardeners' Orphan Fund 582
Gardeners' Self-help Society 582
Gardenias on a wall ... 584
Hardy fruit garden, the 579
Lachenalia aureo × reflexa 576
Monte Carlo 583
Orchid notes 577
Orchids at Gunnersbury House 578
,, at Mr. Tautz's ... 577
Orphan Fund, the ... 585
Plants and their culture 579
Primula Auricula ... 584
,, blattariformis ... 575
,, longibarda 584
,, vinciflora 575
Rhododendron Campbellæ 585
,, Victorianum ... 580
Roses 583
Royal Horticultural Society 580
Societies:—
National Auricula ... 586
Royal Horticultural ... 585
The Firs, Lee, winter garden at 579
Vilvorde, School of Horticulture at 580
Weather, the 587

ILLUSTRATIONS.

Buds on roots 582
Cypripedium marmoratum 576
,, Peteri... 577
Lobelia Cavanillesi 585
Primula vinciflora 574
Senecio elegans pomponicus 584
View in Lady Wilton's garden Monte Carlo (Supplement)

SCOTTISH PRIMULA AND AURICULA SOCIETY.
FIRST EXHIBITION, MAY 4, in Calton Convening Rooms, Waterloo Place, Edinburgh. Schedules may be had from
WM. STRATON, Hon. Sec. and Treasurer.
Annfield, Broughty Ferry.

BATH SPRING SHOW, WEDNESDAY, May 11.
Amongst the open classes are twelve Greenhouse Azaleas, £9, 1st; £6, 2d; £4, 3d. Twelve Stove or Greenhouse Plants, £12, 1st; £8, 2d; £4, 3d. Group Orchids arranged for effect on space 12 feet by 6 feet—Palms and Ferns allowed—£8, 1st; £5, 2d; £2, 3d. Six Orchids, £5, 1st; £3, 2d; £2, 3d. Entries close May 7. Schedules and all information on application to
BENJAMIN PEARSON, Secretary.
14, Milsom Street, Bath.

SECOND NATIONAL CO-OPERATIVE FLOWER SHOW, SOUTH KENSINGTON, AUGUST 23, 1887.
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BRIGHTON and SUSSEX FLORICULTURAL and HORTICULTURAL ASSOCIATION.
A GRAND SUMMER EXHIBITION and a GRAND AUTUMN EXHIBITION will be held this year. Dates and particulars will be shortly announced.
EDWARD CARPENTER, Secretary.
Secretary's Office: 96, St. James' Street, Brighton, March 28, 1887.

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Their CATALOGUE is ready, and may be had on application.

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J. SOLOMON, Winchmore Hill, N.; and 22, 23, 372, Flower Market, Covent Garden, W.C.

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☞ The Rhododendrons in Rotten Row and the Botanic Gardens, Regent's Park, are supplied by
ANTHONY WATERER, Knap Hill Nursery, Woking, Surrey.

AUGUSTE VAN GEERT, Continental Nursery, Ghent, Belgium, begs to inform Friends and Customers that his Special Spring Trade LIST is just out, and may be had on application. A splendid stock of PALMS, all sizes, now ready.

CŒLOGYNE CRISTATA. Well grown and cheap.
Trustees of the late J. STEVENSON, Timperley, Cheshire.

CHOICE BEDDING GERANIUMS, &c.—Henri Jacoby, 10s. per 100; Queen of Belgians, best white, 20s. per 100; Mrs. Pollock, 15s. per 100; Vesuvius, 8s. per 100. Strong FUCHSIAS, best kinds, 10s. per 100. All very strong and good.—W. JACKSON, Blakedown, Kidderminster.

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WANTED, a few Standard ORANGE TREES, in pairs. Say height of stem and size of head to J. W., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, London, W.C.

WANTED, large PALMS, TREE FERNS, and other large ORNAMENTAL FOLIAGED PLANTS, in EXCHANGE for ORCHIDS or other PLANTS. Send full particulars.
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Must have clean and straight stems, good heads, and lift with fibrous roots.
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For particulars, see p. 568.

AURICULA PLANTS of the best winning show varieties, for sale, the Stock of the late E. Pohlmann. Splendid ALPINES, very choice, 3s. per dozen; or £1 per 100. Show varieties, £1 1s. per dozen.
F. POHLMANN, Parkinson Lane, Halifax.

Spring, 1887.
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The Royal Nurseries, Slough.

New Zonal Pelargonium,
QUEEN OF WHITES IMPROVED.—It is without doubt the best White Zonal ever offered. It has been in flower all the winter at our Nurseries, and will be ready to send out May 1. £1 per dozen, strong plants. Certificate Royal Botanic Society, May 19, 1886.
PHILIP LADDS, The Nurseries, Bexley Heath, and Swanley.

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JAMES DICKSON AND SONS, "Newton" Nurseries, Chester.

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RHODODENDRONS, Hybrid Seedlings, 1½ to 2 feet. per 1000, £14. LAUREL, Common, 1½ to 2 feet, per 1000, 50s.; do., 2 to 3 feet, per 1000, 70s. GORSE, Double Flowering, 6 to 9 inches, per 100, 10s.; do., 1 to 1½ feet, per 100, 16s. HOLLY, Common, 12 to 15 inches, per 100, 14s.; do., 1½ to 2 feet, per 100, 25s. PERNETTYA MUCRONATA, 15 to 18 inches, per 1000, 60s. DAISIES, Aucuba-leaved, per 1000, 40s. CATALOGUES free.—HENRY DERBYSHIRE, Darley Hillside Nursery, near Matlock, Derbyshire.

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JOHN LAING AND CO., The Nurseries, Forest Hill, S.E.

ORCHID PEAT, selected turves, 6s. per sack, six sacks, 33s; ditto, prepared ready for use, 10s. 6d. per sack. SPHAGNUM MOSS, fresh, 6s. per sack of 3 bushels. Also a good light brown FIBROUS PEAT (not sandy), f.o.r. Ringwood, in 4-ton loads, at 11s. per yard. Sample on application to
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MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, on THURSDAY NEXT, May 5, a fine lot of ORCHIDS in FLOWER and BUD, comprising some splendid forms of Odontoglossum Alexandræ, O. hybrids, Dendrobes, Oncidiums, Cattleyas, &c.

On view morning of Sale, and Catalogues had.

Thursday Next—(Sale No. 7410).
5000 grand bulbs of LILIUM AURATUM from Japan, in the finest possible condition.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, on THURSDAY NEXT, May 5.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7410.)
IMPORTANT SALE of IMPORTED and SEMI-ESTABLISHED ORCHIDS, by order of Mons. Linden, Director of L'Horticulture Internationale, Brussels.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, May 5, at half-past 12 o'Clock precisely, 200 fine pieces of CATASETUM BUNGEROTHII. "One of the finest new Orchids that have appeared in London for a long time."—*The Garden*, December 18, 1886, p. 575. True, and collected by Mr. Bungeroth, in splendid condition. Figured in the *Gardeners' Chronicle*, *L'Illustrations Horticole*, and in the *Journal of Horticulture;* 100 semi-established plants of DENDROBIUM STRATIOTES, Rchb. f., the grand new Dendrobe figured in the *Lindenia*. Also good plants of VANDA MASSAIANA; a magnificent new VANDA from New Guinea; V. LINDENI, Rchb. f., figured in the *Lindenia;* CYPRIPEDIUM PRÆSTANS, Rchb. f., new, and one of the finest Cypripedes ever introduced; ODONTOGLOSSUM LUCIENIANUM, Rchb. f.; a splendid new Odontoglot, figured in the *Lindenia* and in *L'Illustrations Horticole;* also fine plants of DENDROBIUM D'ALBERTISI, D. MACROPHYLLUM (Veitchi), and D. PURPUREUM, and other valuable importations of ORCHIDS.

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Special Sale of Orchids in Flower and Bud.

MR. J. C. STEVENS begs to announce that his next special SALE of ORCHIDS in FLOWER and BUD will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, May 18, and he will be glad if Gentlemen desirous of entering Plants for this Sale will send particulars as soon as possible.

Forest House, Leytonstone, E.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from W. Fowler, Esq., J.P., who is leaving the residence, to SELL by AUCTION, on the Premises, Forest House, Leytonstone, about 10 minutes' walk from Leytonstone Railway Station, on TUESDAY, May 3, at 12 for 1 o'Clock precisely, 10 COWS and HEIFERS, mostly in profit; valuable CARTHORSE, 70 head of POULTRY, a Stack of about 50 loads of prime MEADOW HAY, 2 HAY-MAKING MACHINES, WEIGHING-MACHINE, one-horse CHAFF-CUTTING MACHINE, one-horse ROLLER, set of CHAIN HARROWS, BARROWS, 10 RICKCLOTHS, CARPENTER'S BENCH, capital light spring VAN, large quantity of BEDDING PLANTS, fine specimen CAMELLIAS, STOVE and GREENHOUSE PLANTS in variety; and numerous other effects.

May be viewed the day prior and morning of Sale. Catalogues can be had of Mr. MONK, the Head Gardener, on the Premises; and of the Auctioneers, Estate Agents, and Valuers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

N.B. The Auctioneers beg to announce that the valuable Contents of the Residence will be Sold at a later date.

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THE DOWNSIDE COLLECTION OF ORCHIDS.
Highly IMPORTANT SALE of selected duplicate plants from this renowned Collection, consisting chiefly of plants matchless in point of rarity and culture.
By order of Wm. Lee, Esq., in consequence of the overcrowded state of the houses.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to SELL by AUCTION, on the Premises, Downside, Leatherhead, on TUESDAY and WEDNESDAY, May 3 and 4, at half-past 12 o'Clock precisely each day, selected duplicate and other ESTABLISHED ORCHIDS, amongst which the following choice kinds will be found:—

Cattleya Trianæ Leeana
,, ,, Dayana
,, Emperor
,, ,, alba, true
,, ,, Eboracensis
,, ,, Thompsonii
,, ,, Osmanii
,, ,, Dodgsonii
,, ,, Emiliæ
,, ,, Backhouseana
,, ,, Colemani
,, fausta
,, labiata, autumn-flowering
,, calummata
,, Mardelli
,, Skinneri alba
,, Mendelii Selbernensis
,, ,, Morganiæ
,, exoniensis
,, Rothschildiana
Lælia elegans special varieties
Lælia anceps Dawsoniæ
,, Wolstenholmiæ
,, Amesiana
,, bella
,, Veitchiana
,, flammea
,, grandis
Phaius tuberculosus
Cymbidium Parishii
Pachystoma Thomsonii
Saccolabium Heathi
,, Harrisonianum
Dendrobium Phalænopsis
,, Harveyanum
,, nobile nobilius
,, Falconeri giganteum
Maxillaria Sanderiana
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Bull's Blood — true and many other splendid varieties
Cypripedium Stonei platytænium
,, grande
,, microchilum
,, selligerum majus
,, Arthurianum
,, Wallisii
,, Leeanum superbum
,, euryandrum
,, vexillarium
,, Morganiæ
,, tesselatum porphyreum
Cœlogyne cristata alba
,, Lowi
Odontoglossum Hrubyanum
,, rigidum
Vanda tricolor planilabris
,, Pattersoni
,, Sanderiana

The Plants may be viewed any day prior to the Sale on presentation of Catalogue or card to view, to be obtained of Mr. WOOLFORD, the Head Gardener, on the Premises, and of the Auctioneers and Valuers, Central Auction Rooms, 67 and 68, Cheapside, London, E.C.

Wednesday Next.
Consignment from the Cape.
15,000 FREESIA REFRACTA ALBA, extra large roots; 900 APONOGETON DISTACHYON, 100 AMMOCHARIS FALCATA, 200 HŒMANTHUS DISA GRANDIFLORA, 400 NERINE CORUSCA, 200 VALLOTA PURPUREA, &c., for Sale, without reserve.

MESSRS. PROTHEROE AND MORRIS will include the above in their SALE, on WEDNESDAY NEXT, May 4.

Wednesday Next.
3000 LILIUM AURATUM and varieties of Japanese IRIS, 10,000 African TUBEROSES, extra fine STEPHANOTIS, GREENHOUSE PLANTS, CARNATIONS, PICOTEES, &c.; together with a large importation of CAPE BULBS, including 15,000 FREESIAS, 900 APONOGETON DISTACHYON, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on WEDNESDAY NEXT, May 4, at 12 o'Clock precisely.

On view morning of Sale, and Catalogues had.

Friday Next.
CATTLEYA BOWRINGIANA.
CYPRIPEDIUM SANDERIANUM, Rchb. f.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, May 6, at half-past 12 o'Clock precisely,

An importation of the splendid new winter flowering CATTLEYA BOWRINGIANA, the whole of which are offered. The plants have arrived in the best possible condition, with plump dormant eyes. It is one of the most desirable Cattleyas, and no collection should be without it.

From the excellence and beautiful colouring of its inflorescence, and flowering as it does in November, when Orchid bloom is very scarce, it has a twofold claim on all lovers of this beautiful genus. The flowers are produced in clusters, with sepals and petals of mauve, tinted rose, and a rich dark crimson labellum, the throat of which is stained yellow. See *Gardeners' Chronicle*, November 28, 1885, page 683. Awarded a First-class Certificate by the Royal Horticultural Society, October 31, 1885.

A large and fine newly-arrived consignment of CYPRIPEDIUM SANDERIANUM, well furnished with splendid green leaves, and in good order, including many distinct-looking plants, with large broad leaves. These invite special attention. C. Sanderianum is a most distinct and lovely species—certainly one of the most extraordinary and beautiful of the genus. The petals are broad at the base, 18 to 20 inches in length, of a reddish-purple colour, mottled with a lighter base, and the pouch is dark brownish-red. It is altogether a showy and remarkably fine new introduction. See Professor Reichenbach's description in the *Gardeners' Chronicle*, May 1, 1886, p. 554; also illustration in *Reichenbachia*, t. 3, part I. It was awarded a First-class Certificate by the Royal Horticultural Society, September 21, 1886.

The Sale will also include fine healthy plants of NANODES MEDUSÆ, MILTONIA CANDIDA GRANDIFLORA, M. SPECTABILE RADIANS, PLEIONE, new species; SACCOLABIUM BLUMEI, ZYGOPETALUM MACKAYI, LÆLIA DAYANA, and various BURMESE DENDROBES, all in fine condition.

On view morning of Sale, and Catalogues had.

Esher.
CLEARANCE SALE, by order of the Executors of the late R. Few, Esq. Five minutes' walk from the Station.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, Wolsey Grange, Esher, on TUESDAY, May 10, at 1 o'Clock precisely, the whole of the well grown STOVE and GREENHOUSE PLANTS, EUCHARIS, HAYA CARNOSA, LAPAGERIAS, ANTHURIUMS, PALMS, in variety; 30 fine trained AZALEAS, GARDENIAS, DRACÆNAS, 300 CHRYSANTHEMUMS, 5000 BEDDING PLANTS, including 1000 Geraniums, of sorts; 11 Garden Frames, Hand Lights, Iron Tank, Garden Utensils, Loam, Terra Cotta Vases, and numerous other effects.

On view the day prior to Sale. Catalogues had of Mr. G. King, the Head Gardener on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C., and Leytonstone.

Pewsey, Wilts.
By order of the Trustee under a Deed of Assignment.
IMPORTANT UNRESERVED SALE of the well known and valuable COLLECTION of EXHIBITION PLANTS (so successfully shown by Mr. J. F. Mould, at the principal London and Provincial Shows), STOVE and GREENHOUSE PLANTS, &c.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, The Nursery, Pewsey, Wilts, on THURSDAY, May 12, at 1 o'Clock precisely, the Valuable COLLECTION of EXHIBITION PLANTS, including fine examples of Rhododendrons, beautifully grown and trained; Azaleas, splendidly coloured specimens; Crotons of sorts; Allamandas, Ixoras, matchless plants of Ericas, fine plant of Kentia Forsteriana; other Palms in variety; a few Orchids, amongst which are several very large plants of Cœlogyne cristata, large Roses, Stove, and Greenhouse Plants. The whole of the Outdoor NURSERY STOCK, consisting of large quantities of Pines, Firs, Larch, Conifers, Fruit Trees and Bushes; the stock of Seeds, two Greenhouses, Hot-water Piping, Utensils in Trade, and other Effects.

May be viewed two days prior to the Sale. Catalogues may be had of the Trustee, Mr. F. C. GOODCHILD, Secretary; the Nursery and Seed Trade Association, 25, Old Jewry, E.C.; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.; and Leytonstone.

Monday, May 23.
FLOWERING ORCHIDS. SPECIAL SALE.

MESSRS. PROTHEROE AND MORRIS respectfully draw attention to the above. In consequence of Bank Holiday again interfering with their usual day on which this special monthly SALE is held, Messrs. P. & M. have been compelled to fix it for MONDAY, May 23, and give this early intimation that Gentlemen contemplating including Orchids, may make their arrangements accordingly.

67 and 68, Cheapside, London, E.C.

West Hatch, Chigwell, Essex.
About 1 mile from Woodford Station on the Great Eastern Railway.
To Orchid Fanciers, Growers, and Others.
NOTICE OF SALE of the whole contents of the mansion, including the equipment of thirteen Bedrooms, Dining-room appointments in solid Spanish Mahogany, the elegant appointments of the Drawing-rooms and Library, a fine collection of Oil Paintings, Water-colour Drawings, and a few Engravings, Bronzes, a Louis XVI. Clock, Chiming and other Clocks, rare collection of Dresden, Sèvres, Capo di Monti, Vienna, Oriental, and other China; a large collection of Ornaments, a valuable Library of Books, Silver and Plated articles, Glass, China and Effects; about 200 dozen choice Wines, Waggonette, Brougham, elegant Canoe-shaped Landau, seven Carriage and Saddle Horses, sets of Harness, a rick of prime Meadow Hay, Farm Horses, Carts, and Farm Implements; fifteen Pedigree Alderney Cows, Poultry, Gold and Silver Pheasants; together with **a very rare and choice collection of Greenhouse Ferns, Hothouse Plants, Orchids, Pines,** and Bedding-out Plants, Garden Tools, Lights, Seats, and a multiplicity of Effects.

MR. ROBERT FURBER has been favoured with instructions to SELL the above by AUCTION, on the Premises, on TUESDAY, May 10, and four following days, at 11 for 12 o'Clock each day.

May be viewed two days previous to Sale. Catalogues (1*s.* each) may be obtained of Messrs. FURBER, PRICE AND FURBER, Warwick Court, Gray's Inn, W.C.; and at the Auction, Land, and Estate Agency Offices, 22, Above Bar, Southampton.

London, 30 Miles from.
OLD ESTABLISHED NURSERY BUSINESS, with an extensive connection. Satisfactory reasons for disposal.

MESSRS. PROTHEROE AND MORRIS are instructed to find a Purchaser for one of the oldest established Nursery Businesses within a similar distance from London. The incoming would be subject to valuation, or a Partnership would be entertained.

Full particulars of Messrs. PROTHEROE AND MORRIS 67 and 68, Cheapside, London, E.C.

London, W.
Dissolution of Partnership. Must be sold.

TO BE SOLD, an important MARKET NURSERY, with numerous Glass Erections, on very moderate terms. An excellent opportunity.

Full particulars and terms of Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, E.C.

FOR DISPOSAL.—The FLORIST'S BUSINESS, situated 3 miles from Bath, now conducted by Mr. J. Scott, who is relinquishing because of old age. The STOCK, with seven GREENHOUSES and VINERY 70 feet long, to be taken at moderate valuation. DWELLING-HOUSE and GARDEN to be Let.

Apply to Mr. J. SCOTT, Bathford Nursery, Bath.

To Fruit and Flower Growers, Market GARDENERS and OTHERS.
Surrey, 18 miles from London midway betwixt two stations, and in the midst of a district where there is a local demand.

TO BE LET on LEASE or SOLD IMMEDIATELY, owing to owner's ill-health, an excellent FRUIT GARDEN, well stocked, about 12 acres in extent (more or less Land could be had as desired), with numerous Glass Erections, including Vinery, Strawberry, and Tomato Houses, and several Pits. All heated.

Substantial brick-built 7-roomed Cottage, also Stabling, Cart-shed, Cow-shed and other Buildings, Fruit, Seed Potting and Washing Sheds. Terms of

WATERER AND SONS, Land Agents, Chertsey.

BATH and WEST of ENGLAND SOCIETY and SOUTHERN COUNTIES ASSOCIATION.

Horticultural Department.

DORCHESTER MEETING, 1887.
Commencing MONDAY, May 30;
Terminating FRIDAY, June 3.

The following Prizes are offered:-

£10, or Cup, for best GROUP of ORCHIDS.
£5, or Cup, for best SPECIMEN ORCHID in Show.
£3 and £2 for best COLLECTIONS of FRUIT, if not less than three exhibitors.
£3 and £2 for best COLLECTION of VEGETABLES, if not less than three exhibitors.

For further particulars apply to the Steward,

The Hon. and Rev. J. T. BOSCAWEN, F.L.S.,
Lamorran, Probus, Cornwall.

Landscape Gardening.

H. F. MALLER (of the firm of B. Maller & Sons), late Pupil of the Crystal Palace School of Landscape Gardening, is prepared to FURNISH PLANS, or undertake any kind of the above work.—61, High Street, Lewisham.

POSTAL BOXES for Plants and Flowers; WREATH, CROSS and BOUQUET BOXES (light wood); PROPAGATING TRAYS for Sowing Seed, &c.; WOOD LABELS and STICKS. Cheapest and best. Sample and List, 6 stamps.—T. CASBON, Box Maker, Peterborough.

RICHARD WALKER can supply the following for cash:—CABBAGE, Early Rainham and Enfield Market, 3*s.* per 1000; Giant Rocca ONION, true, 5*s.* per 1000; Cabbage LETTUCE and Brown Cos, 5*s.* per 1000; good SEAKALE for planting, 3*s.* per 100; SOUVENIR DE LA MALMAISON, splendid white pink, very large and free, 3*s.* per dozen; Seedling PICOTEES, good roots, 1*s.* per dozen; New PYRETHRUM, 1*s.* per dozen; HOLLYHOCKS, Chater's strain, 3*s.* per dozen, cash with order.

The Market Gardens, Biggleswade, Bedfordshire.

PUBLIC SALE OF PLANTS

BELONGING TO THE

COMPAGNIE CONTINENTALE D'HORTICULTURE,
52, Rue de Chame, and 56, Coupure, Ghent, Belgium.
(In Liquidation.)

This Sale is without precedent as regards importance in Horticultural Industry.

Monday, May 16, and following days,
At 9 o'Clock A.M., and 3 o'Clock P.M., punctually.
By Mr. G. DROESBEKE VAN DER HEYDEN,
Auctioneer, Ghent.

Order of Sale.

MONDAY, May 16.—FINE SPECIMEN AZALEAS, and young Azaleas, in quantity.
TUESDAY, May 17.—FINE SPECIMEN CAMELLIAS and young Azaleas, in quantity.
WEDNESDAY, May 18.—The celebrated Collection SPECIMEN and HALF-SPECIMEN PALMS, rare and new species of Palms; also examples suitable for the Winter Garden and room decoration, &c.
FRIDAY, May 20.—DECORATIVE PLANTS in variety, and (as specimens) FERNS, CYCADS, large PHORMIUMS, FURNISHING PLANTS, &c.
SATURDAY, May 21.—FINE SPECIMEN PALMS, TREE FERNS, and DECORATIVE PLANTS of incomparable vigour and beauty. PLANTS for the WINTER GARDEN, DRACÆNA LINDENI, CALADIUMS, and various Stove Plants.
MONDAY, May 23.—AROIDS, VARIEGAED PLANTS, ENTIRE STOCK of NEW PLANTS, young Variegated Plants, BROMELIADS, &c.
TUESDAY, May 24.—YOUNG PALMS, Decorative, Rare, or New Species, in large quantities; Specimen and young NEPENTHES.
WEDNESDAY and THURSDAY, May 25 and 26.—Do., do., do.
FRIDAY, May 27.—ORCHIDS (the fashionable plants), New and Rare Plants, Collections, &c.
SATURDAY, May 28.—ORCHIDS and NEPENTHES, young and Specimen Plants.
MONDAY, May 30.—ORCHIDS, many new and rare species.
TUESDAY, May 31.—OFFICINAL PLANTS, TROPICAL FRUIT TREES, ORNAMENTAL PLANTS, &c.
WEDNESDAY, June 1.—MISCELLANEOUS.

☞ *If necessary the sale will be continued on the following days.*

NOTICE.—Amateurs and Nurserymen, &c., are invited to attend at this Sale. There will not be presented again for a long time such a chance of buying *at bargains* well cultivated Decorative or Exhibition Plants in such very rare specimens, or such fine Ornamental Plants for the Winter Garden or House Decoration.

The detailed CATALOGUE will be published on May 1, and sent free to any one desiring it. Applications to be made to the Company, or to Mr. G. DROESBEKE VAN DER HEYDEN.

WANTED,

LARGE PALMS, TREE FERNS,

AND OTHER

ORNAMENTAL FOLIAGED PLANTS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN) Limited,

Are at present prepared to give ORCHIDS, or OTHER PLANTS, IN EXCHANGE for large overgrown PALMS, TREE FERNS, and other Plants of a similar class. Those who wish to take advantage of this offer should send full particulars at once, as, after the next Spring, the Company will have no use for such plants, the present use for them being quite an exceptional one.

The Company have an immense stock of ORCHIDS, both newly imported and established. They have also a grand stock of TEA ROSES, FERNS, GRAPE VINES, and STOVE and GREENHOUSE PLANTS.

CATALOGUE, with full particulars, on application to

THE VINEYARD & NURSERIES,

GARSTON, near LIVERPOOL.

ASPARAGUS.—This delicious vegetable does not require half the expense often incurred. For directions see Illustrated SEED LIST, free. Strong roots, 2s. 6d. per 100; extra strong ditto, two years old, 3s. 6d. per 100. RICHARD SMITH AND CO., Worcester.

CLEARANCE SALE of healthy PALMS for Table and Conservatory Decoration.—LATANIA BORBONICA, SEAFORTHIA ELEGANS, and PHŒNIX RECLINATA, 12 inches high, 6d. each, 4s. per dozen, 25s. per 100; same kinds, 20 inches high, 1s. 6d. each, 6 for 8s., 12 for 14s. Packages and parcels post-free.

COCOS WEDDELLIANA, ARECA LUTESCENS, and EUTERPE EDULIS, 2s. to 5s. each; KENTIAS, 4s. to 10s. each; large PALMS, 3 feet to 6 feet high, 5s. to 50s. each. All of splendid value.

GARDENER, Holly Lodge, Stamford Hill, London, N.

Mangel Wurzel and Turnip Seeds.

H. AND F. SHARPE are now prepared to make special offers of home-grown MANGEL WURZEL and TURNIP SEEDS, raised in 1886 from specially selected Bulbs. The quality is excellent and the prices are very low.

Seed Growing Establishment, Wisbech.

Special Offer.

ISAAC MATTHEWS AND SON have for Sale 500,000 RHODODENDRONS, varying in size from 4 to 6 inches up to 2 to 3 feet—Cunningham's White, Jacksoni, caucasicum, pictum, Seedling Hybrids, Hybrid ponticum, and named varieties; good bushy plants. HOLLIES, CONIFERS, FOREST TREES in large quantities; AUCUBAS, YEWS, and other Nursery Stock. CATALOGUES now ready, and may be had, gratis and post-free, on application to the Nurseries, Milton, Stoke-on-Trent.

Our Nurseries are 110 acres.

Cheap Bedding Plants—Special Offer.

WILLIAM BADMAN offers as under, from Store-pots, all well-rooted, and fit for present potting. The present is a good time for making up losses sustained during the winter:—

VERBENAS, Purple, White, Scarlet, Crimson, Rose, 6s. per 100, 50s. per 1000; 12 choice named varieties, 8s. per 100.
LOBELIA Bluestone, pumila magnifica, true, from Cuttings, 2s. 6d. per 100, 20s. per 1000; Brighton Blue, fine, 3s. per 100, 21s. per 1000.
CALCEOLARIA Golden Gem, 5s. per 100, 40s. per 1000 Camden Hero, fine dark, 6s. per 100.
HELIOTROPE Jaun d'Amour, Miss Nightingale, dark, 6s. per 100, 50s. per 1000.
AGERATUM Imperial Dwarf, blue, 5s. per 100, 40s. per 1000.
COLEUS VERSCHAFFELTI, bedding crimson, 6s. per 100, 50s. per 1000.
IRESINE LINDENI, dark crimson, good bedder, 6s. per 100, 50s. per 1000.
PELARGONIUM Vesuvius, finest bedding scarlet, 8s. per 100, 75s. per 1000; Master Christine, 12s. per 100; Mrs. Levers and Jenny Dodds, fine pink, 10s. per 100; Henry Jacoby, best crimson, 12s. per 100.; Madame Vaucher, white, 12s, per 100; Queen of Belgians, finest white, 3s. per dozen, 20s. per 100; Niphetos, bedding white, 12s. per 100; Waltham Seedling, Lucius, Jean Sisley, and White Vesuvius, 10s. per 100.
SILVER VARIEGATED May Queen (Turner's), Princess Alexandra, Flower of Spring, 12s. per 100; Little Trot, dwarf, 12s. per 100; Prince Silverwings, 10s. per 100,
GOLD-LEAF Crystal Palace Gem, 10s. per 100; Happy Thought, 12s. per 100.
BRONZE McMahon, Black Douglas. The Czar, the best bedders, 15s. per 100.
TRICOLOR Mrs. Pollock, 15s. per 100; Sophie Dumaresque, Lady Cullum, Sir R. Napier, 18s. per 100.
DOUBLES, F. V. Raspail, fine scarlet; M. Thibaut, pink, M. Baltet, best white, 12s. per 100.
TROPÆOLUM Vesuvius, 8s. per 100; coccinea elegans, best dwarf scarlet, 10s. per 100.
FUCHSIAS in twelve good named sorts, 8s. per 100.
PELARGONIUMS, Show and Decorative, from single pots, good, 20s. per 100, 3s. per dozen.

NOTE.—Not fewer than twenty-five of any one sort supplied at above rate. Packing included. Terms Cash.

Cemetery Nurseries, Gravesend, S.E.

ROBERT NEAL begs to call the attention of Gentlemen, Builders, and others who intend planting this season, to his stock of FRUIT, FOREST, and ORNAMENTAL TREES, SHRUBS, ROSES, &c., which are in fine condition for removal, and comprise especially those kinds which are most suitable for Town Planting. Free delivery in own vans within a distance of six miles.

CATALOGUES on application.
The Nurseries, Trinity Road, Wandsworth Common, S.W.

EIGHTY THOUSAND CLEMATIS, in Pots, of all the finest Double and Single Varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants. Descriptive LIST on application.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

CHRYSANTHEMUMS, 550 varieties, true to name, strong Cuttings; buyers' selection, 1s. 6d. per dozen, 10s. per 100; Plants, 2s. 6d. per dozen, 16s. per 100. For price of new sorts see CATALOGUE. Many of the largest growers are supplied, and many of the best prizes in the county have been taken from plants and cuttings supplied by me. Catalogue, two stamps, of

WM. ETHERINGTON, Chrysanthemum Grower, Swanscombe, Kent.

2,000,000 CABBAGE PLANTS, best Market and Cattle varieties. Also LETTUCE, Tripoli ONIONS, BRUSSELS SPROUTS, Savoy and Red Pickling CABBAGE. Write for LIST, and state what quantity required; will give low quotations.

EDWARD LEIGH, Ivy House Farm, Cranleigh, Surrey.

BEGONIAS A SPECIALTY.—LAING'S BEGONIA TUBERS. Awarded Two Gold Medals. Free by post. Unequalled quality. Named Singles, from 12s. to 42s. per dozen; unnamed seedlings, selected to colour, for pots, from 12s. per dozen; bedding, selected to colour, 9s. per dozen; bedding, choicest mixed colours, 6s. per dozen; choicest named Doubles, from 42s. per dozen; unnamed, very choice selected, 24s. and 30s. per dozen; choicest mixed, 18s. per dozen. CATALOGUES gratis.

JOHN LAING AND CO. Nurseries, Forest Hill, S.E.

The following Circular Letter has been addressed to the Gardeners of the United Kingdom:—

SPECIAL.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

50, PARLIAMENT STREET, LONDON, S.W.
April 20th, 1887.

DEAR SIR,—

Whilst the Members of nearly every Society in the United Kingdom are evincing their LOYALTY to the QUEEN upon the occasion of the completion of the 50th YEAR of her reign, it would not be becoming that the HORTICULTURISTS of ENGLAND should be behind in showing the respect they owe their Sovereign.

In anticipation of this eventful year the Pension List was, in January last, increased to 122 recipients, and in order to further mark this interesting occasion the Committee consider that, as Her Majesty is the Patroness of the Institution, the best plan for celebrating the event will be to make a grant of £5 to each of the Pensioners, and to each unsuccessful Candidate at the late Election, in all 133 persons, and thus allow these poorer brethren of the Horticultural world an opportunity of participating in the general rejoicing.

To defray the extra expenses thus entailed, and to carry out the above scheme, the Committee send you the accompanying Collecting Card, and express their earnest hope that you will do your utmost to assist them in their endeavours to promote the happiness and comfort of so many poor and deserving Horticulturists, and secure the sum of £1000, which is the amount required.

The Committee would suggest your submitting this Card to your Employer, experience having shown them that Employers are, as a rule, not aware of the existence of the Institution, and would willingly subscribe to it were it brought to their notice.

The Committee desire now to draw your special attention to the following resolutions:—

"*That upon any person collecting the sum of* **£10 10s.**, *he "will by virtue of such collection become a Life Member "(without any further payment), with all its privi- "leges, from the date upon which the said amount was "completed.*"

"*That any person who may collect Ten Guineas (should he "be already a Life Member), may nominate a Friend "by virtue of such collection, as a Life Member.*"

All amounts hitherto collected by you will be carried to your credit of this and all future collections.

The Secretary, Mr. CUTLER, will be happy at all times to afford you any information, and we trust to receive such a report from him as will show that our appeal has not been in vain

We are,
Dear Sir,
Yours faithfully,
JOHN LEE, *Chairman of Committee.*
HARRY J. VEITCH, *Treasurer.*

N.B.—This Collection will take the place of that usually made in the Autumn.

Subscriptions will be acknowledged in the Columns of the GARDENERS' CHRONICLE.

HOLLYHOCKS.—We are again in a position to offer finest named varieties, strong, healthy plants, at 18s., 24s., and 30s. per dozen. Early orders solicited. Our CATALOGUE of Florists' Flowers for 1887 is now issued. It is admitted by all to be the Premier Scotch List. Send for a copy.

R. B. LAIRD AND SONS (late Downie & Laird), Nurserymen, Edinburgh.

25 FANCY PANSIES for 5s. 6d., post-free, consisting of the following grand competition and decorative varieties:—A. Stevens, A. Ashcroft, A. Glendinning, B. Campbell, E. Dalglish, F. M. Outram, Gold-digger, J. Clelland, J. Sutherland, J. W. Cameron, R. Brodie, Mrs. Paisley, Mrs. Barrie, Mrs. Findlay, Mrs. Goodwin, Mrs. G. P. Frame, Mrs. McIntosh, Mrs. Pattison, Miss Roy, Miss Biggar, Mrs. Blair, Perfection, Rev. J. Graham, Silver Wings, and Wm. Stewart. The above is rare value. 50 varieties, including the above, for 10s.; 12 Exhibition VIOLAS, 2s. 6d.; 50 for 7s. 6d.; 100 for 12s. 6d, from the best Collection in Scotland.

M. CUTHBERTSON, Pansy Grower, Rothesay.

JOSIAH H. BATH offers the following varieties of SEED POTATOS:—

Rivers' Royal Ashleaf	Dalmahoy
Myatt's Prolific Do.	Early Don
Old Ashleaf	,, Bog
Early Shaw	York Regent
,, Goodrich	Scotch Do.
,, Rose	Dunbar Do.
Imperator	Fluke
Beauty of Hebron	Paterson's Victoria
White Elephant	Snowflake
Schoolmaster	Scotch Champion,

And other leading varieties. Prices upon application.
1 and 3, York Street, Borough Market, S.E.

CAUTION.

"TESTED SEEDS,"

IS

CARTERS'

Registered Trade Mark.

All Infringements will be proceeded against.

HIGH HOLBORN, LONDON.

EXTRAORDINARY PETUNIAS.

HOOPER'S Dwarf Double-fringed Petunias are the most wonderful productions in this class that have ever been offered. The flowers are superb in their finish and doubleness, and have the most novel and diversified colours.

Seed, 2s. 6d. per packet.

From this stock sprung our beautiful

PETUNIA EMPRESS,

for which we received last season a First-class Certificate. This delightful plant is of compact and neat habit, and bears very perfect double flowers of a uniform soft rose-pink colour. It is a most charming thing for greenhouse culture.

Prices: Cuttings, 4s. per dozen, post-free. Plants in small pots, 7s. 6d. per dozen.

EXTRAORDINARY GLOXINIAS.

Spotted, Marbled, Veined, and every imaginable diversity, combined with rich substance and handsome growth. We have gained with this strain certificates and medals at many Shows, and recommend it with unusual confidence.

Seed, per packet, 2s. 6d. Bulbs at 9s. and 15s. per dozen. Order Hooper's Spotted Strains.

HOOPER & CO., Lim.,

COVENT GARDEN and MAIDA VALE,

LONDON.

SELECTED MANGEL, SWEDE, and TURNIP SEEDS.

CHARLES SHARPE & CO.,

Seed Growers, Sleaford, Lincolnshire,

will be glad to send to the Trade, on application, Special Quotations of their Celebrated Stocks of Field Root Seeds, now so widely known and appreciated.

SEED WAREHOUSE, SLEAFORD.

NEW CATALOGUE.

MY CATALOGUE has for years been acknowledged by all competent authorities to be THE BEST AND MOST COMPLETE ever published on FLORISTS' FLOWERS.

My NEW ISSUE for 1887—which, like the stock it represents, is this season GREATLY ENLARGED AND IMPROVED—is now ready, and will be posted free on application to all intending purchasers.

It is replete with the best Novelties of the season, and will be found to accurately describe all the BEST varieties EXTANT of PANSIES, VIOLAS, PHLOXES, PENTSTEMONS, ANTIRRHINUMS, HOLLYHOCKS, CARNATIONS, PINKS, PYRETHRUMS, DELPHINIUMS, POTENTILLAS, PÆONIAS, AURICULAS, DAHLIAS, PELARGONIUMS, FUCHSIAS, BEGONIAS, PERENNIALS, &c. All should possess a copy before buying elsewhere, as it not only effects a saving in the first instance, but will also prove a valuable reference book on all sections of FLORISTS' FLOWERS and their varieties.

JOHN FORBES, Nurseryman, Hawick, N.B.

AZALEA PONTICA,

OR

SWEET AZALEA.

WE recommend the above to be planted in groups on Pleasure Grounds, or by the Drives in Woods, in company with Rhododendrons:—

	Dozen.		100.		1000.	
	s.	d.	s.	d.	s.	d.
Beautiful plants full of bloom bud, 12 to 18 inches	3	0	20	0	180	0
Do. do. 15 to 20 inches...	4	0	25	0	220	0
Do. do. 1½ to 2 feet ...	5	0	26	0	240	0

JAMES SMITH & SONS,

DARLEY DALE NURSERIES, near MATLOCK.

CUT SPECIMEN FLOWERS

OF

BARR'S

BEAUTIFUL

DAFFODILS

BY POST.

In Spring we have numerous applications for these, but hitherto have been unable to attend to such; now, however, since the naming and arranging of our extensive Collection of Daffodils has been completed, we are prepared to send, on application, during April, Cut Specimens, correctly named, and carefully packed, at a charge of 3s. 6d. per dozen flowers (not less than one dozen). We estimate that this charge will cover all expense of postage, boxes, and labour, as we desire no profit in sending these flowers to the public, but are only desirous that these floral beauties should be more widely known. The flowers cannot be sent in bud, as this would prevent us proving our "Stocks," which is done annually; but they will be fresh, and packed so as to ensure their arriving in good condition.

DESCRIPTIVE CATALOGUE of BARR'S DAFFODILS free on application.

BARR & SON,

12 & 13, King St., Covent Garden, W.C.

1887—DAHLIAS—1887

Present Season's Catalogue is now ready and may be had gratuitously upon application.

It is made up as follows:—

CACTUS, OR DECORATIVE DAHLIAS.

To this section I pay a very considerable amount of attention, and I am, in the present season's Catalogue offering some two dozen really first-class and showy varieties, perfectly distinct from the Shows and Fancies, and all, more or less, following the style of the well-known old Cactus variety, Juarezi. The new varieties of the present season are especially deserving of notice.

POMPONS, OR BOUQUET DAHLIAS.

My collection of these is one of the most complete in the trade, consisting of about three dozen varieties of really first-class, distinct sorts, all invaluable for bedding and for cutting.

SHOW AND FANCY DAHLIAS.

My collection of these includes all the well-known old varieties, as well as the best of the new ones.

SINGLE DAHLIAS.

The collection is this year considerably improved by the addition of a dozen exceptionally choice new sorts, which are offered in this year's Catalogue for the first time. In addition to these my Catalogue comprises all the choicest of the varieties of previous years' introductions.

THOMAS S. WARE,

HALE FARM NURSERIES,

TOTTENHAM, LONDON.

PLANTS AND ROOTED CUTTINGS

SPECIAL OFFER.

All Guaranteed strong and healthy and true to name.

Free and safe by Parcel Post at prices quoted on receipt of cheque or P.O.O.

	Per doz.—s.	d.
Chrysanthemums, a superb collection, including all the newest and finest of the Japanese, incurved, Anemone-flowered, and Pompon varieties, our own selection, in beautiful variety ... ... per 100, 10s. 6d.	1	6
,, Japanese, very choice sorts ... 6 for 1s. 6d.	2	6
,, Incurved, very choice sorts ... 6 for 1s. 6d.	2	6
,, New varieties of 1886-7 ... ... 6 for 2s. 3d.	4	0
,, Mrs. Jones (Golden Ethel), new late, golden-yellow, splendid, each 2s. 6d.		
Coleus, beautiful varieties, our selection, 6 for 1s. 6d.	2	6
,, 3 new varieties for 1887, charming and novel, the set, 2s. 6d.		
Pelargoniums, Zonal, from our magnificent collection, our own selection, in beautiful variety ... ... 6 for 2s. 6d.	4	6
,, ,, Queen of the Belgians, beautiful, pure white, each 9d., 3 for 2s.		
,, double-flowered zonal, splendid varieties, to name ... ... 6 for 2s. 6d.	4	6
,, double-flowered Ivy-leaved, most beautiful varieties, splendid for pots, hanging baskets, &c. ... ... 6 for 2s. 6d.	4	6
Fuchsias, 4 new varieties for 1887, remarkably fine, the set for 6s. 6d.		
,, beautiful varieties, including the most charming sorts ... ... 6 for 2s.	3	6
Hollyhocks, strong seedlings for blooming this year, from a grand strain of choice double flowers ... ... 6 for 2s. 3d.	4	0
Anthemis pallida, the charming hardy Marguerite, very beautiful, pale sulphury flowers, 6d. each	5	0
Tuberoses American Pearl, beautiful double, pure white flowers, deliciously scented. Planted in the garden in April and May, and taken up and potted before coming into bloom, will flower splendidly in the greenhouse in autumn, fine roots, 6 for 1s. 6d.; per 100, 17s. 6d.	2	6

DANIELS BROS.,

TOWN CLOSE NURSERIES, NORWICH.

SEEDS,

VEGETABLE, FLOWER, AND FARM,

Carefully Selected,

AND FROM WHICH MAY BE EXPECTED

THE BEST RESULTS

ever yet attained.

ILLUSTRATED LIST,

Containing Copious, Interesting and Reliable Information, Free.

RICHARD SMITH & CO.,

SEED MERCHANTS and NURSERYMEN,

WORCESTER.

100,000 hardy HEATHS.

The present is a most suitable time for planting these beautiful plants.

100 HEATHS, selected, in 10 varieties, price 16s.
100 ,, ,, ,, 20 ,, ,, 18s.
100 ,, ,, ,, 30 ,, ,, 20s.
100 ,, ,, ,, 40 ,, ,, 22s.

If less than 50 plants are ordered, price 3s. per dozen. Special quotations per 1000 can be had on application.

GENTIANELLA (Gentiana acaulis), nice clumps, 12s. per 100, £5 per 1000.

JAMES SMITH & SONS,

DARLEY DALE NURSERIES, near MATLOCK.

FREESIA REFRACTA ALBA.

Fresh arrival of BULBS (in splendid condition) of this lovely fragrant Cape flower. Beautiful waxy white. Adapted for cold greenhouse or frame.

Price, 12s. 6d. per 100, 2s. per dozen.

Trade Price on application.

HOOPER & CO. (Limited), Covent Garden, London, W.C.

THURSDAY NEXT.—(Sale No. 7410.)

IMPORTANT SALE OF IMPORTED & SEMI-ESTABLISHED ORCHIDS.

By order of Mons. Linden, Director of L'Horticulture Internationale, Brussels.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, May 5, at half-past 12 o'Clock precisely, 200 fine pieces of CATASETUM BUNGEROTHII. "One of the finest new Orchids that have appeared in London for a long time."—*The Garden*, December 18, 1886, p. 575. True, and collected by Mr. Bungeroth in splendid condition. Figured in the *Gardeners' Chronicle*, *L'Illustration Horticole*, and in the *Journal of Horticulture*. 100 semi-established plants of DENDROBIUM STRATIOTES, Rchb. f., the grand new Dendrobe figured in the *Lindenia*. Also good plants of VANDA MASSAIANA, a magnificent new Vanda from New Guinea; VANDA LINDENI, Rchb. f., figured in the *Lindenia*; CYPRIPEDIUM PRÆSTANS, Rchb. f., new, and one of the finest Cypripedes ever introduced; ODONTOGLOSSUM LUCIENIANUM, Rchb. f., a splendid new Odontoglot figured in the *Lindenia* and in *L'Illustration Horticole*. Also fine plants of DENDROBIUM D'ALBERTISI, D. MACROPHYLLUM (VEITCHII), and D. PURPUREUM, and other valuable importations of ORCHIDS.

On view morning of Sale, and Catalogues had.

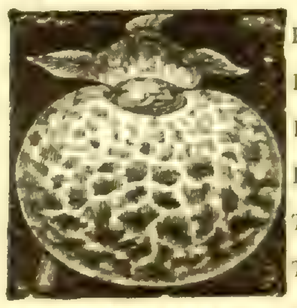
THE NEW LATE WHITE GRAPE,

"WHITE" GROS COLMAR (Roberts).

We have the honour to announce that the distribution of this *really grand, late* "White" Grape has been entrusted to us by the raiser, Mr. Roberts, of Charleville, and will commence next summer at One Guinea each; a few extra strong Canes at Two Guineas. The entire Stock is in our hands; but, as the supply will necessarily be limited, Early Orders are solicited, and will be booked for delivery in rotation.

"JAMES DICKSON & SONS,"
"NEWTON" NURSERIES, CHESTER.

CARTERS'
VICTORIA PRIZE CALCEOLARIA.



AWARDED
First Prize (open to England) Crystal Palace 1883
Banksian Medal, Royal Horticultural Society ... 1883
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Bronze Medal, Royal Botanic Society 1884
The Extra Prize, Crystal Palace 1884
The Second Prize, Royal Horticultural Society ... 1885

FINEST MIXED SEED, embracing every shade of colour.
Price 1s. 6d., 2s. 6d., 3s. 6d., & 5s. pkt., post-free.

SEEDSMEN TO H.M. THE QUEEN AND H.R.H. THE PRINCE OF WALES,
237 & 238, HIGH HOLBORN, LONDON.

PASTUPLANTA.

A Concentrated Chemical Food for Plants. The true food of plants is to return in the form of fertilisers to the soil the elements taken from it by the growth of the plants themselves. **PASTUPLANTA** contains these elements in a peculiar degree combined in a convenient and concentrated form.

Sold only in Tins, containing about 2 lb., 1s. each, or free by post 1s. 6d. each.

SULPHIDE OF POTASSIUM

(HARRIS'S). A perfect Remedy for Mildew.
Sold in Bottles 1s. each, or free by post 1s. 3d. each.
Both the above are obtainable of any Nurseryman or Seedsman in the United Kingdom.

Wholesale Agents:—OSMAN & CO., 14, Windsor Street, Bishopsgate, London, E.

SOLE MANUFACTURERS:—
PHILIP HARRIS & CO. (LIMITED), BULL RING, BIRMINGHAM.

ORCHIDS A SPECIALTY.

Stock immense in extent, fine in quality, moderate in price. Inspection invited.
274,600 superficial feet of glass.
HUGH LOW & CO., Clapton Nursery, London, E.; also Bush Hill Park Nursery, Enfield.

HIGH-CLASS KITCHEN GARDENING. A Handy Manual for the Improved Cultivation of all Vegetables. By WILLIAM EARLEY, Author of "How to Grow Mushrooms," "How to Grow Asparagus," &c., &c. Crown 8vo, with Coloured Frontispiece, price 4s. 6d.

London; Bradbury, Agnew, & Co., Bouverie Street, E.C.

LEEKS—LEEKS—LEEKS.—Cuthbertson's strain gained First Prizes for the last two years at the great Glasgow Shows, thus proving them the best in Scotland. 1s. per dozen, four dozen 3s., post-free, grand plants.

Three hundred ONIONS, autumn-sown, 5s. 6d., post-free; 150 for 3s.; consisting of Mammoth White, Red Bassano (true), and Giant Rocca; 500 White Lisbon, 2s. 6d.

100 CAULIFLOWER, extra strong plants, 3s. 6d. free.

MICHAEL CUTHBERTSON, Florist, Rothesay.

CHEAP BEDDING PLANTS.

GERANIUMS, Zonal, strong autumn-struck plants, from single pots—Vesuvius (scarlet), Jean Sisley, Dazzler (crimson), Master Christine, Madame Vancher, Happy Thought, 2s. per dozen, 12s. per 100; Miss Tottie Hardy (rosy-salmon), Queen of Pinks (magenta), Stour Valley Beauty (peach), 3s. per dozen.

PELARGONIUMS, show and decorative, named, fine plants, from single pots, 3s. per dozen.

LOBELIA (true), from cuttings, Emperor William, 2s. 6d. per 100, 20s per 1000.

DAHLIAS, Single, named sorts, of all shades of brilliant colours, including White Queen and Paragon, 2s. 6d. per dozen, 18s. per 100, from single pots; Double, best named show varieties, 2s. 6d. per dozen, 18s. per 100, from single pots.

CHRYSANTHEMUMS, selection of finest named Show varieties, strong, and well-grown, 2s. 6d. per dozen, 18s. per 100, from single pots. Package free. Plants allowed for carriage.

Terms cash. CATALOGUE gratis.

H. I. HARDY, Stour Valley Florist Grounds, Bures, Suffolk.

Offer of a Large Stock of

PALMS and FOLIAGE PLANTS

to the Trade.

15,000 KENTIA BALMOREANA and FORSTERIANA, 45s. to 80s. per 100.
3,000 COCOS WEDDELLIANA, 45s. per 100.
4,000 EUTERPE EDULIS, 32s. per 100.
1,000 PHŒNIX RUPICOLA, in 48's, at £7 10s. per 100.
1,500 PHŒNIX RUPICOLA, thumbs, 60s. per 100.
ADIANTUM FARLEYENSE, at 40s. per 100.
ASPARAGUS PLUMOSUS NANUS, strong, at 72s. per dozen.
ASPARAGUS PLUMOSUS NANUS, in 60's, at £6 per 100.

A fine stock of DRACÆNA LINDENI, a few grand exhibition plants; also DRACÆNA LINEATA (true), plants from 4 to 7 feet, well feathered and perfect specimens. Also a few strong LAPAGERIA ALBA.

WILLIAM ICETON, Putney Park Lane, S.W., also Flower Market, Covent Garden, Stands 129 and 130.

To the Trade.

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H. AND F. SHARPE will be pleased to give special quotations for all their fine selected stocks of the above-named Seeds of 1886 growth. Their prices will be found very advantageous to purchasers.

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LAING'S BEGONIA SEED.—Awarded Two Gold Medals. In sealed packets. Unequalled quality. Saved from prize plants. Choicest mixed, Single varieties, 1s., 2s. 6d., and 5s. per packet. Collections, 12 named single varieties, separate, 5s. 6d.; 6 ditto, 3s. Choicest mixed double varieties, 2s. 6d., 3s. 6d., and 5s. per packet. Post-free. Order direct from us to procure the genuine seed.

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NEW BEDDING TROPÆOLUM, MRS. PEEBLES.—Bright rosy-crimson, of fine dwarf habit, and most abundant bloomer, throws its flowers well above the foliage. This beautiful variety will supersede all others in the same class for bedding and ribbon borders. Admired by all who saw it last season.

1s. each, or 6s. per dozen.

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MAIDENHAIR FERNS for SALE, 50s. per 100, or £24 per 1000. Good young stuff, in 48 pots, well grown. Apply at

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SEED POTATOS at Clearance Prices.—I am now allowing a large Discount off Catalogue Price for those sorts still in stock, also quoting special prices for many of the leading varieties.

My CATALOGUE is one of the most complete in the Trade. Send for it before ordering elsewhere.

JOHN WATKINS, Potato Grower, Pomona Farm, Withington, Hereford.

MISS JOLIFFE CARNATION.—Fine Plants, in 32's, just showing bloom, and strong rooted cuttings in small pots. Also Yellow and White MARGUERITES, IVY GERANIUMS, MAIDENHAIR FERNS, in 24's, 32's, and 48's, all splendid stuff. Special low offers on application.

J. SUDDINGTON, Nurseryman, &c., Richmond, Surrey.

Carriage Paid and Packing Free.

A. M. C. JONGKINDT CONINCK, Tottenham Nurseries, Dedemsvaart, near Zwolle, Netherlands.

CONIFERÆ, Cuttings and Grafts from Autumn 1885, 14s. per 100; £5 per 1000, in the following sorts:—

Cupressus Lawsoni albo-spica
,, ,, argentea
,, ,, argenteo var.
,, ,, elegantissima
,, ,, erecta viridis
,, ,, Fraseri
,, ,, lutea
,, ,, Smithi
,, ,, stricta glauca
Retinospora filifera
,, ,, gracilis
,, pisifera
,, ,, aurea
Retinospora plumosa
,, ,, argenteo var.
,, ,, aurea
,, squarrosa Veitchi
Taxus elegantissima variegata
,, hibernica
,, ,, variegata
Thuia Ellwangeriana
,, Vervaeneana
Thuiopsis borealis
,, ,, nana compacta
,, ,, viridis
,, dolabrata

NEW or RARE CONIFERÆ Cuttings and Grafts from Autumn, 1885, £1 per 100; £7 10s. per 1000, in the following sorts:—

Cupressus Lawsoni compacta gracilis
,, ,, erecta alba
,, ,, globosa
,, ,, intertexta
,, ,, nana argenteo var.
Cupressus Lawsoni robusta
,, ,, Silver Queen
Retinospora obtusa compacta nana
Thuia occidentalis lutea [var.
Thuiopsis borealis argenteo

CREEPERS FOR WALLS.—By planting what is suitable, an ugly object may easily be made beautiful. Descriptive LIST and advice free.

RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

PEARL AMERICAN TUBEROSES.

A large consignment just to hand in splendid condition. If planted now will come in for late autumn supply.
Trade price per 100 and 1000 on application.
Retail price, 3s. per dozen, 21s. per 100.

HOOPER & CO., LIMITED,
COVENT GARDEN, LONDON, W.C.

NEW VIOLET, Rawson's White.

THIS is now lovely with us—all should come and see. It is a long way the best single white in cultivation—in fact, the only one worth growing, and will give a new feature in every garden. 2s. 6d. each; 25s. dozen.

CARNATION

PRIDE OF PENSHURST is, without doubt, the grandest of pure yellow Carnations that ever existed, and is now to be seen wonderfully fine in full flower in our nursery. Its lovely large flowers, numerous buds, and fine foliage renders it a sight ever to be remembered. Grand plants in 6-inch pots, full of flower, 20s. per dozen; in 5-inch, 15s.; 4-inch, 8s.; in 60's, 5s. per dozen. Ditto, ALEGATIERE, the finest scarlet.

H. CANNELL & SONS,
THE HOME OF FLOWERS,
SWANLEY, KENT.

SPECIALTIES.

TEA SCENTED ROSES, CLEMATIS, RHODODENDRONS and HOLLIES.

Now is the time for Planting the above.

Descriptive Priced CATALOGUES, with lowest Wholesale and Retail Prices, on application to

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KING'S ACRE NURSERIES, HEREFORD.

TO THE SEED TRADE.

LAWSON'S FIELD ROOT SEEDS

PETER LAWSON & SON
(LIMITED),
SEED GROWERS and MERCHANTS,
EDINBURGH,

Will be glad to submit special offers of their well-known stocks of SWEDE, YELLOW, HYBRID, and WHITE-FLESH TURNIPS. Also select MANGELS of superior quality.

Wholesale CATALOGUES upon application.

Please address—
PETER LAWSON & SON (Limited),
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NEW

PEDIGREE SEEDLING ROSES,

Now offering for the first time.

ALEX. DICKSON & SONS

Beg to announce their three New Roses:—

EARL OF DUFFERIN, H.P.
The best dark Rose in cultivation. Awarded Six First-class Certificates.

LADY HELEN STEWART, H.P.
The best scarlet Rose. A grand Autumnal.

MISS ETHEL BROWNLOW, Tea.
A most distinct and valuable Rose. Awarded Four First-class Certificates.

Strong Plants, in Pots, ready for delivery in June.

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Established 1836. IRELAND.

G. HUMPHRIES' New Fancy DAHLIAS for 1887 are now ready for delivery; they are of first-class quality, and quite distinct from anything yet sent out. Awarded First-class Certificate Royal Horticultural Society. Descriptive CATALOGUE of Dahlias on application. The Trade supplied on liberal terms.

The Nursery, Kington Langley, Chippenham.

To the Trade.

SEED POTATOS.

H. AND F. SHARPE are prepared to make very advantageous offers of their fine selected stocks of SEED POTATOS to purchasers of a quantity. Their SPECIAL PRICED LIST comprises all the best and most productive varieties in cultivation.

Seed Growing Establishment, Wisbech.

SPECIAL OFFER OF ORCHIDS.

See previous issue of April 16, 1887.

The undermentioned are all good established Plants, clean and healthy, and will be certain to give satisfaction. Better value cannot be obtained anywhere in the Trade.

C, Cool; I, Intermediate; S, Stove. Each.

C	Odontoglossum grande	... 3 to 4 bulbs,	2s. 6d., 3s. 6d., 5s.
C	Insleayi leopardinum	. 3 to 4 ,,	3s. 6d., 5s., 7s. 6d.
C	Insleayi splendens	... 4 to 5 ,,	7s. 6d., 10s. 6d.
C	maculatum ...	... 3 to 4 ,,	2s. 6d., 3s. 6d.
C	madrense ...	... 3 to 4 ,,	7s. 6d., 10s. 6d.
C	membranaceum	... 6 to 7 ,,	3s. 6d., 5s.
C	nebulosum ...	... 4 to 5 ,,	5s., 7s. 6d.
C	Œrstedi... ...	... 6 to 7 ,,	3s. 6d., 5s.
C	Pescatorei ...	... 3 to 4 ,,	2s. 6d., 3s. 6d., 5s.
I	Phalænopsis ...	... 4 to 5 ,,	5s., 7s. 6d.
C	pulchellum ...	... 4 to 6 ,,	3s. 6d., 5s.
I	Rœzli	... 3 to 4 ,,	5s., 7s. 6d.
C	Rossi majus ...	... 8 to 12 ,,	2s. 6d., 3s. 6d., 5s.
C	triumphans ...	... 3 to 4 ,,	3s. 6d., 5s.
I	vexillarium ...	... 2 to 3 ,,	5s., 7s. 6d.
S	Oncidium ampliatum majus	3 to 4 ,,	5s., 7s. 6d.
C	aurosum ...	... 4 to 5 ,,	3s. 6d., 5s.
I	bicallosum ...	... 3 to 4 leaves	3s. 6d., 5s.
C	cheirophorum ...	... 6 to 10 bulbs	3s. 6d., 5s.
C	concolor ...	... 4 to 5 ,,	2s. 6d., 3s. 6d., 5s.
C	crispum ...	... 4 to 5 ,,	3s. 6d., 5s.
C	dasytyle ...	... 4 to 5 ,,	2s. 6d., 3s. 6d.
C	Forbesi ...	... 4 to 5 ,,	3s. 6d., 5s.
C	incurvum ...	... 5 to 7 ,,	3s. 6d., 5s.
I	Jonesianum ...	... 4 to 7 ,,	2s. 6d., 3s. 6d., 5s.
S	Kramerianum	... 4 to 6 ,,	5s., 7s. 6d,
I	lanceanum ...	... 4 to 5 leaves	5s., 7s. 6d.
C	macranthum ...	... 2 to 3 bulbs	7s. 6d., 10s. 6d., 15s.
C	Marshallianum	... 4 to 6 ,,	5s., 7s. 6d., 10s. 6d.
C	ornithorhyncum	... 4 to 5 ,,	3s. 6d., 5s.
S	Papilio	... 4 to 5 ,,	3s. 6d., 5s.
C	Phalænopsis ...	... 4 to 5 ,,	5s., 7s. 6d.
I	sarcodes ...	... 3 to 4 ,,	5s., 7s. 6d.
I	sphacelatum ...	... 4 to 5 ,,	5s., 7s. 6d.
I	tigrinum ...	... 4 to 5 ,,	3s. 6d., 5s.
I	unguiculatum	... 3 to 4 ,,	5s., 7s. 6d.
I	varicosum ...	... 3 to 6 ,,	5s.
S	Phalænopsis amabilis	... 2 to 3 leaves	7s. 6d., 10s. 6d.

To be continued in next issue of this Journal.

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WM. GORDON,
PLANT IMPORTER, THE NURSERIES,
TWICKENHAM, MIDDLESEX.

Experienced Gardeners recommended.

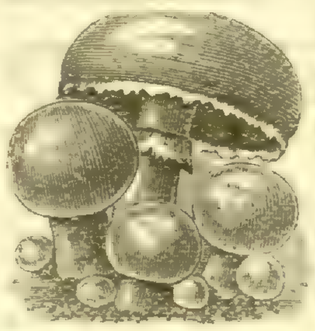
HERBACEOUS AND ALPINE PLANTS.

CATALOGUE of 64 pages, containing full information as to Colour, Height, Situation, time of Flowering, &c., free on application.

A CAPITAL COLLECTION for ROCKS, STUMPS, and BORDERS, from 25s. per 100, or 4s. per dozen.

Most of the Plants being in Pots may be despatched at any time, or by Parcel Post when fit.

RICHARD SMITH & CO.,
NURSERYMEN AND SEED MERCHANTS,
WORCESTER.



CUTBUSH'S MILL-TRACK MUSHROOM SPAWN.—Too well known to require description. Price, 6s. per bushel (1s. extra per bushel for package), or 6d. per cake; free by parcel post, 1s.

None genuine unless in sealed packages and printed cultural directions enclosed, with our signature attached.

WM. CUTBUSH AND SON (Limited), Nurserymen and Seed Merchants, Highgate Nurseries, N.

EWING & CO., LISTS FREE.

SEA VIEW NURSERIES,
HAVANT, HANTS.

ROSES of best new, scarce, and old sorts.

Also HARDY ORNAMENTAL Foliaged and Flowering TREES, SHRUBS, and CLIMBERS, in and out of pots.

FRIDAY NEXT.

CATTLEYA BOWRINGIANA.
CYPRIPEDIUM SANDERIANUM, Rchb. f.

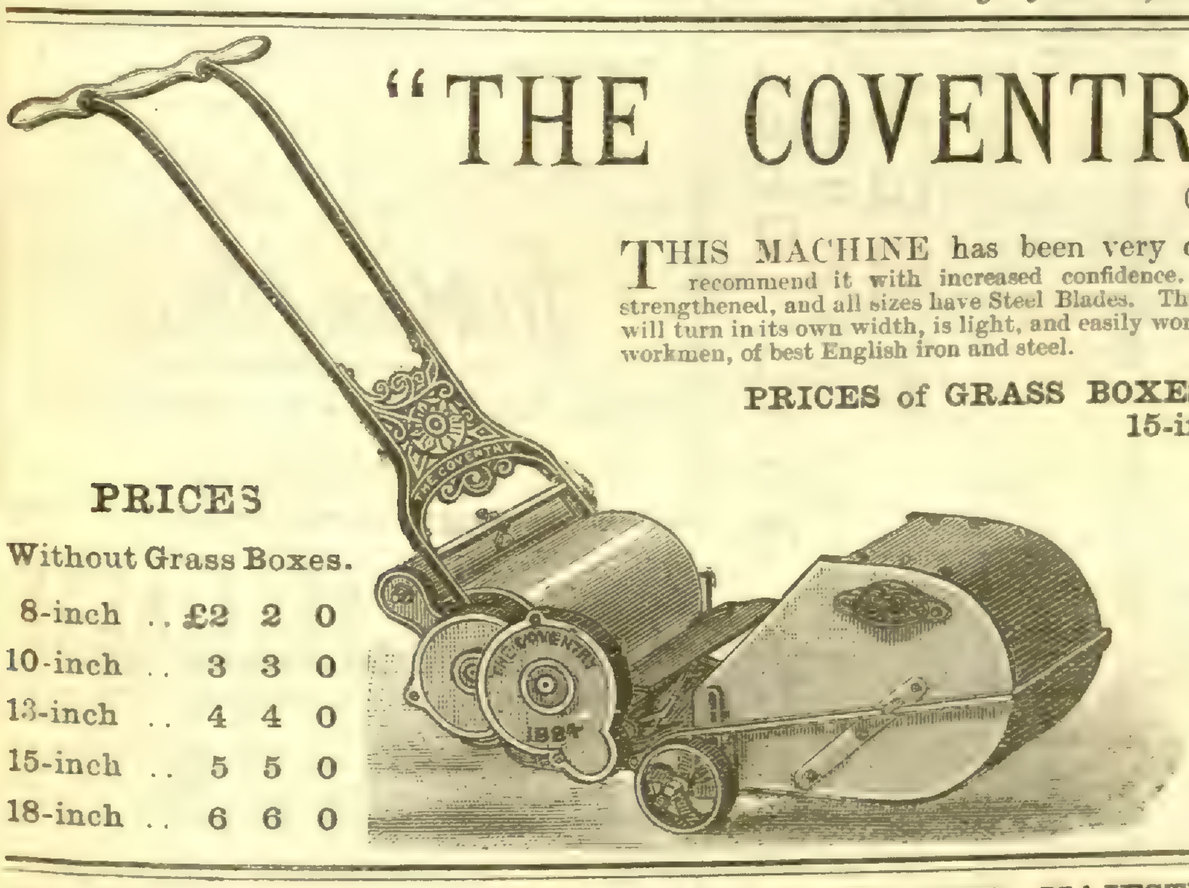
MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. SANDER to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, May 6, at half-past 12 o'Clock precisely, an importation of the splendid new winter-flowering CATTLEYA BOWRINGIANA—the whole of which are offered. The plants have arrived in the best possible condition, with plump dormant eyes. It is one of the most desirable Cattleyas, and no collection should be without it. From the excellence and beautiful colouring of its inflorescence, and flowering as it does in November, when Orchid bloom is very scarce, it has a twofold claim on all lovers of this beautiful genus. The flowers are produced in clusters, with sepals and petals of mauve, tinted rose, and a rich dark crimson labellum, the throat of which is stained yellow. See *Gardeners' Chronicle*, November 28, 1885, page 683. Awarded a First-class Certificate by the Royal Horticultural Society, October 31, 1885.

A large and fine newly-arrived consignment of CYPRIPEDIUM SANDERIANUM, well-furnished with splendid green leaves, and in good order, including many very distinct-looking plants, with large broad leaves. These invite special attention. C. Sanderianum is a most distinct and lovely species—certainly one of the most extraordinary and beautiful of the genus. The petals are broad at the base, 18 to 20 inches in length, of a reddish-purple colour, mottled with a lighter hue, and the pouch is dark brownish-red. It is altogether a showy and remarkably fine new introduction. See Professor Reichenbach's description in the *Gardeners' Chronicle*, May 1, 1886, p. 554; also illustration in *Reichenbachia*, t. 3, Part I. It was awarded a First-class Certificate by the Royal Horticultural Society, September 21, 1886.

The Sale will also include fine healthy plants of NANODES MEDUSÆ, MILTONIA CANDIDA GRANDIFLORA, M. SPECTABILE RADIANS, PLEIONE, new species; SACCOLABIUM BLUMEI, ZYGOPETALUM MACKAYI, LÆLIA DAYANA, and various BURMESE DENDROBES, all in fine condition.

On view morning of Sale, and Catalogues had.

"THE COVENTRY" LAWN MOWER
(REGISTERED).



THIS MACHINE has been very considerably improved since last season, and the Manufacturers can recommend it with increased confidence. The Roller is now made the full width of the Machine. The Knives have been strengthened, and all sizes have Steel Blades. The Gearing has been improved, and the arrangement for regulating has been simplified. It will turn in its own width, is light, and easily worked, will cut wet or dry grass of any length. It is made in Coventry by skilled English workmen, of best English iron and steel.

PRICES of GRASS BOXES (each):—8-inch, 8s.; 10-inch, 8s. 6d.; 13-inch, 9s.; 15-inch, 9s. 6d.; 18-inch, 10s. 6d.

WOOD ROLLERS (for attaching to Machine when Cutting Verges):—8-inch, 2s. 6d.; 10-inch, 2s. 9d.; 13-inch, 3s.; 15-inch, 3s. 6d.; 18-inch, 4s.

PRICES

Without Grass Boxes.

8-inch ..	£2 2 0
10-inch ..	3 3 0
13-inch ..	4 4 0
15-inch ..	5 5 0
18-inch ..	6 6 0

MANUFACTURED BY

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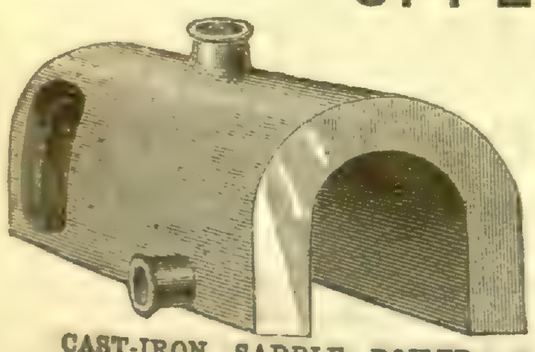

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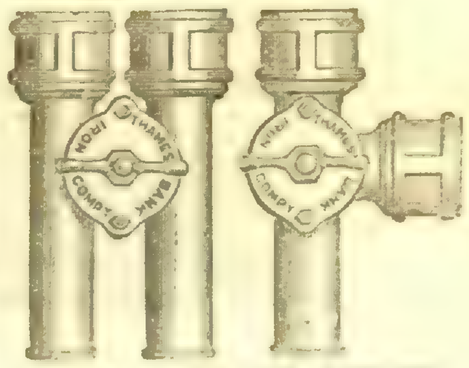

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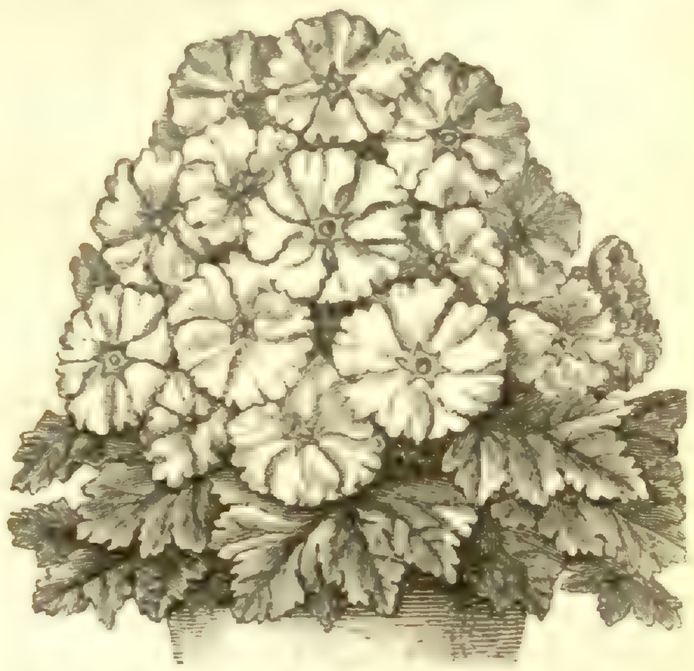

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THE

Gardeners' Chronicle.

SATURDAY, APRIL 30, 1887.

THE PRIMÆVAL FORESTS OF BRITISH GUIANA.

(Continued from p. 543.)

STARTING early in the morning for what proved the last day's journey, there was only a faint trail to guide us, which soon failed altogether. The first hours were almost unproductive of specimens for my collection; flowering plants were few and far between—fewer even than they usually are in these deep forests. Two or three Ferns were new to me among the vast abundance of cryptogamic life, and so was a large terrestrial Carludovica with plicate leaves, whose white flowers happened to catch my eye. Ascending from a stream where we had halted at mid-day to breakfast, we found ourselves on the brow of one of the highest ridges we had yet crossed, and facing us in the distance, across other valleys and lower ridges, but towering far above them all, there loomed a vast perpendicular escarpment of naked rock, apparently hanging in cloud from the dark blue mist that veiled the rest of the mountain. Here on the ridge where we stood was the camping place of which I had been told, to which our Indian guides had led us with unerring accuracy through the dense and pathless forest.

I decided to stay over the night here, and at once set the men to fix the camp, while I proceeded with the guides and two or three of the natives, to ascend the mountain beyond. Up to this hour the day had been cloudy and dull, with slight showers, but now the sun occasionally burst through, lighting up the forest with its gleams. It took an hour and three-quarters from the camp to accomplish the distance, the ascent of the mountain itself taking about an hour. At the stream in the valley at its foot we laid down and drank, as no water was to be obtained beyond; but long before the top of the mountain was reached, our tongues clave to the roofs of our mouths from the exhausting exercise. The lower part of the way is easy. One picks one's way

among huge upheaved boulders, which lie projecting high out of the ground in picturesque disorder, many of them as large as a good-sized cottage. Some rare Ferns and a few other plants grow on their perpendicular sides. I gathered very fine specimens of Antrophyum subsessile, which I had not met with before in the colony; Aspidium Plumieri, Adiantum olivaceum, A. phyllitidis, and Selaginella platyphylla. Polypodium blechnoides was also common here as everywhere. Trees of enormous size are frequent among this upheaval of vast boulders, and among them we noticed a Locust tree (Hymenæa Courbaril) against which lay a large quantity of gum that had tumbled out of its decayed centre. The tree was 6 feet in diameter and over 100 feet high, and the centre many feet from the ground was full of gum. The substance is deposited apparently while the tree still stands; when, in the course of decay, it falls, the gum is found in the centre among the decayed wood, or subsequently buried in the ground. There was also a Touck-pong (Sapium biglandulosum var.), the last one met with on the journey, a very large and, from the thickness of the bark, apparently a very old specimen; the milk, however, was not copious, owing probably to the previous dry weather, and perhaps partly to the nature of the ground. There was a considerable variety of other trees, and of Palms I noticed Tooroo and Bactris.

Ascent of Mount Ray-Wa.

I was anxious to get back to the encampment before dark, as I did not wish to have to spend a second day there, and I found the ascent from about half-way up a tough bit of climbing in such a climate. As I have before said, the upper part consists of a sheer escarpment of naked rock, some 500 or 600 feet high. It stands out like a prominent headland, quite bare, and appears to be the abrupt termination of a long mountain ridge. Though it was only about 2 P.M., the shadow which it throws over the lower part of the ascent made it appear like evening twilight in the forest. The ascent of this face is impossible to any creature, and we had to work round it, pulling ourselves up by the help of trees, roots, or creepers, or by the projecting stones, our footing often insecure enough.

We reached the top breathless, and parched with thirst. Thence our way lay through a thicket of undergrowth and large trees, many of them Bullet trees (Mimusops balata) of huge size. Here we picked up some Orchids, and a Fern, Aspidium subobliquatum, that I had only gathered before in the valley of the Potaro River. Vanilla grandiflora was common on the trees. At last, after making our way through this thicket for about ten or fifteen minutes, we reached the open brow of the precipice, and there the reward of our labour was revealed at a glance. The sight that met our eyes was magnificent in the extreme. Away in front, as far as the eye could reach, and right and left, bounded only by the horizon, into the haze of which it faded without trace of end or limit, lay spread below us an uninterrupted forest scene of surpassing beauty and grandeur, upon which we looked down as on an almost limitless panorama. No savannah and no water could be seen, and over it all lay, ever-shifting, the sunshine and shade of the sky above. Although, as I have said, the land over the whole of this region is undulating, rising in ridges 100 to 200 feet high, so elevated is the outlook and so vast the area surveyed by the eye, that no inequalities were observable, and it seemed a perfectly level expanse, except well back to the right in the distance where there is a succession of rounded mountains. To the left, too, rose another steep escarpment like that on which we stood, and almost as high; probably both parts of one mountain chain.

Fig. 108.—Primula vinciflora: flowers purple. (see p. 575.)

Gradually, by fixing one's gaze on the forest more immediately beneath the foot of the mountains, so as to particularise individual trees, one observed that they were far from being all of a size or forming an even surface. It is really endlessly diversified in the varying heights and character of the trees. These are not of any one or few species, except where Mora (Dimorphandra excelsa) covers some large tract, as it often does. Their varied colour in foliage, possibly often modified by bloom; their diversity of form and outline, the arrangement and colour of the branches, which often rise quite bare and whitened by age or the natural colour of the bark, above the green sea of foliage—each particular gives character and individuality to these the oldest forest members as seen from this height and distance. Next in age and size, but varying in both immensely, are the trees which form the bulk of the forest, filling all the intervening spaces over which the older giants spread their heads. Beneath these again, struggling with many competitors and many foes, and ever reaching upward to the all-important light, are countless other generations coming on.

Far off near the horizon in two or three places there rose above the forest faint blue columns of smoke, such as large camp fires burning nearer might produce. The great distance caused the illusion, for no doubt they were the newly-felled Cassava fields of Indians on fire, and covered several acres in extent. I stood on the edge of the vast precipice, with the Indians close around me, viewing the magnificent scene, when an incident occurred recalling my thoughts from the sublime to the ludicrous. One of the boys put his foot on what seemed to be a slight elevation in the rock, and raised himself to see better. It moved beneath him, there was a start on his part, and then a general shout of laughter followed, as the object—a turtle—was captured.

It was now a gloriously fine afternoon, the few clouds had all disappeared, and the shimmering tropical sunlight bathed the whole scene in its warm glow and glory. High over the forest-clad slopes and ridges which stretched away from the base of the mountain, but far below us, sailed vultures in easy and graceful flight; and now and then a pair of macaws or a company of parrots would meet one's eyes, still lower, as tiny objects, speeding with rapid wing on their noisy way. The more we surveyed it the more wonderful seemed the variety and diversity of its features. The enchantment was supreme, but tempered by that subdued sense of mingled pleasure and exquisite sadness which comes over the mind under the influence of such a scene. While we lingered, evening crept slowly on, and at last we turned our faces homeward.

The descent was rapid, and I had to give up my cutlass to have both hands free to grasp the trees and other objects clutched at to moderate our involuntarily swift progress. The ground was covered with dry leaves, upon which I found a difficulty in maintaining a secure footing both in ascending and descending, slipping many a step backward in the former with a jolt that took much energy out of me, and in the latter getting many an involuntary "slither" by my feet suddenly slipping from under me, somewhat to the danger of the men in front. The descent, however, was soon over, with labour not much felt in comparison with the difficulties of the ascent. No incident to note occurred till I was climbing the steep hill rising to our camp, when I was startled by a long black snake, which, having been disturbed by the people above, shot past me with astonishing velocity in its hasty descent.

As we sat near the camp-fire that night, which flared brightly with a quantity of the Locust gum that I brought from the tree we passed in the afternoon, the Indian chief, who had accompanied me to the mountain, and the guide, in reply to my questions, told me the following tradition about its name. They said:—The name of the mountain was Ray-wa. Long long ago there lived on it a savage bird, like a maccaw, but it was at length killed, and ever since the mountain had borne this name. The story varies in the mouth of different narrators, but in every case is the same in substance. Lay-wa others pronounced the name. Another version they told was that a large animal, named oorooparie, lived there. People went out together and destroyed it, because it destroyed their people. There were two of these creatures, one old and the other young, but both were destroyed. Others apply the legend to a savage man, an Acawoi, who lived there, and whom the Carabisci killed. Both of these tribes call the mountain by the name of Ray-wa; but the black man who visited the region a few years ago, and was the first to bring it to the knowledge of the non-Indian community, called it Mount Russell, after our eminent fellow colonist, the Hon. William Russell. No name among colonists of the day is so worthy to be applied to it. At the same time I think it a pity not to preserve, wherever possible, the original Indian names in the country. The day will come probably when the names, with what of legend or history may still cling to them, will be the chief mementoes existing here, as on the West India Islands, of the original inhabitants of the land.

During the night we were startled from sleep by the fall of a large tree in the valley just below us. This is a frequent experience, but the sound is horribly uncanny in the darkness and depth of the forest at night. There is heard first the preliminary sound of strain and stress that tells of what is happening. This is not easily described, though one accustomed to it recognises instantly what it portends; then the crashing of branches follows, appreciably slow at first, the sound increasing in volume, till it culminates in the final crash and roar which resounds far and wide; then for a few moments everything is still, until the usual sounds of night in these tropical forests begin again; the occasional cry of a night hawk, the varied croaking of innumerable frogs, sometimes rising and falling in fitful gusts, now near, now far away, the unearthly roar of some fiendish band of monkeys, and now and then the scream of a jaguar or tiger-cat, or the thud of some falling branch near one. The first duty in camping for the night is to look aloft, and see that there are no dead branches overhead, and that no dead Mora or other tree stands near. *G. S. Jenman, Government Botanist, British Guiana.*

(To be continued.)

PLANTS NEW OR NOTEWORTHY.

TWO NEW PRIMULAS.

[The Primrose Conference of last year excited much interest, not only at home but abroad, and resulted, as many of our readers know, in the receipt of seeds of new or rare species, and in various accessions to our knowledge of the genus, and of the conditions under which its species grow naturally. M. Franchet, who is engaged in investigating the rich stores accumulated in the central and south-western provinces of China by the zeal of the French missionaries, kindly sends us descriptions of two new species of very remarkable character, and which it is to be hoped will soon be introduced through the medium of the Jardin des Plantes. Ed.]

Primula vinciflora, *n. sp., Franchet.**

A new solitary-flowered Primula. This beautiful species (fig. 108) has large purple-violet flowers slightly inclining towards blue, and resembling those of Vinca major. It belongs to the same group as P. Elwesiana (King), and P. Delavayi (Franchet), but is quite distinct from both in the shape of its corolla. The leaves resemble those of P. Elwesiana, but are covered with sessile, reddish glands, which are wanting in the Sikkim plant. P. vinciflora grows in elevated meadows, and not on rocks, as do the greater number of its congeners in Yun-nan, which makes one hope that its cultivation may be easy. Its rhizome is very much shortened, and the plant appears to be held in the ground only by its large root-fibres. M. Delavay says that seeds will be sent shortly. *A. Franchet.*

Primula blattariformis, *Franchet.**

This is also a native of Yun-nan, in calcareous pastures on Mount Che-tcho-tze. It approaches P. malvaceam, Franch., but differs from it in the form of its leaves, which are ovate or obovate, deeply crenate, and crested, and also in its long raceme, which is over 20—30 cent. long, and springs from the centre of a tuft of spreading leaves. The numerous flowers are scattered on the upper part of the raceme, each one borne on pedicels 2—4 mill. long for two-thirds of its length, and are of a lilac colour, the corolla lobes being broadly obcordate. *A. Franchet, Paris.*

Anthurium purpureum, *N. E. Br., n. sp.*

This is rather a fine species, belonging to the same group as A. Harrisii, A. coriaceum, &c., but is distinct from all, and on account of its fine purple spathe and rich violet-purple spadix is more ornamental than most of that group. It was sent to me, together with a drawing of the plant, from the Royal Botanic Gardens, Glasnevin, by Mr. F. W. Moore, who informs me that it comes from Brazil. The stem is ascending, with the internodes undeveloped, rooting below, and covered with the fibrous remains of the scale-leaves above. Petioles 3—6 inches long, rounded on the back with a broad, shallow channel, having blunt edges down the face, green. Lamina coriaceous, bright green above, slightly paler beneath, about 15—16 inches long by 3¾ inches broad, oblong-lanceolate, acute, cuneate-acute at the base. Midrib flattish at the base, and subacutely prominent in the apical half above, beneath it is very prominent and obtusely triangular; primary lateral veins 20—23 on each side the midrib, only very slightly prominent on either side, the lower ones ascending and running out to the margin, those from about one-third or half-way up rather more spreading, and uniting in an intramarginal vein about one-third of an inch distant from the margin. Peduncle a foot long, compressed terete, green. Spathe spreading or reflexed, more or less curled, 4½ inches long, 1 inch broad, lanceolate-acute, purple on both sides, suffused with green at the base. Spadix 6 inches or more long, one-third of an inch thick, slightly taper-

* *Primula vinciflora*, n. sp.—Rhizoma brevissimum, fibris radicalibus validis; squamæ vaginantes membranaceæ, fulvæ, albo-marginatæ, extimæ rotundatæ, intimæ late obovatæ, sensim in folia abeuntes, omnes, simul ac folia, glandulis testaceis sessilibus conspersæ. Folia tenuiter papyracea, plus minus petiolata, limbo e basi longe attenuata obovato vel oblongo-obovato, præter glandulas pilis albidis pluri-cellularibus vestito, margine ciliolato, integro vel vix conspicue crenulato. Flores coetaei. Pedunculus e rhizomate solitarius (vel rarius pedunculi bini), foliis usque duplo longior, pilis glandulosis patentibus apicem arcuatum versus densioribus vestitus. Flos pro genere amplus sub anthesi cernuus, demum erectus; calyx dense pubescenti-glandulosus, ad basin fere usque partitus, lobis anguste lanceolato-linearibus, parum obtusis; corolla præter tubum flavescentem purpureo-violacea, tubus calyce 4—5-plo longior, extus pilis nigris glandulosis obsitus, intus (nisi ad faucem) glaber, e basi ad apicem vix sensim ampliatus, limbus aperte cupulatus, quasi rotatus, profunde (fere ad basin) in lobos 5—6 partitus, lobis e basi cuneata apice dilatatis, plus minus emarginatis; stamina supra medium e tubo libera, filamentis glabris; stylus brevissime intra tubum late apertum exsertus; capsula. . . .—Yun-nan, in pratis Lopinchan, prope Lankong, alt. 3200 m.; fl. 25 maj., 1886 (Delavay, n. 2070). *A. Franchet.*

* *Primula blattariformis*, n. sp., Franch.—Tota pilis brevibus papilliformibus vestita; folia plus minus petiolata; limbus e basi rotundata vel breviter attenuata ovatus vel obovatus; grosse crenatus, crenis denticulatis; pedunculus erectus; flores longe racemosi, pedicello brevi; bracteæ calycem subæquantes, inferiores oblongæ, superiores lineares; calyx subanthesi breviter tubulato-campanulatus, lobis ovato-triangularibus, mucronatis, valide reticulato-nervosis; calyx post anthesin valde accretus, tubo hemispherico lobis explanatis acute dentatis paulo longiore; corolla lilacina, tubo extus puberulo calycem paulo superante vel nunc illo duplo longiore, lobis late obcordatis, squamulæ ad faucem transverse oblongæ; stamina brevia, supra medium tubi inserta; capsula subglobosa, parva, calycis in tubo inserta; semina angulata (madefacta) papillis obtusis instructa. Folia (incluso petiolo 1—4 cent.) 7—15 cent. longa, 3—5 cent. supra medium lata; pedunculus sesquipedalis et ultra, racemo 20—30 cent. longo; pedicelli 2—4 mill.; calyx sub anthesi 5—6 mill. longus, ad maturitatem 10 mill., limbo explanato 12—14 mill. lato; corollæ tubus 10—12 mill. longus, limbo 15—22 mill. diam. Yun-nan, in pascuis calcareis ad montem Che-tcho-tze, supra Lapintze August 27, 1885 (Delavay, n. 2092). Prope P. malvaceam, Franch., collocanda; sed jam foliorum forma et præsertim inflorescentia longe racemosa, optime distinguenda.

ing, rich dark violet-purple. Flowers one-sixteenth of an inch in diameter. *N. E. Brown, Herbarium, Kew.*

Cattleya Dukeana, *n. hyb. nat.?*

Dr. Duke kindly writes:—"By this post I have sent you a Cattleya flower, which is a stranger to me, and to my mind rather pretty. It was bought last summer at Stevens' amongst a bundle of imported plants of Cattleya Leopoldi. The old pseudobulbs are about 2 feet high, and in thickness about intermediate between Cattleya bicolor and amethystoglossa. There are no old leaves, but all the new growths are about 15 inches high and bear three leaves, of a purplish-green colour, about 5 inches long and 2¼ inches broad. The flower sent is the only one on present spikes, but it came up without a sheath, another sheath has probably more flowers."

The flower is a very pretty thing, equal to a good flower of Cattleya Loddigesi (yet not of M. Le Doux's edition). It has nearly the stiff Vandaceous substance of Cattleya guttata Leopoldi, and the sepals look mostly outside as if varnished. The rather long median sepal has a green apex, is light ochre-coloured outside, and washed with the dullest mauve-purple inside. The lateral sepals are bent at an angle, of the same colour outside, inside dimidiate, the superior half brownish, the inferior mauve-purple. Petals broader, undulate, lighter at the borders, mauve-purple on the disc. Side-laciniæ of the lip not quite covering the column, so that nearly its anterior third part is left free. This is a prominent character! Side-laciniæ dolabriform, white, at the margin, light purple. Central lacinia with a broad stalk and the reniform anterior part toothletted and covered with warts. The disc between the side-laciniæ is sulphur-coloured at the base. Then there run six mauve keels over the mid, leaving on the base of the mid-lacinia a triangular sulphur-coloured area. The mid-lacinia, excepting this area, is of the finest mauve-purple, and has a narrow decided white border. Column very strong, white, yellow at the base, with some purple lines on the sides, full of mauve-purple lines in front. Pollinia quite Cattleyoid.

I have named this fine flower in honour of my excellent correspondent, Dr. Duke, The Glen, Lewisham. I wish to thank this gentleman for his assistance both in his remarks (copied here, to furnish a fine model), as for his sending the flower quite fresh, even when the Doctor himself would perhaps have liked to enjoy it longer. Four hours after the arrival of the flower my letter with this note was ready. *H. G. Rchb. f.*

Lachenalia aureo × reflexa: *new garden hybrid.*

This is a very decided acquisition to our set of garden Lachenalias. I do not know by whom it was raised, but our Kew specimens, from which the following description was made, came last year from Mr. F. W. Moore of Glasnevin, and are in full flower at the present time (the middle of April). It has the bright golden colour of L. aurea, combined with erecto-patent ventricose flowers of reflexa.

Description.—Bulb small, globose. Leaves two, bright green, fleshy, unspotted, lanceolate, recurved, 6—8 inches long, 1½—2 inches broad. Peduncle terete, unspotted, rather glaucous, half a foot long. Raceme 4—6 inches long, eight to twelve flowered; pedicels short, erecto-patent; bracts small, deltoid. Perianth oblong trigonous, 1—1¼ inch long, bright yellow, slightly tinged towards the base and tip of the outer segments with green, fading to reddish-brown; inner segments obtuse, ¼ inch longer than the outer. Stamens reaching to the tip of the inner segments. *J. G. Baker.*

Fig. 109.—cypripedium marmoratum. (see p. 577.)

Orchid Notes and Gleanings.

ORCHIDS AT STUDLEY HOUSE, SHEPHERD'S BUSH.

It is scarcely possible to conceive a place in the neighbourhood of London better furnished with rare Orchids in bloom at the present time than that belonging to Fred. G. Tautz, Esq., in the Goldhawk Road; or, indeed, in which a better succession of fine and interesting thing is to be found at all seasons, that is ever possible, seeing that each new arrival gives an opening for going over the whole of the ground again. In flower in Mr. Tautz's collection were fine plants of C. Dauthieri marmoratum (fig. 109, p. 576), with handsome flowers, curiously striped, and marked like a flake Carnation, the flaking being a pretty combination of white, purple, and rose; C. Boxalli atrata (*Gardeners' Chronicle*, p. 210), with shiny black-blotched dorsal sepal, tipped with white; C. Peteri (fig. 110), C. Dayanum, and a new species with flowers something like these two, or C. Swanianum, but very different in leaf; C. hirbright orange base to the lip; and O. vexillarium leucoglossum, which has grand flat flowers, with pure white labellums and delicate pink sepals and petals. Mr. Cowley takes great pride in the Orchids in his charge, and especially in the fine lot of Odontoglossum vexillarium, which he succeeds in growing up to the very best look in leaf and flower, notwithstanding their location actually in the region of London fogs. He considers that his careful use of the syringe and discontinuance of its use on the plants during the cold and dull weather saves him from many a disaster which would otherwise occur. In the flowering

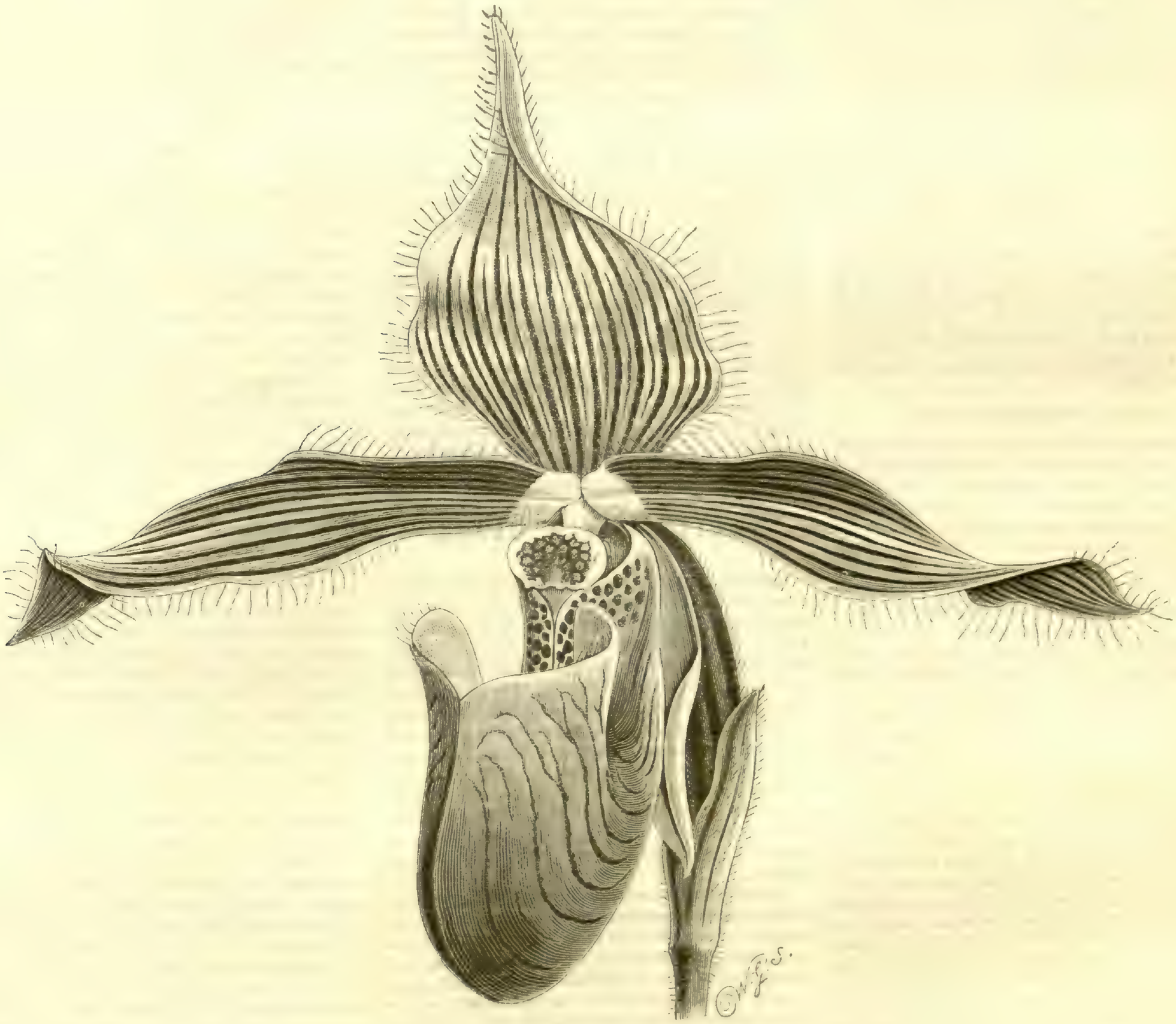

Fig. 110.—Cypripedium peteri.

One reason for the continuity of the flower display is that the Cypripediums are made a salient feature, every obtainable kind, either species or hybrid, being eagerly added to the collection, which consequently contains some unique specimens, such as the pretty C. Tautzianum, a hybrid between C. niveum and C. barbatum; C. Marshallianum, a cross with C. concolor, illustrated by us at p. 513, and many others. Such a collection of Cypripediums is a very interesting subject to pursue, and large as this class of plants now seems, it is nothing in point of variety and beauty to what it will be when the hybridists have rung out the changes which the material in their hands places at their command, if sutissimum, C. villosum aureum, C. niveum, C. concolor Regnieri, C. ciliolare (one a superb form), C. Harrisianum, C. porphyreum, C. Druryi, and some grand varieties of C. barbatum, of which C. b. Warneri and C. b. O'Brieni are two very handsome and bright-coloured kinds of the "biflorum" section, and many other rare Cypripediums are in bud.

In the show-house is a splendid specimen of Cattleya Mendelii, with seventeen flowers, equal in colour to that named Duke of Marlborough; Cattleya Lawrenceana and C. Lawrenceana oculata, with bright lip and clear white tube; many C. citrina, many Odontoglossums in variety, very charming being O. Pescatorei aurantiaca, a distinct variety, with large house, too, were fine sprays of Oncidium Marshallianum, O. concolor, and O. sarcodes (one with 130 flowers). The last-named is often inclined to run a long, thin, straggling inflorescence, but by Mr. Cowley's plan of pinching out the point after it has run a sufficient length, short well-branched spikes are secured which have a better appearance, and do not draw so much on the plants as they would if allowed to run. Lycaste Harrisoniæ, L. gigantea, L. Skinneri, Cymbidium Lowianum, Phaius Wallichii, P. maculatus, and some fine Cattleyas and Lælias are here, too, in bloom. Another house was also well filled with flowers, but here the Dendrobes were prominent—fine examples of D. Wardianum

giganteum, D. W. candidum (a lovely white variety), D. chrysotoxum, D. Schroderianum (the true plant), D. fimbriatum oculatum, D. nobile near to D. n. nobilius, D. n. delicatum, a large white nobile; D. Griffithianum, and D. Veitchianum were in flower; the last named is a rare and curious species from Java, the large flowers are hairy at the backs of the sepals, and yellow, the broad and curiously formed labellum having a quaint tracery of a chocolate colour. Other noteworthy plants in bloom were Cattleya bogotensis Tautziæ, a lovely thing with pearly-white sepals and petals, pink front to the labellum, and pale yellow throat; C. Trianæ Schroderæ, which is distinct in having a certain resemblance to C. Eldorado in the labellum, and in its peculiar fragrance; its young growths, too, are glaucous. Here also were the grand Lælia flammea of Messrs. Veitch, L. grandis, some fine L. elegans, the curious Ponthieva maculata, Promenæa citrina, Aeranthes Leonis, Odontoglossum Reichenheimi, Oncidium maculatum Russellianum, Cattleya Mossiæ, and many other Cattleyas and Lælias well advanced, the L. purpurata looking very promising. The Odontoglossum-house was full of spikes in bud and some in flower on the Odontoglossums and Masdevallias contained in it. Among the latter were some plants of M. ephippium, M. Lindeni, and M. triangularis, the M. Harryana varieties coming later on; and in the Phalænopsis-house, which has a large lot of healthy specimens suspended among Pitcher-plants above Anthuriums, Eucharis, &c., in bloom, were several of the finest species of Phalænopsis, all well grown and well flowered like the rest of the plants in this collection.

Orchids at Gunnersbury Park.

Some remarkably fine subjects were recently to be seen in bloom in the collection Mr. Roberts has here. The strikingly handsome Dendroblum Paxtoni was very fine, the blossoms large, of a rich deep orange colour, and produced in massive spikes. One excellent peculiarity about the species is, that it produces its blooms at different times of the year. A collection of Cattleya Trianæ has been very fine. Some large flowers still remain to show how rich the varieties are. A very fine specimen of Cypripedium Stonei had three spikes of flowers; two of them have four flowers, and the other three. Cymbidium eburneum was very fine indeed, but age is beginning to tell upon the blossoms. In a portion of a Pine-pit Mr. Roberts had a wonderful display of Vanda teres. There are about twenty-five plants planted out, and they had in the aggregate some thirty spikes of blossoms, two spikes on some of the plants, and they contain seven and eight flowers each; and such flowers, too—large, massive in substance, and superbly coloured. The plants have been in this pit from two to three years, but they are cut back and replanted each season; there is at the bottom a layer of crocks, then one of charcoal, and then the plants are placed in a bed of moss. It is Mr. Roberts' intention to plant another section of the pit in a similar manner. In the cool-house Ada aurantiaca shows a fine depth of colour; the collection of Odontoglossum Pescatorei comes on but slowly. Mr. Roberts states that the north and east winds, which are much felt at Gunnersbury, have had a very deterring effect on the plants. *R. D.*

The Flower Garden.

ROSES.

A sharp look-out will have to be kept on these for the first appearance of greenfly and the Rose maggot. As soon as the first-named is seen the trees should be syringed with tobacco-water or dusted with tobacco-powder, but this should be syringed off immediately it has destroyed the insects. The maggot is not so easily reached by outward applications as the insects fold themselves up in the leaves. The best way is to go over the plants and where the leaves are drawn together by the webs to give them a squeeze between the finger and thumb. Old Roses in damp situations often have their stems overgrown with moss; this should be destroyed by either brushing it off, or by painting the trees with a mixture of powdered lime and soot, mixed with water.

Edgings.—Echeverias may be planted if the plants have been wintered in cold frames and freely exposed for the past few weeks; but if they have been wintered in a greenhouse the planting had better be deferred till next month. In planting avoid the almost perpendicular slope, but slope the edge, as this will exhibit the plants better. Make good any blanks in previously planted edgings.

Beds and Borders.—As flower-beds become vacant they should be well manured, if necessary, and dug. It is a mistaken idea that flower-beds require little or no manure. In many gardens the beds are seldom without occupants, and many of the subjects used for the embellishment of the flower garden are gross feeders. All beds which were manured and ridged for the winter should be forked over in readiness for planting. By the middle of next month early sown Intermediate Stocks may be planted out. The late frosts and cold weather generally have greatly retarded the growth of hardy herbaceous and other subjects, and much of the work in this department which should have been done last month may safely be undertaken now. Primrose, Polyanthus, Auricula, and Narcissus are but just in bloom here; Hyacinths, Tulips, &c., have just arrived at their best. If not already done, means should be taken to preserve the flowers fresh and presentable, and to this end a mulch of cocoa-nut fibre or Mushroom dung may be used to keep them clean and the soil moist. A few hoops and mats to shield them from frost, and a little covering of tiffany to throw over them when the sun is very bright, will greatly assist in preserving the beauty of the bloom. *W. M. Baillie, Luton Hoo.*

Fruits Under Glass.

Grape Thinning.—In Grape thinning the operator should have a knowledge of the size to which the berries of the different varieties will attain. Berries having short footstalks—such as Black Alicante, Madresfield Court, Lady Downe's, and Gros Maroc—require being thinned more severely than long-stalked varieties, as Buckland Sweetwater and Gros Guillaume. However, large berries should not be obtained at the expense of compactness of bunch. The process of thinning the bunches should be proceeded with as soon as the berries are set, observing that the crown berries should be left, and at rather more than an inch apart, care being taken not to injure those left by touching them with the hand or scissors.

Thinning Peaches.—Defer the final thinning of the fruit in succession-houses until the stone is formed, when the number of fruit to be left on the individual trees must be determined by their condition, and whether extra large to medium-sized fruit are in most request. If the former, leave one fruit to each superficial foot of tree, but if the latter be the object, the distance between the fruit may be reduced 3 or 4 inches; and with the object of securing the best possible results, give copious supplies of tepid liquid manure at the roots, and keep the trees clean by syringing them well overhead morning and afternoon at closing time (about 3 o'clock), when the temperature—assuming that the condition of the trees is thoroughly satisfactory—may be run up to 95°, with sunheat and abundance of atmospheric moisture in the house. Aim at a night temperature of 60° to 65°, and 5° higher by day with fire-heat.

Strawberries.—These should in every stage of growth have liberal supplies of water given them at the roots daily during bright sunshiny weather, and in some cases it will be necessary to give water at the roots twice during the day. Plants swelling their fruits should have weak tepid manure-water applied at the roots once a day, from the time the fruit is set until it begins to colour, and they should be syringed copiously overhead morning and afternoon during that period. While the plants are in flower, and also when the fruit is approaching maturity, they should be subjected to a drier and airier atmosphere than that recommended to be maintained while swelling their fruits. *H. W. Ward, Longford Castle.*

Florists' Flowers.

THE CINERARIA.

I have been taking notes of the Cinerarias exhibited at the principal exhibitions this year, some of them as far north as Newcastle-upon-Tyne. As a general rule seedlings only are grown, and when a good strain is cultivated one may depend upon obtaining really beautiful flowers. By far the best flowers exhibited have been sent by Mr. James, of Farnham Royal, Slough. The named sorts have been described in previous numbers, and the collection at p. 549, therefore nothing more need be said on this point. My object in alluding to the Cineraria at this time is to draw attention to its culture from seeds and offsets. It is now time to begin the propagation of the earliest flowering plants. Those intended to flower in April need not be propagated until June. Propagation from seeds is the most popular method; it is the easiest certainly—a very large number of plants can be obtained at a very moderate expense. The seedlings may be produced on a hotbed; but I fancy that the best way is to allow the seeds to vegetate in a greenhouse. The Cineraria does not like a warm temperature, and if the plants are raised in a frame they ought to be removed to a greenhouse as soon as they appear above ground. Greenfly is more likely to attack them when grown in heat, and will get underneath the leaves, when they lie on the surface of the ground, and are not larger than a threepenny piece. The pricking out of the young plants, and their subsequent development up to the flowering stage, has been alluded to in previous numbers; but success must depend upon the care with which all the details of the work are carried out. Notwithstanding Cinerarias are rather gross feeding plants, and that seedlings have more vitality in them than offsets of named varieties, it is easy to overdo them with stimulants in the potting soil, or by the application of manure-water subsequently: the position of the plants is also of much importance. Those who have a house that they can set apart entirely for their culture, will find no difficulty in their management. A light airy span-roofed structure is best; with internal arrangements so that the plants are as near to the roof glass as possible. A light tiffany shading is a necessity when the sun is powerful; but too great an amount of shading is an evil to be guarded against, for it will cause the leaf-stalks to become long and weak, and the leaves of undue thinness. I would like to add here, that over-potting, or the use of an over-rich compost will aggravate all these evils.

Propagation from offsets is not so well understood, but nevertheless it is a method of culture that must be adopted in order to preserve any desirable varieties that may have been raised from seeds. The plants produced in this way attain quite as large proportions, and one of as perfect development as seedlings, if well managed. As the plants go out of flower about the end of April, cut off the flower-stems, and place the plants in a cool-house near the glass; or if danger of frost is over, a cold frame will do as well as anywhere. Growths will soon be produced from the base of the stems, and during the month of June they may be taken off with a portion of roots attached, each offset to be planted in a small pot, and the whole of them must be placed in a close frame or hand-glass until roots have formed in the potting soil, when they must gradually be inured to more air and light. After being well established they must be potted on and treated exactly like the seedlings. *J. Douglas.*

Gold-laced Polyanthuses.

Experience during the past few winters has shown me that Polyanthuses of all sections suffer far less

from cold than from heat, and it is very probable that many of the failures which growers of the gold-laced section complain of arise from the fact that even in cold frames summer heat tends to disrooting, thus leaving the plants less capable of withstanding hard weather than would otherwise be the case. Still further, all Polyanthuses suffer when kept in a close damp atmosphere, such as a frame gives when under snow for a considerable time during the winter. Similar plants established in the open ground, and yet under snow, suffer far less, because even under the densest snow there is breathing space and some little ventilation. That is hardly the case in a close frame, from which there can be no escape of damp.

In spite of the fact that the soil here in the open field was for a considerable part of the winter so rotten, as it were, with excess of moisture that I could not walk over it without sinking in over the boots, yet even gold-laced Polyanthuses remain quite uninjured, and I am persuaded that even the most tender kinds would hardly suffer if similarly tested. William IV., one of the best red grounds extant, and Barlow's John Bright, planted out last spring, stood the summer very well, and a considerable portion of the winter, and were lifted only to increase stock, then planted up in a soil-bed in a cool-house, in which there was plenty of air-space; every piece grew well—far better, indeed, than if potted. Perhaps it would be wiser if Polyanthus growers would plant out in similar airy houses for the winter, rather than keeping their plants in pots. Potting might be done as the blooming period approached, if needful, but the manner in which the plants rejoice in free root space is evidenced by the fact that, when lifted recently for replanting outdoors, the roots were found to have run out freely. I confess I should be pleased to try all the best old kinds in a similar way. The chief drawback is found in the house becoming too warm on sunny days, and forcing plants into bloom a month too early for exhibitions, but a north house might be utilised with good advantage. If, however, Polyanthus fanciers would construct a low spanroof-house, 10 feet in width, with 3½ feet beds of soil on either side, and plant these early in the winter with Polyanthus of all sorts and conditions, they would have ample reason to be delighted with the bloom resulting. Such beds might be utilised for the growth of Cucumbers, Tomatos, &c., during the summer. In an unheated house I have never found aphis to be troublesome with Polyanthuses. It is very likely that even the choicest Auriculas would do well under similar treatment. In any case the plant would, as far as Polyanthuses are concerned, dispense with troublesome pot-culture, except when a few are needed for exhibition. After the show period each plant, lifted carefully with a ball of soil, may easily and safely be transplanted into the open ground, where, being the chief rooting period, they would soon become established. A top-dressing of manure from old hotbeds is helpful, as also are occasional waterings with tepid water during hot dry weather. When we hear complaints of mischief done to plants in frames by severe winters, it becomes us to see how by some other methods of culture such failures may in the future be avoided. *A. D.*

The Hardy Fruit Garden.

GENERAL DIRECTIONS.

Attention must still be given to the earlier grafted trees, to see that there are no cracks in the the clay to admit air and rain to the scions. If this is found to be the case it must be remedied at once by removing the old carefully, and applying fresh clay, or failure will result.

Apricots are now swelling their fruits; Peaches and Nectarines are in many cases set; Pears, Cherries, and Plums on south and west walls are nearly in full bloom. The continuance of dry weather, although accompanied with sharp frosts most nights, has been very favourable to the blooming of fruit trees. All kinds of fruit trees are well studded with bloom-buds, and there is every prospect of a good crop of fruit in this district.

Should the disease known as blister or curl make its appearance on Peaches and Nectarines, which it seldom fails to do early in the season, especially will it be the case should we experience cold rains and winds on change of weather; there is no other remedy but to pick the leaves off, and burn them; and should it also extend to the young wood, this must be cut away, and the next best situated shoot left to take its place, it being impossible for the trees to make any headway loaded with these monstrous growths, which seem to draw the very life from them. Should weeds put in an appearance on bush fruit quarters and borders, ply the Dutch hoe amongst them in dry weather. *E. Ward, Hewell Gardens, Bromsgrove.*

THE WINTER GARDEN AT THE FIRS, LEE.

The residence of J. W. Larking, Esq., is situated in the little town of Lee, south-east of London, on what may be said to be the last spur of the Kentish Downs. The hill and dale charanter of the landscape hereabouts possesses many charms for the landscape gardener, if he be a man of taste, and has been made the most of by the owners and lessees of numberless pretty villas in Lee, Blackheath, Lewisham, and further afield. The grounds at The Firs are just about as abruptly undulated as any that are to be found thereabout, and have afforded Mr. Larking and his gardener, Mr. Saunders, scope for creating garden scenes on a small scale that differ greatly in style and methods of planting from the usual suburban garden, monotonous with the Pelargonium, Calceolaria, Lobelia, Golden Feverfew, and the rest. This is only in passing, for there is in this particular untoward season little to observe in flower, and our business was rather with the unique "winter garden" of the place. Why such structures get to be called winter gardens is not clear, for the rule is to have them filled at all seasons with plants that flower, or possess attractive foliage. This one is built on the side of an acclivity, therefore the floor and the roof also, have three different levels. On entering at the highest point much of the interior is seen at one glance, spread about and below the observer. When in its summer garb the effect must be very good—better, perhaps, than in winter or spring. Rocky banks, beds, and little terraces, do duty for the stages usually found in conservatories, and on or in these the plants are sunk, if in pots, or planted out in proper compost, Selaginella denticulata being employed to cover much, but not all, of the ground between the specimens. Of noteworthy specimens observed we may mention Cibotium princeps and C. Schiedei, underneath these being a large clump of Hedychium Gardnerianum planted out, young and old flower-stems being still green. Lasiandra macrantha was employed to cover the rafters overhead in this part, and grew very strongly planted in the border; as did Philodendron pertusum (Monstera). A three-year-old Luculia gratissima, likewise in the border, made a pretty bush 5 feet in height, that had flowered well in the late autumn. Strelitzia regina, seldom seen doing well in a pot, forms here a good mass of healthy strong foliage, amongst which the flower-spikes were already pushing up. Habrothamnus Newelli gave a welcome glow of rich violet-crimson colour on a wall at the west end of the building, and overhead were trained the shoots of Plumbago capensis and a great Maréchal Niel Rose. Bomareas are used on roof supports and walls, but are not a success. In the borders and raised beds bright coloured Azaleas, Roses, Cinerarias, Trilliums, species of Primula and other spring-blooming plants were sunk up to the rim of the pots. A circular annexe at the bottom of the slope, and reached by a short flight of steps, contained a large Palm and a plant of Araucaria excelsa, the latter so tall that it is about to push its leader into the open air, and will shortly make room for a specimen of Amherstia nobilis, to which it is intended to devote this part of the building. There are no partitions between the various parts, nor does the gardener think that any will be necessary for the intended Amherstia section.

Plants and Their Culture.

FERNS.

Perhaps there is no class of plants more generally appreciated, and at the same time of more varied usefulness, than are Ferns. Most of the species are now in active growth, and those that have received proper treatment are pushing up and expanding their fronds, and it is essential to their welfare that they be supplied with an adequate amount of moisture in the atmosphere and at the roots, for the fronds exhale a considerable amount of water, and consequently soon suffer in an arid atmosphere, the young fronds of Blechnums and Lomarias being amongst the first to suffer from this cause. Shading is another matter that requires care, most of the kinds succeeding best in a subdued light, and almost all getting quickly injured when exposed to bright sunshine. Slugs are also very destructive, and must be diligently sought for; the best way to get rid of them is to resort to hand-picking late in the evening when they usually commence to feed. Adiantums, especially cuneatum, gracillimum, rubellum, and Williamsi, are very liable to attack. A. trapeziforme, A. cardiochlæna, A. Sanctæ, Catharinæ, and others of this class, make fine specimens when well grown, and deserve the room their large fronds require to fully expand. This latter type need to be rather heavily shaded to be grown to perfection.

Plants in baskets will need watering frequently, and should be turned weekly if placed in positions where their fronds have a tendency to draw to one side; some of the Davallias—bullata, decora, dissecta, Mariesii, and elegans, for instance—do well when situated well up to the glass and slightly shaded; but the D. polyantha, D. Mooreana, D. tenuifolia stricta section appear more comfortable under heavier shadings. Although Ferns as a rule delight in abundance of moisture, some species are readily injured by being wetted overhead, the Gymnogrammas especially, and should therefore be placed in situations where the fronds can be kept dry, otherwise the management is easy; and the best varieties may be used with good effect for table decoration. Gleichenia speluncæ also requires a dry position, but a cool temperature. The most healthy plant of this species I ever saw was growing in an Orchid-house where Odontoglossums and Masdevallias luxuriated. The following Nephrolepis are distinct and effective plants, particularly when grown in baskets:—N. Duffi, N. pectinata, N. davallioides furcans, N. rupestris bipinnatifida. All who value choice Ferns should secure a plant of this last-named. Another good and distinct Fern is Pteris Mayi; this is a beautiful crested form of P. cretica albo-lineata, and it is a desirable addition to the useful species to which it belongs. Robust species of Ferns upon rockeries growing in pockets need water often. In working amongst these great care should be observed not to break the fronds, as a good plant is quickly disfigured by carelessness in this way. The undernamed are some of the strong kinds suitable for rockeries, Asplenium divaricatum, A. viviparum, Lastrea Standishi, L. patens, Marattia fraxinea, Woodwardia radicans, Phlebodium aureum, Platycerium alcicorne, Lomaria chilensis, Didymochlæna truncatula, Cibotium princeps, Microlepia hirta cristata, Pteris tremula, and Nephrolepis ensifolia. *Thomas Coomber, Hendre Gardens.*

Rhododendron Victorianum×. — This variety, figured in the March number of the *Revue de l'Horticulture Belge*, is the result of a cross between R. Dalhousiæ and R. Nuttalli. It has the leaves of Nuttalli and the free-flowering tendency of Dalhousiæ. The flowers are about 3 inches in length, pure white, with a broad funnel-shaped tube, the base of which is suffused with golden yellow, and a reflexed five-lobed limb, the segments of which are rounded. It flowers in April,

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APPOINTMENTS FOR THE ENSUING WEEK.

SHOWS.

Wednesday,	May 4	Rochdale Auricula Society. Scottish Primula and Auricula Society, at Edinburgh.

MEETINGS.

Thursday, May 5—Linnæan Society, at 8 p.m.

SALES.

Tuesday,	May 3	Fine Established Orchids from the Downside Collection, on the Premises, by Protheroe & Morris (two days). Specimen Camellias, Stove and Greenhouse Plants, Live and Dead Stock, at Forest House, Leytonstone, by Protheroe & Morris.
Wednesday,	May 4	Cape Bulbs, Greenhouse and Herbaceous Plants, &c., at Protheroe & Morris' Rooms.
Thursday,	May 5	Imported and Established Orchids from L'Horticulture Internationale, Brussels, at Stevens' Rooms.
Friday,	May 6	Imported Orchids, at Protheroe & Morris' Rooms.

The Royal Horticultural Society.

The meeting of the Royal Horticultural Society on Tuesday last was of a very interesting character. The conservatory was filled with so miscellaneous an assortment, that surely all tastes must have been gratified. There were Apples, showing how well certain sorts under certain conditions will keep; there were Narcissi galore; there were Auriculas—quaint, mealy, green-edged; alpine Auriculas, with their velvetty sheen; Primulas in abundance, Orchids, Roses, Rhododendrons, alpine flowers.

From Kew came a very valuable and interesting lot, comprising many species of Primula, thus carrying on to a certain extent the work of the Primula Conference, and making us regret that the very successful Conference of last year was not repeated, as it might so easily have been done. The species sent were:—

Primula arctotis, Kern.	Primula marginata, Curtis
,, Auricula and varieties	,, mollis, Hook.
,, balbisii, Lehm.	,, obconica, Hance
,, biflora, Huter	,, Obristii, Stein
,, brevistyla, DC.	,, officinalis, Scop.
,, cortusoides, L.	,, Palinuri, Petag.
,, daonensis, Leyb.	,, Portæ, Huter
,, denticulata, Sm.	,, pubescens, Jacq., with several varieties
,, digenea, Kern.	,, rosea, Royle
,, Dinyana, Lag.	,, serratifolia, Gusm.
,, discolor, Leyb.	,, similis, Stein.
,, elatior, Jacq.	,, spectabilis, Tratt.
,, Göblii, Kern.	,, Venzoi, Huter
,, integrifolia, L.	,, verticillata, Forsk.
,, japonica, A. Gray	,, viscosa, Vill.
,, ,, alba	,, vulgaris, Huds.
,, magiassonica, Porta	

From Kew also came cut branches of the superb Rhododendron Nuttalli, the chaste R. Aucklandii (which, by the way, is now referred to R. Griffithianum), Medinilla magnifica, M. amabilis, Asystasia scandens, the singular and beautiful Thunbergia mysorensis, well-flowered sprays of Coffea arabica and others bearing berries, and the glowing Brownea coccinea. We cannot be too thankful to the Kew authorities for allowing the public to see some of their treasures in this way. Such exhibits do good in many ways—they form a delightful break in the monotonous common-places of flower-shows, they afford a most valuable lesson to gardeners and the public, and show what resources are available beyond those which are necessitated by the caprice of fashion, commercial convenience, or the necessity for "cut flowers" and "decorative objects." Nor is there any fear that visitors will be prevented from going to Kew; rather will the samples shown render them the more disposed to do so.

Glasnevin followed the good example of Kew by sending a number of flowers of hybrid Sarracenias—those most quaint flowers which, in spite of their beauty and originality, seem not to hit the popular taste. If anything will remedy this lack of taste and knowledge it is such exhibits as were sent from Glasnevin.

For details of the show, and records of what took place at the several committes, we must refer to another column.

The Queen and the Royal Horticultural Society.—It was stated on Tuesday that an answer had been received to the appeal for sympathy and assistance addressed to Her Majesty by the Council of the Royal Horticultural Society. The answer was, we believe, consolatory and sympathetic in tone.

The Royal Horticultural Society and the Imperial Institute.—We trust that the suggestion we made months ago, that the Royal Horticultural Society should form an integral part of the Imperial Institute, or, at any rate, be worked in close connection with it, may find support. The aims and objects of the Royal Horticultural Society are so intimately associated with the development of the economical resources of the Empire, and the furtherance of horticulture and agriculture in all parts of Her Majesty's dominion, that a connection of the kind suggested would be most appropriate.

Thomson's "Handy Book of the Flower Garden."—It is rare to meet with a thoroughly good book on practical gardening, at any rate the proportion such books bear to the trashy, ill-digested compilations which issue from the press is small. It is, therefore, an especial duty to call attention to a good book when it does make its appearance, and we comply with the obligation by announcing the publication of a fourth edition of the above work. The fact that it is a fourth edition absolves us from the necessity of saying any more in its favour. Apart from the cultural directions, which are excellent, the author, who has lived through the ages of mixed borders, ribbon borders, blazing beds, carpet-beds, dot beds, and all the many varieties of garden decoration, now extolled, and now derided, according to the fashion of the time, has shown his sense no less than his taste, in acknowledging the excellencies of of all when properly carried out with a due regard to appropriateness, and to the circumstances and requirements of the locality.

Clivia.—It is always satisfactory to reduce or do away with names, especially long ones. Mr. Bentham set an example when (*Gen. Plant.*, iii., p. 729) he reduced Imantophyllum of W. Hooker to Clivia. Gardeners accustomed to the pendulous tubular flowers of the old C. nobilis and the erect broadly funnel or bell-shaped flowers of Imantophyllum with spreading stamens, may be excused for still considering them a distinct genera. That they are not really so is, however, shown by the fact, which we state on the authority of Messrs. Veitch, that it sometimes happens that seedling Imantophyllums produce flowers of the same form as those of the old Clivia, while M. E. Pynaert sends us flowers of C. nobilis nearly intermediate between the two. It will be a comfort to get rid of Imantophyllum, 1st, because it is long; 2d, because it is wrong, for it surely ought to be Himantophyllum and never Imatophyllum, as sometimes written. We do not understand, however, on what principle we write Clivia, seeing that the name was given in honour of a lady of the Clive family. The more correct spelling would be Cliveia

Phylloxera.—A law of April 7, 1887, permits of the introduction of any rooted plants into Germany excepting Vines, under the condition that an inspection has to be made at certain frontier places of entrance.

Linnean Society of London.—On Thursday, May 5, at 8 p.m., papers will be read on—1. "Vaccinium intermedium, a New British Plant," by Mr. N. E. Brown. 2. "British Heteræcious Uredines," by Mr. C. B. Plowright.

The Culture of Vegetables and Flowers.—Messrs. Sutton & Sons have issued a third edition of their well-kown book (Hamilton, Adams & Co.). It has been carefully revised throughout, and includes a new article on the formation of lawns from seed. The book is written throughout in a pleasant, cheery style, and conveys much excellent practical advice.

Mortality of Gardeners.—If the mortality of all males from twenty-five to sixty-five years be taken as 1000, the relative mortality of males engaged in various occupations ranges as follows:—

Inn and hotel servants	2205
General labourers (London)	2090
Costermongers	1879
Miners (Cornwall)	1839
Agricultural labourers	701
Farmers	631
Gardeners	599
Clergymen	556

These details are taken from a paper read before the Royal Statistical Society by N. A. Humphreys, of the Registrar-General's office, and they show, among other things, how a temperate life and open-air pursuits contribute to health and longevity.

"Boletim da Sociedade Broteriana."—The last issued part of this publication, which is edited by Professor Henriques, of Coimbra, contains the commencement of a Flora of the island of St. Thomas, West Africa, with an introduction by the learned Professor of Coimbra. Mr. Baker contributes the account of the Ferns of the island.

The School of Horticulture at Vilvorde.—Some of those who visited the Health Exhibition a year or two since must have seen the models and plans of the School of Horticulture of Vilvorde, together with maps and other illustrations of the method of teaching adopted. It was unquestionably one of the most remarkable exhibits of the kind we have ever seen, and while it filled us with envy to see the provision made for the practical teaching of horticulture and pomology, we were not devoid of a feeling of shame that we could in this country show nothing of the kind. The memory of that well equipped and well organised establishment has abided with us, and we were glad to have it once more stimulated by the receipt of the *Bulletin de l'Association des Anciens Elèves de l'Ecole d'Horticulture de Vilvorde.* It appears that since the foundation of the school in 1850 more than 400 pupils have been trained in the establishment, of whom 250 received diplomas. When M. Fuchs, the eminent landscape gardener, celebrated the jubilee of his professorial capacity in the school, the old pupils not only decided to take part in that interesting ceremony, but they determined on founding an association of old pupils. The proceedings of the Association are before us, showing

VIEW IN LADY WILTON'S GARDEN, AT MONTE CARLO.

that the Association is in process of evolution. It contains various details relating to the school and, what must be of interest to old students, personal information relating to the doings of those former students now dispersed throughout the country, Among the more lengthy memoirs is one on market gardening near Paris, by M. E. Peeters, in which an excellent account of the procedures of Paris market gardeners is given. The chief features are—devotion of individuals to one or two specialties, relatively small areas under cultivation by each grower, high cultivation, abundance of water, manure, and liberal employment of frames and *cloches*. Interesting details are given relating to the cultivation of special plants, some of which we may be tempted to reproduce. An unsigned article on shanking in Grapes, probably from the pen of M. Laurent, the Professor of Botany in the School, contains some interesting reflections on this troublesome and very perplexing malady.

Sussex Association for the Improvement of Agriculture.—We ought to have called attention to the report for the year 1886 previously, for although the matters with which it deals are not strictly within our scope yet nothing bearing on plant-life and the means of turning it to practical advantage is irrelevant to horticulturists. We congratulate the members of the Association on the successful application of scientific principles to practical agriculture. The report deals with the treatment of old and of new pasture lands and some very striking results are tabulated showing the effects of judiciously selected and well applied artificial manures. The growth of particular grasses at different seasons was also a matter of observation and some very suggestive statements are made with refence to these plants all tending to show that the life-history of plants is fully as important a subject for study on the part of the cultivator as the chemical analysis of dead tissues, if not more so. For grass land the following manure is recommended:—Nitrate of potash, ¼ cwt.; nitrate of soda, 1 cwt.; superphosphate, 1½ cwt.; steamed bone-flour, ¼ cwt. per acre. At Aberdeen similar experiments have been carried out by Mr. Jameson under the auspices of the Agricultural Research Association. Much attention is given to the relative tendency to produce leaf or stalk, the latter being, of course, objectionable. Rye (Lolium), Cockfoot (Dactylis), and Fescue (Festuca), are noted as the best three grasses for feeding purposes, having the least tendency to run to stem and flower, and the earliest maturity. With reference to these matters Mr. Jameson does not, in the report before us, take cognisance of the great effect of various manures in inducing the formation of succulent foliage in grasses (such as the nitrogenous manures), or of dry fibre and flower (such as the alkaline and earthy salts).

Flowers for the Poor in East London.—We have received from Mr. Ernest A. Young, 15, Mornington Road, Bow, E.—and to whom all donations are to be sent—the following appeal:—The committee of the Flower and Picture Branch of the "Bow Emmanuel Workers' Society" having met with so liberal a response to their appeal of last year, are willing this year, if means be provided, to carry the furtherance of this scheme on a larger and wider basis. Our aim will be to assist in brightening and rendering more cheerful the dwellings of the poor, and to this end contributions of pictures, blossoms, roots, seeds, &c., for distribution are solicited. Those who cannot give flowers or other suitable decorations, can give money for window boxes, which will be gladly received. Donations will be gratefully received and acknowledged both by letter and in the annual report. Last year's report will be sent on application.

"Handbook of Vascular Cryptogamia."—In continuation of Hooker and Baker's *Synopsis Filicum*, a handbook of the other orders of vascular Cryptogams, by Mr. J. G. Baker, will be published shortly by Messrs. G. Bell & Son. It will include Equisetaceæ, Lycopodiaceæ, Selaginellaceæ, and Rhizocarpeæ, in which there are, excluding the fossi types, eleven genera, and about 700 species.

Mr. E. G. Baker, the Pereira Medallist of the Pharmaceutical Society in 1886, has been appointed, after a competitive examination, to the post of Junior Assistant in the Botanical Department of the British Museum, vacant by the promotion of Mr. W. Fawcett to the Directorship of Public Gardens and Plantations in Jamaica.

More Gardeners than Gardens.—A much greater quantity of correspondence on the above has reached us than we can possibly find room for. The one fact that we gather seems to be that the business of a gardener, like so many others in the older countries of Europe, is getting far too crowded for all those who engage in it to secure comfortable posts. This sad but unavoidable state of things is inevitable, owing to the large increase of population, and which is greater relatively in this country than in almost any other, the only true remedy for which is emigration, as is well pointed out in a letter we publish on another page. A few suggestions are made in the letters that have been received by us that are worthy the especial notice of head gardeners; one is, that higher premiums should be paid, so as to secure a better class of young men, who should apply themselves to gardening with the view to obtaining the higher prizes of the profession; and the other is, that there should be examinations in horticultural knowledge by some properly constituted authority, which could grant certificates of efficiency to the best men. This latter scheme is adopted in some foreign countries, and found to answer; and if it were adopted here also, much of the crowding in the higher grades of the business would be averted for a time.

Camellia Dante.—A white variety, with medium sized flowers, and entire, very regularly imbricate petals. It is not a new variety, but is highly to be recommended for its beauty, its free-flowering tendency and its precocity, M. Cuvelier, who has grown the plant for several years, speaks highly of it, but suggests that it, like other varieties, should not be kept at too low a temperature in winter time. The variety in question is figured in the April number of the *Revue de l'Horticulture Belge*.

Bailey's Green-flesh Melon.—*Apropos* of what our correspondent stated in his notice of Mr. Bailey's death in our last issue, we find from a report of a show of the Royal Horticultural Society, held on May 25, 1852, a Melon of this variety was sent by Mr. Bailey from the Shardeloes Gardens, which weighed 5 lb. 11 oz. It was stated to be a round netted kind of good flavour that he had raised twenty years before, *i.e.*, 1832. It is considered to be an excellent kind now when obtained true.

Late Keeping Apples.—A correspondent has asked for a list of late keeping Apples, and as this will doubtless be of interest to many of our readers, we reproduce a list of the notable fruits shown at Chester on March 5, this year:—Alfriston, Golden Spire, Winter Hawthornden, Blenheim Pippin, Calville Malingre, Old Hawthornden, Stirling Castle, King of the Pippins, Lord Clyde, Annie Elizabeth, Cellini, Lord Lennox, Lady Henniker, Small's Admirable, Dumelow's Seedling, New Northern Greening, Golden Winter Pearmain, Court of Wick, Gloria Mundi, Cox's Pomona, Scarlet Nonpareil, Lamb Abbey Pearmain, Winter Pearmain, Seek-no-further, Beauty of Kent, Crimson Queening, Blenheim Orange, Tower of Glamis, London Pippin, Royal Russet, Herefordshire Pearmain, Lord Derby, Tom Out, Hanwell Souring, Improved Seek-no-further, Ashmead's Kernel, Mère de Ménage, Northern Greening, Cox's Orange Pippin, New Hawthornden, Orange Russet, Tankard, King of Pippins, Mannington's Pearmain, Downton Nonpareil, Lane's Prince Albert, Yorkshire Greening, Ribston Pippin, Old Northern Greening, Ecklinville Seedling, Orange Pippin, Waltham Abbey Seedling, Costard Apple, Reinette du Canada, Peasgood's Nonsuch, Nelson's Glory, Flanders Pippin, Rymer, Margil, Sturmer Pippin, Bromley (cider), Adam's Pearmain, Cornish Aromatic, Royal Pearmain, Newtown Pippin, Melon Apple, Seedling, Winter Majeting, Hambledon Deux Ans, Jolly Beggar, Baron Ward, Fearn's Pippin, Kentish Fillbasket, Lemon Pippin, Wareham Russet, Hollandbury, Norfolk Beefing, Northern Spy, Herefordshire Beefing, Old Pomeroy, Claygate Pearmain, Flower of Kent, Morning Pippin, Golden Russet, Hormead Pearmain, Phillips' Pippin, Old Pearmain, Court Pendu Plat, Norfolk Stone Pippin, Cobham, Hubbard's Pearmain, Rhode Island Greening, Mannington Pearmain, The Queen, Winter Greening, To this we append a list of those shown on Tuesday last by Messrs. J. Cheal & Son, Crawley:—The Queen, Sturmer Pippin, Margil, Rymer, Hereford Beefing, Dutch Mignonne, Emperor Alexander, Crown, Forge of Sussex, Claygate Pearmain, Hornhead's Pearmain, Cox's Orange Pippin, Ribston Pippin, Brownlees Russet, Melon, Alfriston Galloway, Gipsy King, Lord Burleigh, Winter Peach, Lemon Pippin, Lane's Prince Albert, Golden Reinette, Duke of Devonshire, Beauty of Kent, Court of Wick, Hanwell Souring, Golden Harvey, Annie Elizabeth, Winter Greening, London Pippin, Hollandbury, Histon's Favourite, Colonel Vaughan, Scarlet Nonpareil, Golden Munday, Schoolmaster, Betty Geeson, Tower of Glamis, Blenheim Orange, Catshead, Hereford Pearmain, Gloria Mundi, Wellington, Reinette du Canada, Curltail, King of Pippins, French Crab, Cockle Pippin, Loddington, Striped Beefing, Manx Codlin, Lord Derby, Welford Park Nonsuch. Mr. Smee also showed an excellent lot on this occasion, comprising many of the same sorts.

International Horticultural Exhibition, Dresden, May 7—15.—The following are the official arrangements for each day that the Exhibition remains open to the public, so far as regards assemblies, festivities, visits, &c.:—

Friday, May 6, 10 A.M.—Assembling of the judges, executive committee, &c., in the Grossen Wirthschaft of the Royal Gardens; appointment of the managers, and induction of the judges; afterwards a discussion as to the prize jury, and award of the prizes.

Saturday, May 7.—In the morning the opening ceremony of the Exhibition by His Majesty the King, the judges, members of the Commission, invited guests and the general public; concert by the band of the Guards Regiment No. 100

Monday, May 9, 9 A.M.—Great meeting of the Society Deutsche Rosen Freunde, in the Grossen Wirthschaft; 4 P.M., banquet in the salon in the same, at which all the officials and honorary members as well as a select number of foreign gentlemen who have made application before 2 P.M. on Sunday, May 8, will be present—the price per *couvert* for these last being fixed at 20 marks, including wine, &c.

Tuesday, May 10, 9 A.M.—Continuation of deliberations of the Deutsche Rosen Freunde, meeting of horticultural engineers of the Lenné-Meyer's school, in the Grossen Wirthschaft—chief point of deliberation, the founding of a society of German garden engineers: reporter, Head Town Gardener, C. Hempel, Berlin. Evening: Festival performance in the Court Theatre, Dresdener Alstadt. Particulars in the Dresden daily papers.

Wednesday, May 11, 10 A.M.—Trip by steamer on the Elbe to Wehlen to view the Saxon Switzerland. Simple social meal partaken on the "Bastei." Return journey 8 P.M. Ladies and gentlemen in moderate numbers, and without particular invitation will be allowed to accompany the guests. Inquiry as to the trip must be made on Tuesday before 12 at noon.

Thursday, May 12, 9 A.M.—Meeting of Conifer raisers and amateurs in Grossen Wirthschaft to endeavour to simplify and fix the nomenclature of Conifers. Reporter, the Ducal Garden Inspector, H. Beissner, Brunswick.

Friday and Saturday, May 13 *and* 14.—Visits to

the more important gardens in Dresden and the vicinity, viewing the Royal Collections of Arts and Sciences in the usual visiting hours by the judges, members, and honorary members of Exhibition Commission, and in those cases where payment is usually made on production of cards that will be issued for the purpose. Notices of particular congresses will be made at the office in the Royal gardens, and all further notices will be found on the notice boards of the various *restaurations*. Extra trains will run on May 8, and during the period of the Exhibition, from Berlin, Görlitz, Lobau, Bautzen, Leipzig, Zwickau, Chemnitz, and Freiberg. The extra trains of the Saxon lines arrive in Dresden from 9 to 10 A.M., and leave on the return journey about 10 P.M.

Floral Vagaries in Bouquets.—The white floral parasol under which a Cincinnati bride and groom stood the other day was dotted with clusters of Violets, Roses, Tulips, and Lilies of the Valley. At the handle there was affixed a large bunch of Calla Lilies.—Henry E. Dixey was presented by Cincinnati Lodge of Elks with a magnificent floral easel made by Huntsman. A gilded vase of Madame Mermet and Maréchal Niel Roses was shown within a solid frame of Calla Lilies. The scrolls above and below were appropriately inscribed. —A young lady graduate of a dental college, in addition to the usual bouquets, received a floral tooth—one of Sunderbruch's designs. It was formed of white Cape flowers, and a lot of yellow Immortelles did duty as "gold filling." The tooth was a foot high, and created lots of merriment.—At a recent funeral an entire room was filled with flowers. The casket was covered with a design of Critchell's. It was in two parts; one was of white hyacinths, in the centre of which was a bed of Bride Roses flanked by diamonds of yellow Roses. A large Lily lay at each corner. The lower portion was composed of the same blossoms mixed. An open space was left for the name-plate, the entire design being bordered with Freesias. "*Ren*," *in the* "*American Florist*."

GARDENERS' ORPHAN FUND.

The following circular has been distributed among the gardeners of Great Britain, and replies have been received from a certain percentage of them. It must, however, be borne in mind that nothing can be done unless the project is more warmly and substantially taken up than it has been at present. At a meeting of the provisional committee, held at South Kensington on the 26th inst., it was decided to extend the time for the return of the circulars, and to endeavour to enlist the services of the local nurserymen in support of the scheme. So far, the returns have come in fair proportion from England, in smaller proportionate numbers from Ireland, while much the smallest number has come from Scotland, perhaps because the Scotch have their own Associations:—

Royal Horticultural Society, Chiswick Gardens,
London, April, 1887.

Sir,—A general desire having been expressed by gardeners in Great Britain and Ireland to join, as a body, in marking in an appropriate manner a great historical event—the fiftieth anniversary of the reign of the Sovereign of these realms, it has been found, after much discussion, that the form which best embodies their sentiments is the establishment of a fund for the succour of gardeners' children who have lost one or both parents, and have thus been left helpless.

The suggestions made on this subject by Mr. Penny, of Sandringham; Mr. Clayton, of Grimston Hall, Tadcaster; and Mr. Udale, Elford Hall, Tamworth, were discussed at a representative meeting of horticulturists, held at South Kensington on March 22, and it was unanimously agreed that in the opinion of those present it was desirable to establish a fund for the relief and assistance of the orphan children of gardeners, to be called "The Gardeners' Orphan Fund," and a provisional committee was appointed to prepare a scheme for carrying the same into effect, the gentlemen nominated to serve on such committee being:—Dr. Masters, *Gardeners' Chronicle*; Mr. Shirley Hibberd, *Gardeners' Magazine*; Mr. G. Deal, (Messrs. John Weeks & Co.); Mr. James Douglas, Great Gearies, Ilford; Mr. J. Fraser, Lea Bridge; Mr. C. Penny, Sandringham; Mr. C. H. Sharman (Messrs. James Carter & Co.); Mr. H. G. Veitch, Chelsea; Mr. J. Roberts, Gunnersbury Park; Mr. J. Woodbridge, Syon House; Mr. A. F. Barron, Chiswick; Mr. R. Dean, Ealing; Mr. J. Matthews, Weston-super-Mare; Mr. J. Wright, *Journal of Horticulture*; Mr. B. S. Williams, Upper Holloway; Mr. W. Richards, *Gardeners' Chronicle*; Mr. B. Wynne, *Gardening World*.

The committee, having well considered the manner in which the aims of the promoters of the Fund can be best carried into effect, have drafted the outlines of a scheme, the main features of which may be briefly stated as follows:—

1. *Title.*—The Gardeners' Orphan Fund.
2. *Its Objects.*—To make grants or allowances of money towards the maintenance of the orphans of gardeners.
   A. *By Allowances.*—To consist of any sum not exceeding 5*s.* per week to children between the ages of three and fourteen years, that may be placed with relatives, or other responsible persons acting as guardians, within the knowledge of the committee.
   B. *By Boarding-out.*—This to consist of free board, clothing and education for children between the ages of five and fourteen years.
   C. By the purchase of admission to some existing Institution.
3. *Qualifications of Candidates.*—All candidates must be (1) orphans of persons who have been gardeners, and (2) be nominated by two subscribers or donors to the Fund. No child to be considered eligible for the Fund until three years old, or receive support after attaining the age of fourteen years.
4. *Mode of Election to the Fund.*—By the votes of the subscribers and donors only.
5. *Voting power of Subscribers.*—Subscribers of 5*s.* per annum shall be entitled to one vote at each election; subscribers of 10*s.* to two votes; of £1, to four votes; of £2, to eight votes; and so on in like proportion. Life donations of £5 shall entitle the donors to one vote at every election; of £10, to two votes; of £20, to four votes; and so in proportion. Annual subscriptions shall be due on the 1st of January.

The scheme does not make provision for establishing any building or school, the committee considering it neither desirable nor practicable at present to entertain such a project; but should the Fund at any future time assume such proportions as to render it desirable to erect or purchase a building, special arrangements can be made for the purpose.

The committee propose at an early date to call a public meeting in London (of which due notice will be given), to discuss the scheme they have prepared, and if approved of, to appoint officers in London and the provinces for carrying the same into effect. In the meantime the committee believe the Orphan Fund will be well supported by the affluent, if gardeners themselves will show, by the amount of support they accord to the scheme, that they appreciate the benefits which an adequate fund, capably administered, will confer.

As it will depend entirely upon the response that is made to this appeal whether the committee will feel justified in attempting to carry out the project, we ask you to give the matter your earnest consideration, and to inform us whether you approve of the objects of the movement, and will support the Fund, by a donation or annual subscription, and by using your influence with your employers and friends so as to obtain their assistance.

We shall be greatly obliged if you will fill up the form printed on the following page, and return the same by the _____.

We are, dear sir, your obedient servants,
A. F. Barron,
J. Wright,
B. Wynne, } Hon. Secs

[*Form to be filled up and returned to Mr. Barron before May* 20.]

I approve of the objects for which it is suggested this Fund shall be established, and of the general scheme of the provisional committee, of which an outline is given on the preceding page. I shall be happy to support it with a donation of_____, and an annual subscription of_____.

Name_____

Address_____

GARDENERS' SELF-HELP SOCIETY.

Mr. R. Dean calls attention (p. 490) to the existence of a gardeners' society, but as far as I can see it is of no benefit to gardeners when out of employment. There are many societies in existence which on payment of a weekly subscription the members are entitled to sick pay, and they are all excellent in their way; but something more is required for gardeners in the way of a society than the United Horticultural Provident and Benefit Society, which is nothing more than a sick pay fund, the proverbial healthy occupation of its members putting the possibility of failure out of the question. It has not commended itself to gardeners during the twenty years of its existence, or its presence would have been more felt amongst the 30,000 to 40,000 of them that are said to be in the United Kingdom, and the cause of its comparative obscurity is not far to seek. In every town in Britain may be found lodges of several different friendly societies whose benefit meets exactly the same requirements met by the society Mr. Dean calls our attention to; and I may say, without fear of contradiction, that 75 per cent. of gardeners belong to one or other of these societies, consequently they do not feel the want of such a society as the United Provident. Mr. Dean in the latter part of his letter urges all gardeners and nurserymen to join the United Provident Society, but the promoters of the self-help scheme have seen fit to draw the line somewhere, and have decided to draw it at nurserymen, being conceited enough to think themselves capable of managing their own affairs. The publishing of the rules has been postponed for a few weeks longer in order to have the opinions of gardeners and foresters at large.

There will be two classes of members. Members subscribing 6*d.* weekly will be entitled to a benefit of 10*s.* weekly, when out of employment, for six months, and 7*s.* 6*d.* weekly for other six months; and members subscribing 9*d.* weekly will be entitled to 15*s.* weekly for six months, and 12*s.* 6*d.* for other six. Now, if a man cannot secure a situation in that time, when he has nothing else to do but look after one, and have the Society's secretary advertising him, it may be fairly assumed he does not want one.

It will be seen from what I have stated above that 5 per cent. of members can be allowed the benefits; and I cannot think the percentage of gardeners out of employment can be so high; however, if it happens to be higher, the committee could make arrangements to meet it.

No one will be eligible to receive benefit until he has been a member for twelve months, consequently every hundred members paying 6*d.* weekly will have £130 capital at the end of twelve months, and as it is proposed to have an entrance fee of 3*s.*, it will add £15 more, bringing it up to £145, the interest of which will go a long way in paying for working expenses and advertisements. It is proposed to have an annual subscription of 2*s.* 6*d.* towards the management fund, and another annual subscription of the same amount towards the Orphan Fund being organised by Mr. Penny and others; whether the latter subscription is to be voluntary, or be entered in the rules has not been decided yet. The Society will be registered under the Friendly Societies Act, and be under the control of a committee of professional gardeners and foresters, one-third of which will retire annually.

The opinions and suggestions of Mr. Barron, Mr. Penny, and other gentlemen interested in the Orphan Fund, are earnestly and cordially solicited, and will be carefully considered by the promoters, whose aim will be to frame the rules in such a manner as to meet the requirements of the class they are meant to protect. These gentlemen must see that the formation of this society would insure the success of the Orphan Fund scheme, as, without combination, they cannot get at the class that is most interested in keeping up the affair, but where there is a combination of people they can be easily got at through the secretaries and managing committees of the different districts. *Forester.*

MONTE CARLO.

To the plant-lover accustomed to the vegetation of his native land, or familiar only with such limited reproductions of tropical scenery as can be compassed in our conservatories, a visit to the Riviera comes, as it were, as an entrance to a new world. The rich luminous colour pervading all things—the rocks, the sky, the sea—the Palms, the Agaves, the Acacias, all combine to make a picture such as as one might have dreamt of but scarcely thought could be possible—at any rate in Europe. Lovely is the scene, it owes much of its beauty to the art of man. By man were the hills denuded of their forests and the country made barren; by man, however, has come reparation, as the African Palm, the Mexican Agave, the Australian Acacias and Eucalypts have been pressed into the service and created scenes of impressiveness and beauty which the native vegetation, even if it had been allowed to remain, could not have equalled. Of all the spots in the Riviera Monte Carlo is perhaps the most exquisite. We have already alluded to the public gardens here, whose only fault is that they are too gardenesque; and in the present issue (see supplementary sheet) we give an illustration of a view in the garden belonging to the Countess of Wilton, and which will suffice to show what resources the landscape gardener has in such situations, where the stately Date Palms, the massive Agaves (A. ferox), the bold Phormiums, and countless other plants of noble aspect are available.

THE APIARY.

GENERAL HINTS.

The winter, which has passed, has been very unfavourable to bees. We hear of many losses of stocks, even where a fair allowance of food was given them. Such a winter as we have just experienced proves that only strong stocks in comfortable hives and with plenty of food (their own preferred) can be relied on to pass safely through an English winter. The bees are, however, breeding fast now, natural pollen can be procured, fruit trees will shortly be in full bloom, and then sufficient food will be obtainable. The winds being still cold, it is not advisable to manipulate the bees more than is necessary. In the middle of warm sunny days the quilts can be gently lifted, and a very slight movement of the frames will be necessary to discover whether there is enough food. While they are breeding there is a great consumption of stores, so that it is very bad policy to be at all niggardly now. If you think the bees have ten or twelve pounds of honey, let well alone, close them up again warm, and all will be well; but if the honey be nearly gone, give them either syrup or honey at once. Some people keep a few frames of sealed honey, and give them to the bees as required. Although honey may be supposed to be the best food for them, I cannot advise this practice. In the first place, it is preferable to leave sufficient in the hive, in autumn, than to keep frames and give it to them now; and in the second place, if food be given in that way it must be put close to the brood, and that necessitates manipulation, which is best avoided at the present time. It is a *sine quâ non* that the brood must not be chilled, or disastrous consequences will ensue. If food be necessary perhaps nothing is better than the inverted bottle business, the syrup to be made as usual with about a pound of sugar to half a pint (or slightly more) of water. A pinch of salt and a few drops of vinegar will further improve matters. Bees will be found to require much water from this time; it will save the lives of many bees if water is placed near their hives, so that they can regularly get it without much trouble. There are various simple methods of doing this, and very often the simple methods answer as well, or better than complicated appliances. A few Tea leaves from the teapot put into a saucer, with a little water over them, will be easily discovered and eagerly used by the bees, or a little beer and sugar will do as well. We have always found our bees not inclined to be total abstainers, and a little "science and water" (*alias* beer) has ever stirred them up to duty and diligence. Give fresh Tea leaves every other day or so. There are very good and cheap bee fountains, made after the style of chicken fountains. *Walter Chitty, Pewsey.*

BUDS ON ROOTS.

The occurrence of buds on roots is common enough on some plants, but rare in the majority. Some Ferns are so prone to form buds, that it is a matter for surprise that, up to this time, so few cases have been noted in that natural order. Professor Oudemanns, of Amsterdam, kindly sent us some time since the specimen from which our illustration (fig. 111) is taken, and those who have grown Diplazium malabaricum tell us it is not uncommon to see such buds on the roots, which moreover would afford a ready means of propagation. Professor Oudemanns can perhaps tell us whether the bud is an external formation, or developed from the inner tissues. We suspect it will eventually be found that buds and sporangia of all kinds will ultimately be found to be variants from one common type.

Fig. 111.—Diplazium malabaricum: buds on roots.

ROSES.

THE ROSE-HOUSE.

If all has gone well, this house will now be in very attractive guise, most of the occupants being in full splendour. In order to preserve the blooms in good condition, it will be necessary to shade the house with some preparation. I use Williams' Eureka shading. While it obstructs the sun's rays it does not exclude light, for when the sun shines there is more light. The atmosphere must be kept moist by frequent sprinklings of the paths and beds, but syringing overhead should be discontinued, and artificial heat should be dispensed with. When air is admitted it should be at the top of the house, the side ventilators being kept constantly closed, as cold currents of air usually produce mildew. A copious watering at the root with tepid water should be given once a fortnight. Previous to watering, sprinkle the beds with Thomson's Vine manure, and blood manure alternately. Stop all gross shoots when they have grown to 12 or 15 inches long, excepting those which are intended to furnish the pillars and rafters. A very pretty effect may be produced by spur-budding Gloire de Dijons on pillars, with Tea Roses of various colours. Those flower the following year, and the flowers produced by this system on a vigorous Gloire de Dijon, are far finer in form and substance than those grown on the Brier or their own roots. The following kinds budded on the same shoot are very effective:—Madame Falcot, Isabella Sprunt, Marie van Houtte, Niphetos, Perle des Jardins, Safrano, Goubalt, Souvenir d'un Ami, and Sunset. I budded Maréchal Niels two years ago on some vigorous shoots of Gloire de Dijon, and those buds produced shoots the following year 10 and 12 feet long; these were left of their entire length, every bud producing a flower. I was told by a market grower of Roses that they would produce flowers of a bronze yellow, but the flowers have, however, come as pure in colour as any on their own roots, or on the Brier stock.

Sickly Roses.

If the plants in the Rose house are not doing satisfactorily, shade the house with additional shading; with a hand-fork remove as much of the soil from the roots as possible without uprooting the plants altogether; then dust the roots with Thomson's Vine manure, and have in readiness a compost of nice fresh loam and soil charred with wood in equal parts; to every cartload allow ½ cwt. of the above mentioned manure, with this compost make the borders up to the requisite level. Give a good watering with tepid water on concluding the work, keeping the house close, and syringing the plants two or three times a day. A little heat should be allowed on the pipes during night until the plants are fairly under weigh. *W. M. Baillie.*

Spring Work amongst the Roses.

We may fairly hope that the winter is now gone; it is possible we may have a sharp nip in the "Blackthorn winter," but surely after this long continuance of easterly winds we may look forward to sunnier skies and softer air; at any rate, it is on this hope that the amateur must now act. The mulching (unless he is a determined exhibitor, who does not care for the look of his garden) must be now removed, and he will have time to see what has been the effect of the weather on his plants. This is a very difficult thing to generalise about, because so much depends on soil and situation as to the effect of frost that it is impossible to generalise on the subject; a hundred feet difference in the elevation will make all the difference in the degree to which Roses will suffer by frost; and in the accounts which have reached me from many quarters I find that where the writers live in a low situation or near streams their Roses have suffered a good deal. Thus, one friend from the valley of the Mole says he has lost a good many, while on a higher elevation in the same valley the report is that there has been hardly any loss; thus, again, in the dry situation of Cambridge, although the soil is heavy, there has been comparatively little loss. A friend from Warminster writes that he has lost nearly all his standard Teas, but if people will grow standards, and especially standard Teas, I do not wonder at their suffering damage and loss. From Cheshire I learn that there have been but few losses, and as usual, East Anglia and the Midlands have suffered most. From Colchester, however, there are no complaints, while in my own garden where the thermometer has never gone below 18° all the winter, I have hardly any loss to record either amongst hybrid perpetuals or Teas. Of the hardiness of the latter race I am more than ever inclined to believe—especially of many of the new varieties—there are some which it is very difficult to keep, and so there are of hybrid perpetuals. Xavier Olibo, Horace Vernet, and Lady M. Fitzwilliam are quite as likely to succumb as many of the Teas; while such Teas as Marie van Houtte and Madame Lambard are as vigorous as any hybrid perpetuals.

In pruning it will be necessary to examine the wood carefully; it will be often found that the extremity of a branch has begun to send out shoots which appear to be all right, but on examining the lower ones it will be seen that the bark has a dis-

coloured and generally unhappy look; the knife must be applied below this, and the wood cut away to some sound spot; again, if in pruning the pith is at all discoloured, it is a sure sign that frost has been at work, and again the knife must be applied until all discoloured pith has been cut away.

Is it too late now, at the end of April, to plant Roses? As an ordinary rule it is so, especially if the plants have come from a distance, when I think the risk would be too great; but I think where Teas have been laid in, as is frequently done in the autumn, they may be safely transferred to their permanent quarters. I recollect some few years ago being wonderfully struck by some Tea Roses exhibited by Mr. George Prince, of Oxford, and on my saying to him what excellent blooms they were, he assured me that they were from plants which had every one been planted out in the month of May; besides, nowadays, if an amateur finds that there are blanks in his beds, he cannot be at a loss to fill them all; Roses of all kinds are now kept in pots for this purpose, and can be readily obtained. Let all such vacancies now be filled up, and the beds having been cleared of litter, and slightly forked over, they may now be left for a while. Where, however, persons are exhibitors, they will rather like the mulching to remain on the beds, notwithstanding its unsightliness, but to those who do not grow for exhibition its removal will be considered to add much to the neatness of the garden.

Early in May, when the shoots begin to lengthen, a careful watch must be held for the worm in the bud, which really comes in the leaf first, and then deftly fastens the leaf on the bud and then out of sight (thief that he is!) commences his depredations; the only way is to hand pick and squeeze him. *Wild Rose.*

CONTINENTAL NOVELTIES, 1887.

Lobelia Cavanillesi (Haage & Schmidt, fig. 113).—This is a reintroduction from Mexico. It is a very pretty species, that was first introduced about fifty years ago, and, being erroneously supposed to require stove treatment, was very soon lost to gardens. It is properly cultivated in the open ground or in pots, like the other species of Lobelia. It can very well be treated as an annual, and seedlings raised in February can be had in bloom in the beginning of the month of August, and good seed ripens in the autumn, which is seldom the case with such species as L. fulgens, L. cardinalis, and others. Plants that have been kept over the winter are much earlier and finer flowered than those that are obtained in flower within the year, but still the latter are not to be despised. The colours are quite unusual in the Lobelia, being bright scarlet, and the lip orange-yellow. By fertilisation with cardinalis, fulgens, and syphilitica, some quite new and striking novelties may be expected in a short time. The plant is well adapted for pots, for market purposes, and for groups or beds.

Senecio elegans pomponicus (Haage & Schmidt, fig. 112).—A pretty dwarf pompon-flowered variety, which excels the other dwarf Senecios by its stiff and regular habit and small, very full, short-petalled and finely imbricated blossoms, which resemble those of the prettiest and finest pompon Chrysanthemum. The variety is constant, and produces only finely-formed double flowers from seed. A bed of this novelty presents a beautiful effect, and for edgings, carpet-beds, or groups it is not to be excelled. The colour is a pure bright purple-crimson.

Foreign Award to an English Nurseryman.—We understand that Mr. B. S. Williams, of Victoria and Paradise Nurseries, Upper Holloway, London, N., has been awarded a large Gold Medal for a collection of Orchids, Himantophyllums, Amaryllis, and Cyclamen, exhibited by him at the horticultural show held in Amsterdam from the 2d to the 7th of this month.

HOME CORRESPONDENCE.

GARDENERS' ROYAL BENEVOLENT INSTITUTION AND JUBILEE FUND.—As a member of the above Institution, I gladly welcome the receipt of a collecting-card for the purpose of raising a fund for the special object of presenting to the pensioners of the Institution, and the unsuccessful candidates at last election, a sum of money to enable them to join with us in our rejoicings upon the occasion of the completion of the fiftieth year of the reign of Her Majesty and I trust we shall not be found wanting as horticulturists throughout the United Kingdom in responding heartily to the appeal of the committee, by placing at their disposal the amount required, and thus show our devoted loyalty to the Patroness of the Institution, by contributing as far as in our power lies to the happiness of those who, in their day, performed their parts to the best of their abilities in the promotion of horticultural pursuits. *W. Fox, Holker Gardens.*

THE SEASON AT HEATHERBANK, WEYBRIDGE HEATH.—The unusually dry weather—three weeks of April without rain—has affected spring flowering plants very differently at Oakwood. Of two North American plants one has been injured and the other benefited by it. The "Mayflower," Epigæa repens, though flowering freely, has smaller trusses and smaller flowers than usual; while Bloodroot, Sanguinaria canadensis, has been especially fine, though in full sun. In a rockwork bay about seventy beautiful flowers were out at once. All the Daffodil family in the damp situations have been very fine. We have a tree now in bloom which is, I think, not nearly enough grown, the Weeping Cherry, Cerasus pendula. I had never heard of it till Mr. Bunyard, of Maidstone, advised me to get it. Everybody admires it; the flowers are single and small, but numerous, and hang most gracefully, *George F. Wilson.*

PELARGONIUM HENRI JACOBY.—I was pleased to see the notice of Mr. Wadds on p. 554 concerning this useful and handsome kind of Pelargonium. In addition to the uses previously recommended I would say to those who have never used it for bedding that they should give it a trial. I have employed the variety, and think it cannot be surpassed by any other, the size of truss being good and its shade of colour—dark crimson—peculiar to itself, and it is much admired in the winter months as a cut flower. *William Smith, Springfield.*

PRIMULA LONGIBARDA.—Since I exhibited this at South Kensington on the 12th inst., the two trusses of pretty pinkish-lilac flowers, borne on symmetrical umbels, have developed into a finer form. It is one of the prettiest among the species of Primula, and I find it very hardy and easily grown. By some it is assumed to be P. Wulfeniana, but Mr. D. Dewar makes this last-named a hybrid of P. Weldeniana. That P. longibarba is a fine variety of P. calycina I think there can be no doubt, and it is one I would commend to the attention of all lovers of hardy Primulaceæ; the flowers are stout and well formed, and answer to the florist's requirements in these respects. I intend to cross it with P. ciliata purpurea, though whether I shall succeed in making it fertile is perhaps open to doubt. *R. D.*

WONDERFUL PLANTS.—Perhaps some of your readers would like to peruse a Latin description of the Distillatory Plant mentioned on p. 312, *Gardeners' Chronicle*, March 5 last. If so, they will find it at p. 721, vol. i., book xv., of Ray's *Historia Plantarum*, published A.D. 1686. The writer, Hermann Nicholas Grimm, was a native of Gothland and resident physician in Ceylon, whence he first mentioned the plant in a letter dated Feb. 9, 1674, as "Planta mirabilis destillatoria." I have always considered that he originated the specific name, to which Breynius the younger added the generic name, Nepenthes, adopted afterwards by Linnæus as Nepenthes destillatoria. Why is this persistently in recent years incorrectly spelled distillatoria? *N. E. D.* [Vowels are confessedly interchangeable. Ed.]

GARDENIAS ON A WALL.—I have grown these successfully, planted out in a compost of loam and clean coarse silver-sand added, the position being a warm border, at the foot of the back wall in the plant stove, the plants being trained to a wire trellis attached to the wall. From these plants we gathered during last Eastertide a large quantity of very fine blooms, almost as large as ordinary-sized Camellia blooms. I find this a most successful method of growing the Gardenia, but it is requisite that the roots should have the run of a border that has hot-water pipes beneath or by the side of it, as is here the case. The growth they make under these conditions is of a dark green colour, has much robustness, and but few insects attack the foliage. *E. Ward, Hewell Gardens, Bromsgrove.*

Fig. 112.—senecio elegans pomponicus: flowers purple.

A LATE SEASON.—The Poplar trees, the first to burst their buds here, have done so to-day, which is later than my record has ever noted—and it goes back eighteen years. *Campden Hill, Kensington, April 22.*

PRIMULA AURICULA.—I have a few quite distinct forms of this species—seminal varieties, of course—and they are very interesting. One in particular, sent me last year by the Rev. A. Rawson from Windermere, has deep yellow blossoms and sweetly fragrant flowers; a good grower, and remarkably free of bloom. Mr. W. B. Hartland, of Cork, brought a very fine variety of the "Dusty Miller" to South Kensington on the 12th inst., having large and finely formed sweetly fragrant blossoms. I think that if a cross were made between that and Mr. Rawson's variety a most useful progeny might result. At the Primula Conference last spring a suggestion was thrown out—I think by Mr. Lynch—that an effort should be made to see if it were possible to derive from P. Auricula the improved form of the florist's Auricula. The suggestion was made during the discussion on the origin of the Auricula. I do not know whether any one is taking the matter up, but whoever may attempt to solve the riddle should, I think, quite isolate P. Auricula from any chance of fertilisation

by any other form of Auricula, so as to start well. I have saved seed from the pretty golden self Auricula, Hetty Dean, and though I have raised plants I have not yet succeeded in getting a golden self from it, though I have fertilised it with its own pollen and kept it isolated as much as possible. I have raised a great many seedling alpine Auriculas, but never succeeded in getting a pure yellow one. Seed from the old double yellow produced no different results, but I am getting some very singular seedlings from semi-double Auriculas. *R. D.*

THE ORPHAN FUND.—I think we had a very satisfactory meeting on Tuesday last, and I rejoice at the progress the Orphan Fund has already made, and I have no doubt will continue to make. I beg to return my sincere thanks to the members of the Press, the Committee, and our Chairman for the able and willing help they have already given to this scheme. I hope no gardener in the kingdom will let the next three weeks pass without responding heartily to the call of charity. We unfortunately had a sad experience of the need that may arise for an Orphan Fund only a few days since, when our poor friend Carr met such an untimely end. Whether his widow and children will need help I know not, but if they do, out of our small beginnings I should suggest rendering them what we can. In stating this scheme I could not possibly have thought of myself, or that it ever would be useful to me; and I am sure none who have already given me their support will draw back on account of my shortcomings in placing it before the public in too narrow a groove. My call was for universal charity; and all must overlook any mistakes I may have made when it was first proposed. It certainly is not given to every man to write or start a scheme offhand; and I can only hope that those who have so ably assisted me may live to see it grow into a great Institution. *Chas. Penny.*

RHODODENDRON CAMPBELLÆ.—In reply to the inquiry of "W. S.," I may state that the above has for several years been growing outside uninjured, in West Cumberland, at an elevation of about 100 feet; and also for the last two years, amongst granite rocks, Furze, and Fern, at an elevation of about 400 feet, but I have not yet seen it flower. *Cumbrian.*

MORE GARDENERS THAN GARDENS.—"F. W." (p. 554) complains about there being more gardeners than gardens. A few days ago a letter appeared in a daily contemporary bewailing the fact that the country was overstocked with doctors, in consequence of so many young men entering the medical profession, and I imagine that every profession at the present time is overstocked with struggling men, many of whom will never make any position for themselves. There are waifs and strays in every calling; but apart from this, gardeners have suffered more than any other class from the late depression in agriculture, as in all social systems when depression comes the luxuries are first cast off or curtailed. Some gardeners who have found their progress checked in this country have gone to the Colonies—I trust to their own advantage as well as to the benefit of those who are left behind. Some cases of hardships have occurred to my knowledge, where men with young families have been suddenly bereft of employment; but, on the whole, as a body, gardeners are better off than they were twenty years ago. There are of course vicissitudes and turning points in every life, and success or failure in a great measure depends upon which turning we take at some particular juncture of our existence. But a gardener not afraid of work if he fails to get a place in the front rank may yet gain enough of this world's goods to get through life comfortably (for man's real needs are small), and life in a country village face to face with Nature, away from the carking cares and nerve-trials prominent men are exposed to is pleasant enough, on the whole. In many gardens the system of taking premiums from young men is dying out, as many head gardeners prefer the freedom to get rid of an unsuitable hand to the few pounds the premium system brings in. I don't think it makes much difference to the young men themselves whether they pay a premium or not, as I have generally found that greater advantages are offered in wages and otherwise where premiums are the rule than where they form the exception. If a young man consents to pay a premium he does so with his eyes open, and he generally receives an equivalent for it. At the same time I think the premium system will gradually die out, for a true man will not sell his independence for a few pounds a year. During the last twenty years I have met with dozens of good gardeners who have failed to make the mark they in their young time aspired to (perhaps through some failing in themselves), but the most of them are bearing in a philosophical spirit the ills they could not cure. And this I take it is the true lesson we all have to learn. It is said the Roman Emperor Diocletian resigned his power, retired to his birthplace, and spent his time in cultivating his garden, assuring his visitors he only then began to enjoy the world. For the ambitious among us there is scope enough in the Colonies, and the young and strong who can work and wait will surely win their way. *H.*

SOCIETIES.

ROYAL HORTICULTURAL.

Tuesday, *April* 26.—A very interesting display was on this occasion made in the conservatory by the nurserymen, with groups of Rhododendrons from Messrs. Lane & Son, the Roses of Messrs. Paul & Son, Rumsey, and Mr. Walker; and the tables that were fairly filled with Narcissi, hardy plants, a choice collection of unfamiliar plants from the Royal Gardens, Kew, Orchids, Amaryllis, and Erica Wilmoreana. The special feature, however, was the show of the Southern Section of the Auricula Society, whose exhibits occupied the central space.

Fig. 113.—Lobelia cavanillesi: flowers scarlet. (see p. 584.)

Scientific Committee.

Present: Dr. Maxwell T. Masters, F.R.S., in the chair; Mr. McLachlan, Mr. Michael, Mr. Ridley, Mr. O'Brien, Mr. Murray, Mr. Smith, Mr. Wilson, Mr. Maw, Dr. Lowe, Mr. Smee, Professor Church, and Rev. G. Henslow.

Clerodendron floribundum.—Mr. McLachlan drew attention to the curious fact that flowers of this Clerodendron were sometimes inhabited by a species of plant bug allied to the Tingis pyri, which is so injurious in France, where it is called "*le tigre.*" He found remains of pupæ at the base of the corolla, and occasionally a perfect insect. The effect of the irritation set up by the insect was, acccording to Dr. Masters, to cause hypertrophy to take place, so that the tube becomes much thickened, likewise the filaments and style; while the flower assumes a regular or "pelorian" form instead of being "zygomorphic" as usual. The specimens were received from Baron von Müller, from Melbourne.

Primula Stuarti var. purpurea.—Specimens, with the following communication, were received from Rev. C. Wolley Dod. (Hooker's *Flora of British India*, vol. iii., 290:—"I send some poor specimens of flowers of this from a plant growing in the open border, because flowers of it were not shown last year at the Primula Conference. Last year one plant produced scapes of fifty flowers each in April, and again in September, and then rotted off. The variety purpurea flowers here at least a month earlier than the type, which flowers early in June, often attempting to flower again in autumn. I can do nothing with either the type or the variety in pots, owing to the large development of root they require to make. Both are difficult to keep through the summer, the fleshy rootstock becoming rotten. Neither has ever ripened seed here, and I find the seeds of var. purpurea very difficult to get."

Narcissus Pseudo-Narcissus × *triandrus* (?).—Mr. Dod also sent a two-flowered scape and the following observations:—"The bulb of this flower was sent to me, in 1885, from Oporto, by Mr. Tait. He supposed it to be a hybrid, having been found isolated amongst the two species named above. It produced a two-flowered scape last April, and again this April. The resemblance of the flower to N. Johnstoni is remarkable. On comparing it with several N. Johnstoni the habit and general appearance are identical, and most of the details, but the flower I send has an enlargement of the corona just below the juncture of the perianth. I cannot observe this in N. Johnstoni, or in any true N. Pseudo-Narcissus. Whether N. Johnstoni belongs to N. Pseudo-Narcissus I think is not yet decided."

Deutzia gracilis, Arrested Growth of Petals.—Dr. Lowe exhibited specimens showing this peculiar feature in this plant. It was the opinion of Dr. Masters and the Secretary, who had examined these minute green flowers, that it was an arrested state, due to insufficient temperature, but why some branches only were affected and not others, it was difficult to explain, unless, as Mr. O'Brien suggested, root action was inefficient in one part and not in another of the same plant.

Primrose with Foliaceous Sepals.—Dr. Lowe exhibited specimens showing all degrees between the presence and total absence of the corolla, accompanied by enlarged leaf-like sepals.

Begonia sp.—Mr. Smee exhibited a large leaf of a Begonia, about 14 inches across, with white flowers. Mr. Ridley undertook to name and report upon it.

Myriocarpus stipitata.—Mr. Ridley reported on this plant, exhibited at the last meeting, which had come up with foreign Orchids from Panama. It belongs to Urticaceæ.

Stachys affinis.—Mr. Maw exhibited a rhizome of this plant, which is now being extensively grown in France for pickling; also a scape of Narcissus papyraceus from Tangier, no less than 3 feet 4 inches in length; and a specimen of a small species of Fritillaria common at Smyrna. It was sent to Kew for identification, having been previously confused with F. armena.

Corbularia Graelsi, from the Sierra Guadarrama, and a white var. of Chionodoxa Luciliæ from Nymph Dagh, Smyrna, were also shown by Mr. Maw, as well as a copy of an illustrated Chinese work on botany.

Clivia nobilis.—Dr. Masters drew attention to the fact that this genus must be considered identical with Imantophyllum, as seeds of each gave rise to the form of the flowers characteristic of the other. Thus Clivia has drooping flowers with a narrow funnel-shaped perianth; while Imantophyllum had erect and broadly funnel-shaped. Mr. O'Brien thought that the change was not characteristic of every species—*e.g.*, I. miniatum was true to its own form.

Cattleya intermedia var. monstrosa.—Dr. Masters exhibited proliferous states of this species, in which, instead of the column, there appeared two branches with distorted flowers. It was received from M. Linden, who had previously noticed how certain monstrosities had become fixed, as in the present instance, which had now become proliferous for four years.

N. incomparabilis, hyb.—Mr. E. Godolphin Osborne sent specimens which he regarded as hybrids. They were exhibited at the Narcissus Committee, but seemed to be generally regarded as varieties of incomparabilis.

Tulipa lanosa, Regel (?).—Mr. Elwes sent a scarlet Tulip from Turkestan. It was sent to Mr. Baker for identification.

Sarracenia, hyb.—A fine series of flowers was received from Mr. Moore, from the Botanic Gardens, Glasnevin, consisting of the following sorts:—S. flava, S. flava × rubra, S. Moorei, or S. purpurea × Drummondi, S. Stevensi, S. Williamsi or S. purpurea × flava, S. Patersoni, S. Atkinsoni, S. Mitchelliana or S. Drummondi × purpurea, S. Chelsoni × Drummondi. A vote of thanks was given to Mr. Moore for the collection.

Floral Committee.

Present: G. F. Wilson, F.R.S., in the chair; and M. T. Masters, R. Dean, H. Bennett, W. Wilks, H. Herbst, G. Duffield, W. H. Lowe, A. Bradshaw, W. Holmes, B. Wynne, J. Dominy, H.

M. Pollett, A. F. Lendy, J. O'Brien, E. Hill, Chas. Noble, H. Turner, W. Goldring, J. Douglas, J. Hudson, and Shirley Hibberd.

Orchids.

These flowers did not form a very important contingent of the floral display, being small in numbers, and of no particular merit. Three large plants of Cattleya Mossiæ were exhibited by C. Ingram, Esq. (gr., Mr. Bond), Elstead House, Godalming; the flowers were of a large size, and numerous for plants of medium size. Another plant was Odontoglossum Alexandræ, hybrid, with a bright yellow ground, covered with widely distant patches of brown.

A new species of Odontoglossum—a small plant with one spike—was exhibited by the New Plant and Bulb Co.; the flowers are white with pale brown blotches, the lip being likewise marked similarly; it is a pleasing flower. Other plants from the same nursery were O. radiatum, a fine spike of bloom; O. vexillarium leucoglossum, in which the lip is large, white, and very conspicuous, the other parts being coloured as in the type; Cattleya Lawrenceana oculata, with a lip of an intense rosy-purple hue.

Messrs. Shuttleworth, Carder & Co., 191, Park Road, Clapham, exhibited a basket of Cymbidium tigrinum, a curiously formed flower, with narrow acutely pointed petals, and sepals of brownish-green colour, and lip white sparsely spotted with brown.

Several varieties of Trichopilia as cut flowers were shown by R. J. Measures, Esq., Cambridge Lodge, Camberwell; these consisted of T. lepida rosea, suavis, and suavis alba. Other items from the same garden were Cypripedium (Selenipedium) Wallisi, the long tails and lemon-yellow dorsal sepal making a most remarkable looking flower: the flower-stalk bore two fully expanded flowers; Oncidium macranthum lamelligerum, a fine large specimen, with a very lengthy flower-spike, to which a Cultural Commendation was properly awarded; Odontoglossum Cambridgeanum, a small plant with a single spike of flowers, which possess dark brown petals and sepals, yellow-tipped and marbled; the creamy-white lip is edged with hair-like filaments, and has several brown spots at its base.

The pure white Phalænopsis Sanderiana alba was shown by A. H. Smee, Esq., The Grange, Wallington (gr., Mr. Cummins); the spike consisted of seven fully open flowers and several buds.

Miscellaneous Plants

Several excellent examples of hybrid Amaryllis were exhibited by Messrs. J. Veitch & Son, Chelsea, one of which was considered worthy of being certificated, viz., Ambient, a large flower, of a vivid crimson with broad white bands rising from the base of the segments, and reaching to half their length; Epiphyllum Gartneri, a variety with orange-red flowers; Primula Kingii, a Sikkim species with narrow, acutely-serrated leaves, flowers sulphur-yellow and campanulate, the petiole 1½ foot high. Cut blooms of Magnolia stellata, which much resembles M. Halli, came from the Coombe Wood nurseries of the firm, the white colour of the flowers and absence of foliage would make this fine hardy shrub of great value for the cold conservatory or corridor wall, where a slight overhead protection is afforded.

Trillium sessile var. californica, with white, nearly tubular flowers, and foliage spotted with dark green, was shown by the New Plant and Bulb Company.

A nice white-flowered Mignonette, White Perfection, was shown by Mr. Bannister, gr., to H. H. V. Ames, Esq., Cote House, Westbury-on-Trym; it is a tall variety with long flower-spikes.

Mr. J. Chambers, Westlake Nursery, Spring Grove, again showed his fine double Violet Victoria, and some excellent blooms of Rose Niphetos.

A few blooms of a crimson-coloured Amaryllis came from Mr. C. Menzies, gr. to Mrs. Rodgett, Sandfords, Wareham.

Mr. J. Douglas, Great Gearies, Ilford, showed Primula obtusifolia var. Gammieana, from Sikkim, altitude 15,000 feet, in sunny spots. The plant has narrow serrated foliage, with flattish, horizontally poised, shaded purple flowers borne on a short stout stalk. Another Sikkim species, from 11,000 feet altitude, shown by the same, was P. reticulata, with pendant light yellow flowers. It is found on exposed rocks.

G. F. Wilson, Esq., Wisley, Weybridge, exhibited Primula glabra, a corymb of minute pale lilac flowers; and Primrose Mrs. Wilson, a bluish-purple variety, almost the exact counterpart of Alice Wilson.

A white Viola, Miss Barron, was shown by Mr. R. Dean, Ranelagh Road, Ealing. It is a good sort for a bed or line, being pure in colour.

A gold-edged double Polyanthus, Queen Victoria, was brought by Mr. Owen, nurseryman, Hartford, Cheshire.

A plant or two of Cyclamen persicum showing a frill or outgrowth from the surface of the petal, was shown by Mr. R. Clarke, florist, Twickenham. The foliage exhibits also redundancy of parts in the shape of fin-like excrescences on the upper side. The flower is pure white, and has been figured in our columns.

Mr. Bennett's Rose, Her Majesty, was shown by Mr. C. Turner, of Slough, in not so gross a form as it is sometimes observed. This may have been due to the youthfulness of the plant. In older plants the habit might be corrected by leaving more blooms.

Messrs. Paul & Son, the Old Nurseries, Cheshunt, exhibited Amaryllis Mrs. Gaskell, a good crimson; Mrs. Henry Wood, a white with crimson stripes; and Captain Marryatt.

The hardy spring flowers of Mr. Thomas Ware, Hale Farm, Tottenham, contained a number of interesting subjects for the rockery and the border. There were numerous species and hybrid Primulas, several species of Megaseas, Mertensia virginica, a light blue campanulate flower; and many others, to name which would occupy too much of our space. A Silver Banksian Medal was awarded.

Another group of hardy flowers were from Messrs. Paul & Son, The Old Nurseries, Cheshunt, consisting mainly of Saxifragas from the alpine snow-line; Draba Brunonifolia, Pulmonaria dahurica, a quite small dark blue flower and narrow foliage; the white Claytonia virginica, Viola picturata, a pretty form of white and blue, well adapted for beds or lines; Cyclamen repandum, the double-flowered Tree Violet, Alyssum podolicum, and others. A Silver Banksian Medal was awarded.

Mr. Anthony Waterer, Knap Hill, Woking, contributed a showy collection of Primroses of varied colour, and well adapted for pots or borders. A Bronze Banksian Medal was awarded.

Roses.

Roses made a very grand show, forming one of the features, and in this section Messrs. Paul & Son, Cheshunt, had by far the best group. The plants were both standards and bush, chiefly the former, and were well and heavily flowered and elegantly trained, while the individual flowers left nothing to be desired. Among those shown the following were specially remarkable:—Moiret, Her Majesty (very large), Magna Charta, Jean Ducher, Prince Camille de Rohan, Baron de Bonstetton, Niphetos, Souvenir d'un Ami, and Maréchal Niel. A very effective edging was formed with Spiræa japonica. This group was justly awarded a Silver-gilt Banksian Medal.

A good group of Roses in pots, tastefully arranged, was also shown by Mr. W. Rumsey, Joyning's Nursery, Waltham Cross. Besides the plants in pots there were boxes of cut blooms, in which were some excellent examples of Madame Lambard, Paul Néron, Lady Mary Fitzwilliam, &c. The pot plants were much the same varieties as in Messrs. Paul & Son's group. (Silver Banksian Medal.)

Boxes of cut blooms of Roses came from Mr. J. Walter, Thame, Oxon; the specimens of Maréchal Niel and of Niphetos were exceptionally fine, and the other varieties also good. (Silver Banksian.)

An extensive group of bush Roses was shown by Messrs. H. Lane & Son, Berkhamsted; the plants were covered with flowers and had the appearance of being in splendid health. (Silver Banksian Medal.) A like award was gained by this firm for a large and attractive group of Rhododendrons; masses of bloom were these plants and of most brilliant colours, ranging from pure white to the richest crimson, and also mauve. The effect was most pleasing, enlivening the whole show.

A large group of specimens of Erica Wilmoreana, consisting of well-grown large and free-flowering plants, was staged by Messrs. J. Standish & Co., Ascot, Berks.

Narcissi

were, as usual, extensively shown, the most comprehensive collection being that from Messrs. Barr & Son, which contained a great range of varieties, among which were Narcissus Johnstoni, to which a Certificate was granted (for an account of this see *Gardeners' Chronicle*, February 26, 1887, p. 288, where an illustration was given), and Tottenham Yellow, N. spurius Henry Irving, N. incomparabilis Bertii, N. i. Stella, N. Leedsi, Duchesse de Brabant, W. Golding, Barri, Sensation, Colleen Bawn, Capax, and the N. moschatus of Howarth. (Silver Banksian Medal.)

A very similar group was shown by Messrs. Collins Bros. & Gabriel, Waterloo Road, London, S.E. The whole lot were elegantly set up and nicely relieved by Ferns, &c. Barri conspicua, Albicans, Henry Irving, Ard-Righ, Golden Spur (Corbularia), Citrina, Leedsi amabilis, and Poeticus ornatus were especially noticeable for their beauty. (Silver Banksian Medal.)

Mr. T. S. Ware also had a like group, and obtained a similar medal.

A group of Daffodils was exhibited by Mr. J. Walker, Whitton, Middlesex; and bunches of Sir Watkin came from Mess. J. Dickson & Sons, of Chester.

First-class Certificates.

To Mr. R. Clarke, for Cyclamen Princess of Wales.

To Messrs. J. Veitch & Sons, for Amaryllis Ambient.

To R. J. Measures, Esq., for Odontoglossum Cambridgeanum.

To F. G. Tautz, Esq., for Miltonia vexillariam var. leucoglossa.

To the New Plant and Bulb Co., for Trillium sessile var. californica.

To G. F. Wilson, Esq., for Primrose Mrs. Wilson.

To Messrs. Barr & Son, for Narcissus Johnstoni.

To Mr. J. Douglas, for Primula obtusifolia var. Gammieana.

Fruit Committee.

Present: T. F. Rivers, Esq., in the chair; and Messrs. F. Rutland, John Lee, J. Fitt, G. Norman, G. Goldsmith, T. B. Haywood, James Smith, J. Woodbridge, Harrison Weir, R. D. Blackmore, T. J. Saltmarsh, G. Bunyard, W. Denning, and H. J. Veitch.

The committee had light work before it, there being simply collections of Apples to be adjudicated upon. Messrs. J. Cheal & Son, of Crawley, Sussex, contributed the leading collection, the individual fruits being, without exception, in excellent condition, of large size and good colour. A Silver Banksian Medal was justly awarded to this comprehensive lot; and it will doubtless be of interest to our readers to have a list of the varieties shown, as demonstrating the possibility of their keeping powers. (See p. 581.)

A similar award was received by Mr. G. W. Cummins, gr. to A. H. Smee, Esq., The Grange, Wallington, for a collection of Apples and Pears, including among the former several shown by Messrs. Cheal. The fruits were very creditable here also, but smaller in size. Mr. Divers, Wierton House Gardens, Maidstone, and Mr. J. C. Mundell, Moor Park, Rickmansworth, also contributed collections of Apples showing respectively twelve and thirty dishes. A nice looking seedling Apple was sent by Mr. A. Barker, Hindlip Gardens, Worcester.

National Auricula and Primula (Southern Section).

The annual exhibition of this Society took place in the Conservatory of the Royal Horticultural Society on Tuesday last, and though somewhat shorn of its usual proportions, proved better than could have been expected regard being had to the untoward character of the season; for scarcely within the memory of growers have the flowers opened so tardily and unkindly. Roughness was a general characteristic; refinement was, with but few exceptions, markedly absent. But the growers did the best they could in the face of great difficulties. The President of the Society, Mr. J. T. D. Llewellyn, was unfortunately unable to exhibit, but the Northern contingent was well represented by the Rev. F. D. Horner, Mr. Samuel Barlow, J.P., Messrs. W. Bolton, F. Pohlman, and W. H. White, of Newcastle-on-Tyne.

Show Auriculas.—In Class A, six collections of twelve dissimilar Auriculas competed. The Rev. F. D. Horner, Lowfield, Kirkby Lonsdale, was an easy 1st, having five varieties, mainly of his own raising, and they consisted of—Green-edges, Ivy Green, a fine flower, bold in pip, good in the tube, a little weak in the paste; Merlin, a bright variety, with a dense black body colour, and well-proportioned flower; the Rev. F. D. Horner (Simonite), singularly bright on the edge. Grey edges: George Lightbody, with seven fine pips; Fairy Ring, bold and striking, though a little pointed in the petals: Candidate, very promising. White edges: Magpie, very fine, strong paste, and black body colour, and John Simonite. Selfs: Heroine, very

fine; Dulcie, a rich-looking self, and Rubra, a deep-red flower of refined character. and Mr. Douglas. 2d, Mr. J. Douglas, gr. to F. Whitbourn, Esq., Great Gearies, Ilford, with some finely grown plants having large bold trusses of bloom, but rough generally. His varieties were Abbé Lizst, a fine and striking green edge, of the solid character of George Lightbody, Prince of Greens. Green edges: George Lightbody, Mabel, Silvia, very solid and fine in paste and tube; Mr. Moore (Douglas), large in pip, the segments somewhat pointed. White edges: Marmion (Douglas), Dr. Kidd (Douglas), and John Simonite. Selfs: Sir W. Hewett, Negro (Mellor), and a seedling shaded purple self. In the class for six Auriculas there were seven competitors. The Rev. F. D. Horner was again 1st with—Green edges: Rev. F. D. Horner. Grey edges: George Lightbody and Grayling (Horner). White edge: Miranda (Horner). Selfs: Heroine and Kathleen, a violet-plum self. 2d. Mr. W.H. White, Killingworth, Newcastle-on-Tyne, with—Green edges: Rev. F. D. Horner, and Prince of Greens, very fine indeed; grey edges: Luna (Horner), and George Lightbody; white edge Beauty, and self Mr. Douglas. Six collections of four dissimilar Auriculas competed, and here Mr. A. Potts, Hoole Hall, Chester, was 1st with—Green, Rev. F. D. Horner; grey, George Lightbody; and white edge, Mrs. Dodwell (Woodhead). 2d, Mr. S. Barlow, J.P., Stakehill House, Manchester, with—Green, Miller's Green; grey, George Lightbody; white; Acme; and self, Carbuncle (Horner). The best two dissimilar Auriculas came from Mr. A. Potts, who had the Rev. F. D. Horner and John Simonite; 2d, Mr. S. Barlow, with George Lightbody and Black Knight, a promising dark self.

In the classes for single flowers there were fewer plants staged than is usual. In that for green edges, Mr. F. Pohlman was 1st, with Prince of Greens; the Rev. F. D. Horner 2d, with his namesake; 3d, Mr. J. Douglas, with Lancashire Hero in its green form. Grey edges: 1st, Mr. J. Douglas, Florence (Douglas), good paste, black body colour, and finely-shaped pip; 2d, Mr. A. Potts, with Richard Headly. White edges: 1st and 2d, Mr. A. Potts, with Acme. Selfs: 1st, Mr. J. Douglas, with Sir W. Hewett; 2d, Rev. F. D. Horner, with Heroine.

Alpine Auriculas.—In the class for twelve varieties there were but two competitors, Mr. C. Turner being 1st, with the following:—Golden centred varieties: Mr. Llewellyn, Eclipse, Wrestler, Sceptre, Mungo, Mr. George, Garnet, Faust, Sir H. Darvill, and Sunrise. White centres: Symmetry, Lady H. Grosvenor, and Edith. 2d, Mr. J. Douglas, with Unique, Love Bird, King of the Belgians, Princess of Waldeck, Rosamond Fellowes, Elwine, Lady H. de Walden, and Queen Victoria. Mr. Turner also had the best six, setting up Mungo, Mr. George. Unique, Sunrise, Symmetry, Acquisition, and Olympia. 2d, Mr. J. Douglas, with Diadem, Unique, Love Bird, Princess of Waldeck, Ada, and Lady H. de Walden. Mr. S. Barlow had the best four alpines, staging Velvet Pile, Polly, and Charley, his own seedlings, and Mrs. Meiklejohn. 2d, Mr. F. Pohlman, with four pretty laced varieties Then followed a class for the best gold centred variety, Mr. C. Turner being 1st with Sunrise, and 2d with Lord H. Grosvenor. The best white-centred flower was Lady H. Crewe, Mr. J. Douglas being 2d with Ada, and 3d, with Queen Victoria; Mr. Turner being 4th, with Florence.

Collections of Auriculas.—Mr. J. Douglas had the best collection of fifty Auriculas. His leading varieties were—Green edges: Campbell's Green Edge, Abbé Lizst, Verdure, and Prince of Greens; grey edges: Marmion, Frank Simonite, John Waterson, Mabel, Richard Headly, Jumbo, Dr. Horner, Ajax, and Alex. Meiklejohn; white edged: Acme, Smiling Beauty, Beauty, Sophia Dumaresque, Conservative, and Dr. Kidd; selfs: Teresia, Pizarro, Dignity, Vulcan, and Sir Lancelot. 2d, Mr. C. Turner, with—Green edges: Mrs. Butcher, Mrs. Knighton, Duke of Wellington, and General Havelock; grey edged: Colonel Champneys, C. E. Brown, Dr. Horner, Robert Trail, Competitor, and Frank Simonite; white edged: Beauty, Acme, and John Waterson; selfs: Vulcan, Mrs. Smith, Eclipse, Bacchus, C. J. Perry, Meteor Flag, Lord of Lorne, and Clipper.

Turner Memorial Prizes.—These were offered for six show Auriculas, distinct, to contain at least one representative of each of the four classes, to be competed for by amateurs. Here Mr. W. Bolton was 1st—Green edges: Prince of Greens and Rev. F. D. Horner; grey edge: Lancashire Hero; white edged: Reliance (Miller), and John Simonite; self: Mr. Douglas. 2d, Mr. T. E. Henwood, with the Rev. F. D. Horner, Lancashire Hero, George Lightbody, Conservative, Black Bess, and Pizarro.

Fancy Auriculas.—Two collections of twelve were shown, Mr. J. Douglas being 1st, and Mr. S. Barlow 2d. They may be said to include eccentricities that, while far too good to be thrown away, yet do not find a place in any of the other divisions. As a rule they have rich golden tubes, and golden ground colours, with grey-green edges.

Gold-laced Polyanthus.—These were shown in good form by Mr. S. Barlow, who was 1st with six varieties, characterised by much refinement, the varieties being George IV., Exile, Cheshire Favourite, Prince Regent, Lancer, and Sunrise; 2d, Mr. J. Douglas, with Exile, Formosa, Prince Regent, William IV., Lancer, and George IV.—these two being the only competitors. Mr. Barlow also had the best three plants in Sunrise, Prince Regent, and Exile; 2d, Mr. W. Bolton, with Exile, Cheshire Favourite, and Prince Regent. In the class for single specimens, Mr. J. Douglas was 1st with Naxara (Sanderson), a promising black ground; Mr. Barlow being 2d and 3d, with Exile and Cheshire Favourite.

Fancy Polyanthus and Primroses.—Mr. R. Dean was 1st with twelve fancy Polyanthus, staging large and well-bloomed plants; Mr. J. Douglas being 2d. Mr. R. Dean also had best twelve single Primroses, distinct and brilliant in colour. Messrs. Paul & Son had the best six double Primroses, staging large plants of Croussii Platypetala plena, Harlequin, Double Purple, Double Sulphur, and White—a very good lot indeed; 2d, H. S. Leonard, Esq., St. Catherine's, Guildford, who had white platypetala plena, sulphur, two shades of purple, and the rich maroon double velvet-crimson.

Seedling Auriculas.—Two prizes were offered in each of the four classes for seedlings, as follows:—Green-edged: 1st, Mr. W. Bolton, with James Douglas; 2d, the Rev. F. D. Horner, with Conquest. Grey-edged: 1st, Mr. W. Bolton, with Samuel Barlow; 2d, Mr. S. Barlow, with Grey Friar. White-edged: 1st, the Rev. F. D. Horner, with Amanda. Selfs: 1st, Mr. J. Douglas, with Perfection; 2d, the Rev. F. D. Horner, with Red Rover. Alpines—gold centered: 1st, Mr. S. Barlow, with Charles Needham; 2d, Mr. C. Turner, with Sunrise. White-edged: 1st, Mr. C. Turner, with Lady H. Crewe; 2d, Mr. J. Douglas, with Ada. No prizes were awarded to seedling gold-laced Polyanthus.

First-class Certificates of Merit were awarded to the following new Auriculas:—Amanda (Horner), white edge, good tube and paste, black body colour, broad smooth edge, and fine pip. Samuel Barlow (Bolton), grey edge, very fine, quite up to the best, good in all its parts, large pip—likely to prove even greater than George's Lightbody. James Douglas (Bolton), grey edge—a decided advance upon the Prince of Greens; good tube, black body colour, and highly promising. Sir William Hewett (Douglas), a fine smooth dark self, with large well-formed pip. Magpie (Horner), white edge, good tube, paste, and deep body colour, fine pip and truss. Dulcie (Horner), self, a very fine and smooth dark variety of great promise. Grayling (Horner), grey edge, angular tube, good paste and body colour—a grand flower. Edward Pohlman (Turner), green edge, a little weak in the tube, good paste, black body colour, deep bright green edge—distinct and fine. Rubra (Horner), self, good tube and paste, deep red edge, fine and smooth pip; and Abbé Lizst (Douglas), a very fine green edge, that is a decided acquisition.

Collections of Species.—The absence of Mr. Llewellyn's fine group decidedly weakened this interesting feature of the show. Mr. J. Douglas was 1st, with twelve distinct species, having P. amœna lilacina, P. obconica, P. verticillata, all remarkably good specimens; P. rosea, P. denticulata, P. nivea, P. pubescens, P. villosa, P. marginata, P. intermedia, P. cocile, and P. ciliata purpurea. 2d, Messrs. Paul & Son, their leading plants being P. similis, P. ciliata purpurea, P. nivea, P. auriculata, and P. denticulata. Mr. S. Barlow was the only exhibitor of six species, having P. obconica, P. denticulata, P. intermedia, P. rosea, P. viscosa, and P. nivea.

Premier Auricula.—This was Prince of Greens, with a large head of finely developed pips, shown by Mr. W. H. White in his six varieties. It was said to be one of the finest examples of this variety ever seen.

Narcissus Committee.

A meeting of this committee was held at South Kensington on Tuesday, April 26, when a number of specimens were submitted. The chief interest lay in the following:—

Mr. Maw showed the flowering scape (dried) of N. Tazetta papyraceus, which he found south of Tangiers, and which was considerably over 3 feet in length. Also a collection of the different typical forms of British Pseudo-Narcissus for comparison. Mr. Wolley Dod sent Portuguese forms, supposed hybrids between triandrus and Pseudo-Narcissus, bearing a remarkable resemblance to N. Johnstoni. Mr. Kendall brought a very fine seedling from Emperor, similar in form but of a citron colour—a bold flower, of good substance. It was resolved to register it under the name of The Czar. Other good seedlings the committee desired to see again, and a Pseudo-Narcissus (hybrid?) of very perfect form, always quite constant, was registered as Vicar of Lulworth. Mr. Corder sent flowers of Portuguese varieties collected last year, and Mr. Threlfall showed dried flowers of a Tazetta he had received from the Canary Islands. Flowers of N. Johnstoni were received from several sources. A number of the older and better known varieties were considered, and it was resolved to register the following:—Emperor, J. B. M. Camm, Horsfieldi, Empress, Sir Watkin, C. J. Backhouse, Princess Mary, Minnie Hume, Beatrice, Mary Anderson (Leedsi), Gem (Barri). Conspicuous attention was drawn, in a communication from Mr. Wolley Dod, to a disease to which Daffodils are subject, and which was very prevalent in his garden this year. The Daffodil comes up weakly at the end of winter, the green leaves soon become brown at the points, and their growth is arrested, when dug up the bulb is found soft and rootless. It generally attacks whole clumps, by which it would seem to be contagious; the germs are in the bulbs the previous summer, for clumps that have been divided in July and replanted in different soils have all shown the disease in the following spring. It did not appear to be attributable to frost nor to imperfect maturing, for in the wetter and more sunless parts of his garden, where the leaves of Daffodils remain green almost till it is time for them to start again, no signs were seen of it. Many members of the committee stated that they had found his disease especially prevalent this year; all classes of Daffodils seemed to have been attacked alike and not only those of more delicate constitution. Mr. Wilks had suffered chiefly in the wetter parts of his garden, but he thought it had arisen from too heavy or too fresh a dressing of manure. Observation is specially requested to this disease, and the committee will be glad to receive intimation of any facts bearing on the question of its origin. *C. R. Scrase Dickins Hon. Sec.*

The Weather.

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING MAY 7. (AVERAGE OF THIRTY-THREE YEARS.)

May 1	51°.0	May 5	52°.0
„ 2	51°.3	„ 6	52°.2
„ 3	51°.5	„ 7	52°.5
„ 4	51°.7	Mean for the week ...	51°.7

THE PAST WEEK.

The following summary record of the weather for the week ending April 25, is furnished from the Meteorological Office:—

"The *weather*, although fine over the southern parts of the kingdom at the commencement of the week, has since become unsettled and showery in all districts. Thunder and lightning were observed over the northern parts of Ireland and England and the south of Scotland on the 23d, and snow showers were experienced at all but our extreme southern stations on the 24th or 25th.

"The *temperature* has been below the mean in all districts excepting 'England, N.E.,' the deficit ranging from 1° in 'Scotland, E.,' 'England, E.,' and 'Scotland, W.,' to 4° in 'England. S.W.' The highest readings were observed generally on the 19th, when the thermometer rose to between 65° and 70° over the eastern, southern and central parts of England. The lowest readings were observed in most places on the night of the 24th—25th, but in the south-east of England they occurred earlier in the week. Minima of 32° or below were registered in all districts excepting 'England, E.' 'Scotland, W.,' and the 'Channel Islands,' in some places the thermometer on the grass fell to 8° or 10° below the freezing point.

The *rainfall* has been more than the mean in all districts excepting 'England, E.,' and the 'Midland

Counties.' In Scotland and Ireland the excess has been considerable.

"*Bright sunshine* has been far less prevalent than it was last week in all districts excepting 'England, S.,' the percentage of the possible amount of duration varying from 12 in 'Scotland, N.,' to 49 in 'England, S.,' and 55 in the 'Channel Islands.]"

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 32° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature.				
		Accumulated.			
	Above or below the Mean for the week ending April 25.	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 4, 1887.	Below 42° difference from Mean since Jan. 4, 1887.
Principal Wheat-producing Districts.		Day-deg.	Day-deg.	Day-deg.	Day-deg.
0. Scotland, N. ...	2 below	27	13	+ 37	+ 29
1. Scotland, E. ...	1 below	35	13	+ 56	+ 17
2. England, N.E. ...	0 (aver.)	42	6	+ 7	+ 73
3. England, E. ...	1 below	54	6	— 71	+ 162
4. Midland Cos. ...	2 below	49	9	— 53	+ 155
5. England, S. ...	2 below	48	5	— 73	+ 152
Principal Grazing, &c., Districts.					
6. Scotland, W. ...	1 below	30	3	— 11	+ 32
7. England, N.W. ...	3 below	31	3	— 56	+ 113
8. England, S.W. ...	4 below	39	7	— 76	+ 163
9. Ireland, N. ...	2 below	33	4	+ 11	+ 17
10. Ireland, S. ...	3 below	38	4	— 24	+ 84
— Channel Islands	2 below	42	0	— 134	+ 77

Districts.	Rainfall.			Bright Sunshine.	
	More or less than the Mean for the Week.	No. of Rainy Days since Jan. 4, 1887.	Total Fall since Jan. 4, 1887.	Percentage of possible duration for the Week.	Percentage of possible Duration since Jan. 4, 1887.
Principal Wheat-producing Districts.	Tenths of Inch.		Ins.		
0. Scotland, N. ...	10 more	69	13.9	12	26
1. Scotland, E. ...	4 more	51	6.4	21	32
2. England, N.E. ...	1 less	48	4.4	30	33
3. England, E. ...	1 more	41	4.3	42	37
4. Midland Cos. ...	1 less	40	4.5	37	31
5. England, S. ...	1 more	41	4.9	49	33
Principal Grazing, &c., Districts.					
6. Scotland, W. ...	10 more	56	11.8	27	31
7. England, N.W. ...	2 more	44	6.7	29	32
8. England, S.W. ...	1 more	44	6.2	44	41
9. Ireland, N. ...	8 more	54	8.6	26	31
10. Ireland, S. ...	5 more	47	8.9	38	40
— Channel Islands	4 more	49	5.6	55	47

NOTICES TO CORRESPONDENTS.

*** Correspondents will greatly oblige by sending early intelligence of local events likely to be of interest to our readers, or which it is desirable to bring under the notice of horticulturists.

Addendum: Rose Puritan.—In order to prevent any misunderstanding, we announce that the Rose Puritan, for which a Certificate was given at the Royal Botanic Society's show on April 20 (see p. 555, last week), was shown by Messrs. W. Paul & Son, of Waltham Cross, London, N.

Arum maculatum: *M. D.* Is common enough in a wild state. What you had under glass was probably some other species. The fungus is not the St. George's Mushroom. We will report on it in our next issue.

Azaleas and Roses: *J. H.* We cannot undertake to name these plants. Take them to some specialist, or a nurseryman who deals extensively in them.

Crotons: *G. S.* You have no idea, apparently, that the analysis of water takes up a long time, is very costly, and is not within the province of an editor to accomplish. The spots on your leaves are the result of drip, and the leaves look as if the plant had been kept in too moist and hot a house without adequate ventilation.

Grape Vines and Seakale: *An Amateur.* You can take no fruit from canes planted in a wide border under two years. Fruiting Vines are grown in pots, tubs, or other very confined receptacles. Your Black Hamburgh canes can be treated in a similar manner to those mentioned in your former inquiry, but you must not expect fruit from them before 1889. Seakale planted last November must have one season's growth before it is fit for consumption.

Hops: *J. H.* These should be gathered just before full ripeness, and before the yellow dust (which, by the way, is not pollen) falls.

Maréchal Niel Rose and Manure: *T. W.* You certainly did injury to the plant by an overdose of Standen's manure, and your neighbours by the excessive use of the stable-dung water. There is always the temptation present to overdo the manuring business if a plant is growing well and giving a fair quantity of bloom. It is a case of the willing horse. You must exercise more caution with these agents. One of the safest methods of manuring Roses of all kinds is by means of a mulching of farmyard dung, and if it contains a small amount of pig-dung so much the better. In dry weather, when watering becomes necessary, the manurial properties of the mulching are carried down to the roots in sufficient quantity. Towards the end of July the old manure can be removed, and fresh applied in the case of Roses that bloom again in late summer.

Names of Plants: *John Fell.* Rhododendron (Azalea) Smithi aureum, a hybrid from R. (Azalea) sinensis.—*J. C.* We cannot undertake to name florists' flowers.—*P. W.* Your specimens are not numbered. Among them we notice Masdevallia Wagneri, Miltonia Roezlii (white); Odontoglossum Andersonianum, cream-coloured; O. luteo-purpureum, white-crested lip; O. Halli, lip yellow and brown; Oncidium Marshallianum, large yellow lip.—*W. H. B.* Pedicularis palustris.—*C. Wise.* Dendrobium nobile cœrulescens, very bright in colour.—*H. J. Ross.* Asphodelus luteus.—*G. Elgin.* Specimens sent are Primula pubescens, Jacq.; a hybrid super-Auricula × hirsuta, Kern., a very variable plant, and the parent of the alpine Auriculas. It will be fully treated of in our next issue.—*G. G. F.* Arum triphyllum.—*J. T. B.* Rhododendron campylocarpum.—*Bruce.* 1, Sisyrinchium filifolium; 2, Doronicum, specimen insufficient; 3, Mercurialis perennis; 4, Pæonia tenuifolia.—*A. H.* 1, Dicksonia Spruceana, Mett.; 3, Dicksonia Sellowiana, Hook.; 4, Blechnum occidentale.

Pitcairnias: *J. H.* These plants are very easily managed in a plant-stove, where a minimum night temperature of from 55°—60° in winter, and 65°—70° in summer, is maintained. Soil: peat, loam, burnt earth, in about equal parts, and a little sand. Potting may be done in March, and again, if found requisite, in July; but over-potting must be strictly avoided. Free exposure to sunlight is desirable to induce a flowering habit, but not so much so that the foliage gets discoloured. The easiest method of increase is by division in spring.

Poplar Trees Behind a Fruit Wall: *J. W.* As the subsoil is gravel, and is reached at 1 foot in depth, the foundation of the wall will exclude the roots, if it be laid at 3 feet from the surface. The wall, if made of brick or stone, should be faced or laid in cement for that depth. The drip would be harmful to the trees, but you can insist on your neighbour removing overhanging branches, or do it yourself, if he should refuse to do so.

Seedling Carnations: *Carnation.* The buff-coloured variety is similar in colour to one exhibited last year under the name of Terra Cotta, but the flower sent is rather too full, with small petals in the centre; the pod is short, and split to the bottom; notwithstanding this, it would be useful for decorative purposes. The dark crimson variety with fringed petals is a much thinner flower, and as a consequence the pod does not burst; it is a useful decorative variety.

Spot in Orchids: *T. M.* This is usually due to the attacks of some minute fungus, but is generally associated with defective treatment, such as deficient ventilation, &c.

Stephanotis floribunda from Seed: *J. H.* Plants can be readily raised from home-grown seed. With regard to your question concerning seedlings, it may be stated that some slight differences of habit, size of truss, and disposition to bloom, will be observed.

Troughton Cucumber: *Llewellyn Jones, Roby Hall, Liverpool.* You are quite mistaken in stating that in our report of the Royal Horticultural Society's show (when the above was shown by the raiser), on p. 222, February 12 last, we compared it to Rollisson's Telegraph; no comparison whatever was made.

CATALOGUES RECEIVED.

J. Crute, 14, Knightrider Street, London, E.C.—Flower Pots, &c.

A. M. C. Jongkindt Coninck, Tottenham Nurseries, Dedemsvaart, near Zwolle, Holland—Wholesale Trade List.

Heinrich Strauss, Ehrenfeld, near Köln, Germany—Orchids and Palms, &c.

Communications Received.—E. C. (you put on insufficient stamps).—W. B.—Forester.—H. S.—W. G.—D.—E. A. Y.—W. T.—E. W.—J. W.—G. P. & Son.—J. C.—F. Sander & Co.—W. H.—C.—D.—W. B. H.—T. M.—J. W. B.—R. McL.—R. H. M.—Professor Cornu.—Professor Henriques.—G. P.—J. v. V.—W. B., Manchester.—L. Linden (with many thanks).—J. F.—W. S. M.—W. C.

ENQUIRIES.

"*He that questioneth much shall learn much.*"—Bacon.

Larch.—Have any of your correspondents found lime injurious to the growth of Larch? I am sorry to say that I think I can give a conclusive instance that such is the case, and yet it does not appear to have injured in the least either Scotch or Spruce Firs, Pinus Laricio, P. nobilis, P. Douglasii, &c., nor yet Thuias, Cupressus, &c. *Cambrian.*

DIED.—William Wadds, for twenty-six years head gardener at Quenby Hall, Leicestershire, died on April 26, quite suddenly. The deceased was elected a pensioner of the Gardeners' Royal Benevolent Institution in January of the present year.

MARKETS.

COVENT GARDEN, April 28.

Business maintains its improvement, and prices are firm, with supplies somewhat checked. Some very good Peaches have reached us during the week. *James Webber, Wholesale Apple Market.*

Vegetables—Average Retail Prices.

	s. d. s. d.		s. d. s. d.
Artichokes, per doz...	6 0– ...	Lettuce, Cos., Fr., each	0 6– ...
Asparagus, French, per bundle... ...	4 0–12 0	Mushrooms, punnet	1 6– 2 0
— English, per 100	8 0– ...	Mustard and Cress, punnet	0 4– ...
Beans, Kidney, lb. ...	1 6– ...	Onions, per bushel ...	4 0– ...
Beet, red, per dozen	1 0– 2 0	Parsley, per bunch...	0 6– ...
Carrots, per bunch...	0 6– ...	Peas, per quart ...	6 0– ...
Cauliflowers, per dozen	3 0– ...	Potatos, per cwt. ...	4 0– 5 0
Celery, per bundle ...	1 6– 2 0	,, kidney, per cwt.	4 0– 5 0
Cucumbers, each ...	0 6– 1 0	Rhubarb, per bundle	0 6– ...
Endive, per dozen ...	3 0– ...	Seakale, per punnet	2 6– ...
Green Mint, bunch...	1 0– ...	Shallots, per lb. ...	0 3– ...
Herbs, per bunch ...	0 4– ...	Spinach, per bushel...	4 0– ...
Leeks, per bunch ...	0 3– ...	Sprue, bundle ...	1 0– ...
Lettuce, per dozen ...	1 6– 2 0	Tomatos, per lb. ...	4 0– ...
		Turnips, new, bunch	1 0– ...

Potatos.—Markets very heavy, at the following prices:—Regents, 90s. to 110s.; Magnums, 80s. to 120s. per ton.

Fruit.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Apple, ½-sieve	1 6– 5 0	Peaches, dozen	20 0–60 0
— Nova Scotia, brl.	8 0–12 0	Pears, per dozen	2 0– 4 0
Grapes, new, per lb.	6 0– 8 0	Pine-apples, Eng., lb.	1 0– 1 6
— old, per lb.	4 0– 8 0	— St. Michael. each	1 6– 6 0
Kent Cobs, 100 lb.	60 0– ...	Strawberries, per lb.	4 0– 8 0
Lemons, per case	12 0–21 0		

Plants in Pots.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz.	6 0–18 0	Foliage plants, various, each	2 0–10 0
Arum Lilies, dozen	9 0–12 0	Fuchsias, doz.	9 0–12 0
Azaleas, per dozen	24 0–42 0	Genistas, per doz.	6 0– 9 0
Cinerarias, per doz.	6 0– 9 0	Hydrangeas, doz.	9 0–12 0
Cyclamens, dozen	10 0–18 0	Lilium longiflorum, per dozen	24 0–36 0
Cyperus, per dozen	4 0–12 0	Lily-of-Val., 12 pots	12 0–18 0
Daffodils, 12 pots	9 0–10 0	Marguerite Daisy, per dozen	6 0–12 0
Dracæna terminalis, per dozen	30 0–60 0	Mignonette, doz.	6 0– 9 0
— viridis, per doz.	12 0–24 0	Myrtles, per dozen	6 0–12 0
Erica, various, per dozen	18 0–42 0	Palms, in var., each	2 6–21 0
Euonymus, in var., per dozen	6 0–18 0	Pelargoniums, dozen	9 0–18 0
Evergreens, in var., per dozen	6 0–24 0	— scarlet, per doz.	4 0– 8 0
Fairy Roses, doz.	10 0–12 0	Rhodanthe, dozen	6 0– 9 0
Ferns, in variety, per dozen	4 0–18 0	Roses, various, doz.	18 0–30 0
Ficus elastica, each	1 6– 7 0	Solanums, per dozen	9 0–12 0
		Spiræa, per dozen	9 0–12 0

Cut Flowers.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Abutilons, 12 bun	3 0– 4 0	Marguerites, per 12 bunches	3 0– 6 0
Anemone, 12 bun.	2 0– 4 0	Mignonette, 12 bun.	3 0– 6 0
Arum Lilies, 12 blms.	3 0– 5 0	Pelargoniums, scarlet, 12 sprays	0 4– 0 9
Azaleas, 12 sprays	0 6– 0 9	Primroses, 12 bun.	0 6– 1 0
Bouvardias, per bun.	0 6– 1 0	Primulas, double, 12 sprays	0 9– 1 0
Camellias, 12 blooms	1 0– 3 0	Roses, Tea, per doz.	1 0– 2 0
Carnations, 12 blms.	1 0– 3 0	— coloured, dozen.	3 0– 6 0
Cyclamen, 12 blooms	0 4– 0 6	— red, French, doz.	1 6– 2 0
Daffodils, single, 12 bunches	1 0– 2 0	— Saffrano, dozen	1 0– 1 6
— double, 12 bun.	1 6– 3 0	Spiræa, 12 bunches	6 0– 9 0
Eucharis, per dozen	4 0– 6 0	Tropæolums, 12 bun.	1 0– 2 0
Gardenias, 12 blooms	1 6– 3 0	Tulips, 12 bunches	4 0– 6 0
Heliotropes, 12 spr.	0 6– 1 0	Tuberoses, 12 blms.	1 0– ...
Hyacinths (in boxes from Holland), box	1 6– 4 0	Violets, 12 bunches	0 4– 0 9
Jasmine, white, bun.	0 6– 0 9	— Parme, French, per bunch	2 0– 3 0
Lilies of the Valley, 12 sprays	0 6– 1 6	— Czar, Fr., bunch	0 9– ...
Lilium longiflorum, 12 blooms	4 0– 6 0	Wallflowers, 12 bun.	3 0– 6 0

SEEDS.

London: *April* 27.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., write that the consumptive demand for Clover and other farm seeds still continues, and the orders for same which come to hand are executed at the remarkably low rates characteristic of the present season. Stocks of red Clover seed have now become very small. Alsike, white Clover, and Trefoil are all exceedingly cheap. There is rather more business doing in spring tares. Perennial and Italian Rye grasses keep moderate in prices. Blue Peas and Haricot Beans are steady in value and demand. There is no change this week in the trade for bird seeds.

FRUIT AND VEGETABLES.

Columbia (East London): *April* 27.—Good supplies of all kinds of vegetables, with a fair demand, at moderate prices. Potato trade brisk. Quotations:—Apples (American), 12*s.* to 24*s.* per barrel; Cauliflowers, 5*s.* to 10*s.* per tally; Cabbages, 5*s.* to 8*s.* do.; Spinach, 2*s.* 6*d.* to 3*s.* per sieve; Sprouting Broccoli, 2*s.* to 2*s.* 6*d.* do.; Turnip-tops, 1*s.* to 2*s.* do.; bunch Greens, 2*s.* 6*d.* to 3*s.* 6*d.* per dozen; Rhubarb, 1*s.* 6*d.* to 2*s.* per dozen bundles; spring Onions, 3*s.* to 4*s.* do,; Onions (English), 5*s.* to 6*s.* per cwt.; foreign do., 3*s.* 6*d.* to 4*s.* 6*d.* per bag; Carrots, 16*s.* to 26*s.* per ton.

Stratford: *April* 26.—The market has been well supplied, and a fair trade was done at the undermentioned prices:—Cauliflowers, 1*s.* to 1*s.* 2*d.* per dozen; ditto, 8*s.* to 9*s.* per tally; Carrots, household, 25*s.* to 30*s.* per ton; do., cattle feeding, 18*s.* to 23*s.* do,; Parsnips, 6*d.* to 1*s.* per score; Mangels, 13*s.* to 18*s.* per ton; Onions, English, 100*s.* to 120*s.* per ton; do., Dutch, 3*s.* 6*d.* to 4*s.* per bag; Watercress, 6*d.* per dozen; Rhubarb, 2*s.* to 2*s.* 6*d.* do.; Apples, 3*s.* to 4*s.* per basket; spring Onions, 3*s.* to 6*s.* per dozen bundles.

POTATOS.

Columbia (East London): *April* 27.—Quotations:—York and Lincoln Regents, 60*s.* to 80*s.*; do. Magnums, 60*s.* to 85*s.*; do. Champions, 55*s.* to 70*s.*; Kent and Surrey Regents, 65*s.* to 80*s.*; do. Magnums, 60*s.* to 70*s.*; do. Champions, 55*s.* to 65*s.* Cambridgeshire Regents, 55*s.* to 75*s.*; do. Magnums, 60*s.* to 80*s.*; do. Champions, 55*s.* to 70*s.* Scotch Regents, 70*s.* to 120*s.*; do. Magnums, 60*s.* to 130*s.*; do. Champions, 55*s.* to 70*s.* per ton.

Surplus Stock of Seed Potatos.

H. and F. SHARPE, having a Surplus Stock of the following kinds of SEED POTATOS, are prepared to offer them at very low prices to clear out:—Veitch's Improved Ashleaf Kidney, Myatt's Prolific, Rivers' Royal Ashleaf, Gloucestershire Kidney, Sutton's Early Regent, Snowflake, Pride of America, Fidler's Victory, Brownell's Best, Magnum Bonum, Reading Hero, Reading Russet, Early Rose, Fiftyfold, Adirondack.

Seed Growing Establishment, Wisbech.

Hardy Herbaceous and Alpine Plants.

PAUL and SON'S New Descriptive SUPPLEMENT, with all novelties offered to date, is now ready. It will be sent with last edition of the very carefully prepared LIST, post-free on application. This contains soils, aspects, colour, date of flowering and individual prices of all plants for Herbaceous and Rock Gardens. The Rock Garden at Broxbourne from now on is very interesting.

The Old Nurseries, Cheshunt, N.

Cocoa-nut Fibre Refuse, newly made.

C. PRINCE (late J. Stevens & Co.), Greyhound Yard, and 153, High Street, Battersea. Great reduction. Truckload (2 tons), 17*s.* 6*d.*; in bags—20, 14*s.*; 40, 25*s.*, bags included. All Free on to Rail. Cash with orders as above.

NATIVE GUANO.—Price £3 10*s.* per ton in bags; lots under 10 cwt., 4*s.* per cwt. Sample bag (1 cwt.) sent, carriage paid, to any station in England on receipt of P.O. for 5*s.*

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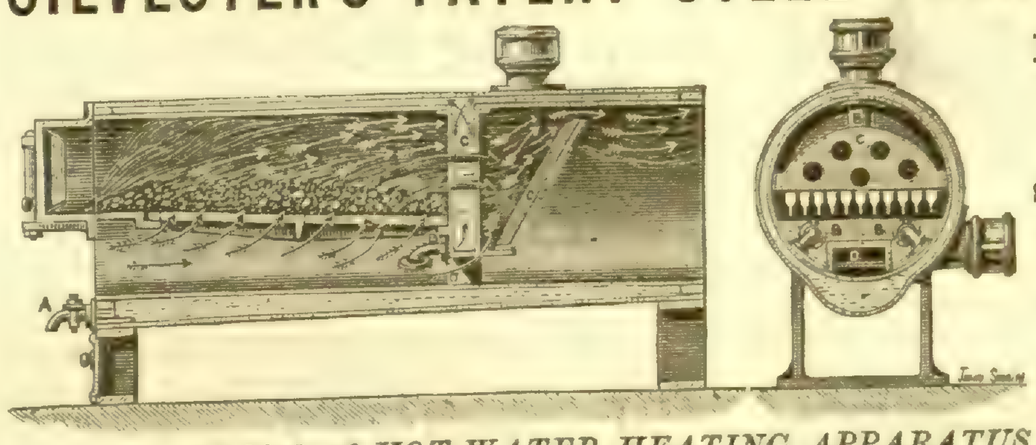

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SEALED BAGS ONLY,

7 lb.	14 lb.	28 lb.	56 lb.	1 cwt.
2/6	4/6	7/6	12/6	20/-

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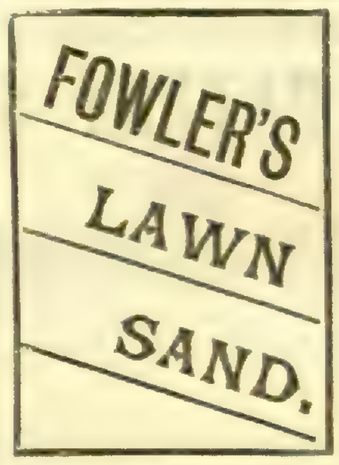

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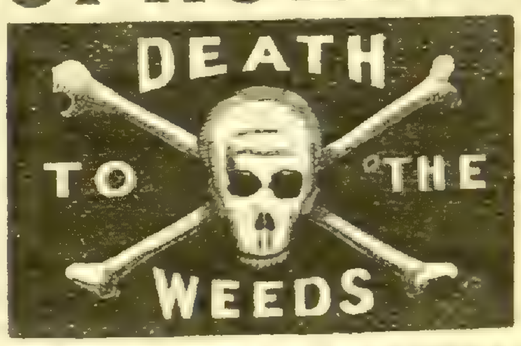

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4 galls., sufficient for 100 galls. of water ...	£0	6	0
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16 ,, ,, 400 ,, ,, ...	1	2	0
40 ,, ,, 1000 ,, ,, ..	2	7	6

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100 galls. will cover an area of about 50 yards × 50 yards.

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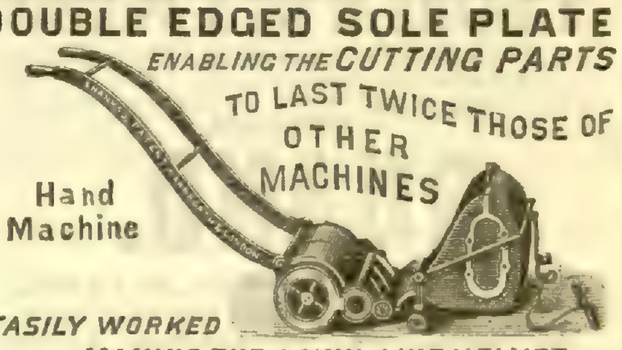
ENABLING THE CUTTING PARTS TO LAST TWICE THOSE OF OTHER MACHINES



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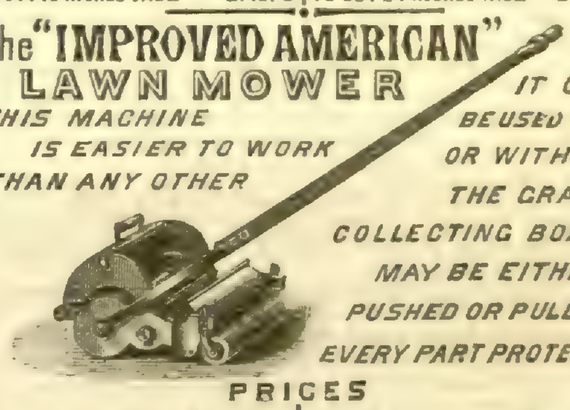
The "IMPROVED AMERICAN" LAWN MOWER

THIS MACHINE IS EASIER TO WORK THAN ANY OTHER



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A LARGE STOCK OF MACHINES OF ALL SIZES ALWAYS KEPT AT 27, LEADENHALL STREET
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SMALL LAWN MOWERS
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Has an
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Every grain fertilizes because the Guano is perfectly pure. It is most economical, one part of Manure to 100 parts of soil being ample for garden use.

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Dr. Voelcker's analysis guaranteed. FISH-POTASH contains Ammonia, Phosphates and Potash in large proportions, which are the principal elements of fertilization.

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2-lb. Tins, 1s.; in Bags, 7 lbs., 2s.; 14 lbs., 4s.; 28 lbs., 6s. 6d.; 56 lbs., 10s. 6d.: 1 cwt., 16s.; 2 cwt., 30s., carriage paid. Special terms for larger quantities.

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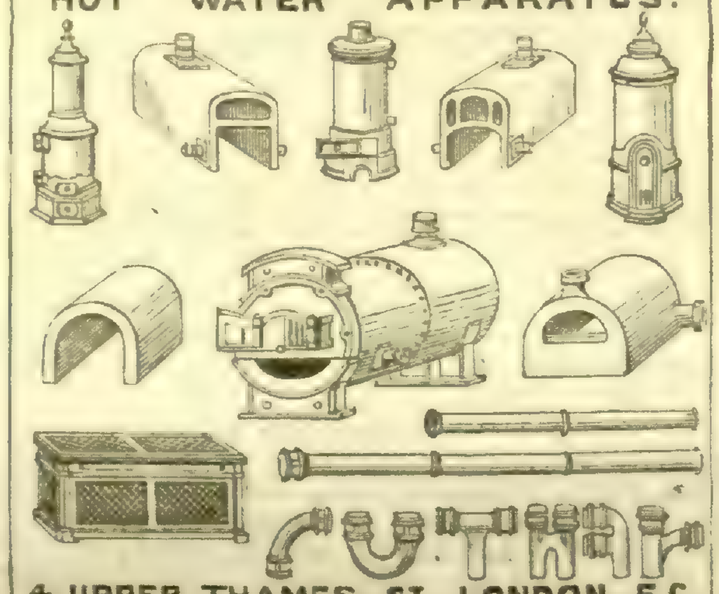

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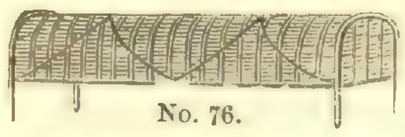

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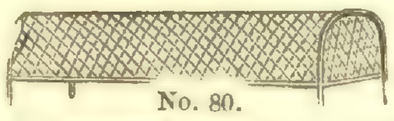

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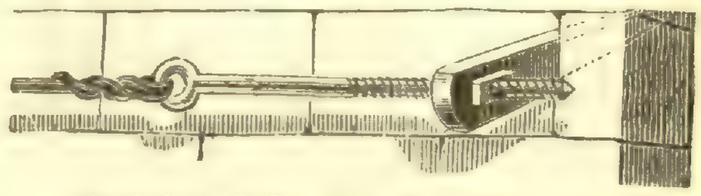

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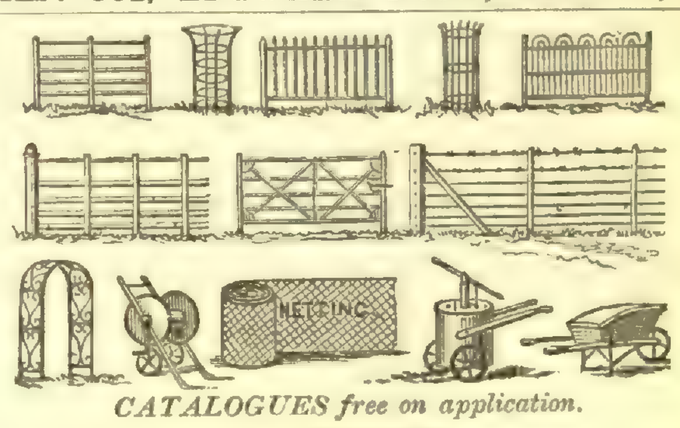

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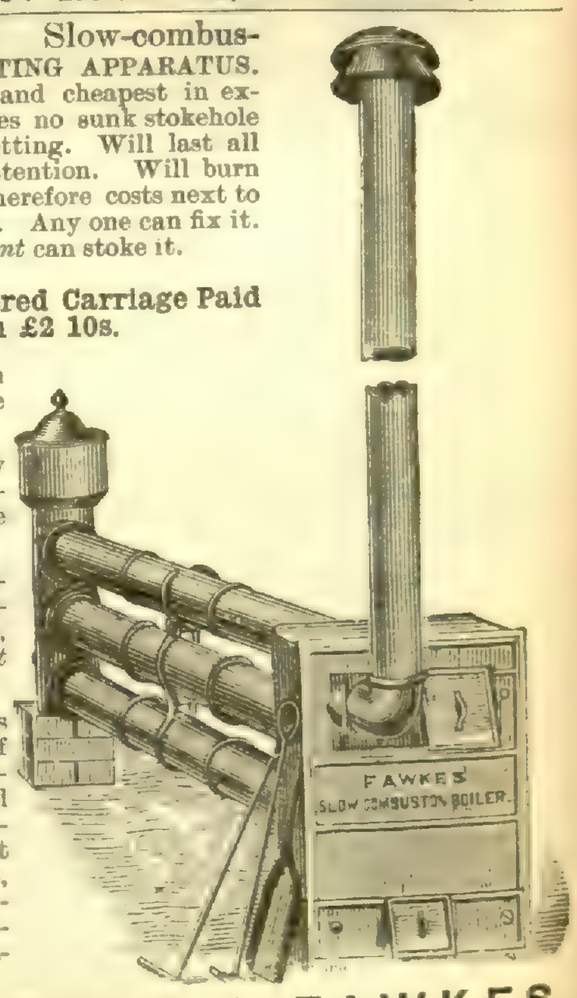

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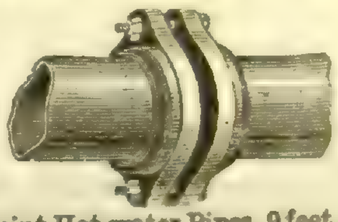

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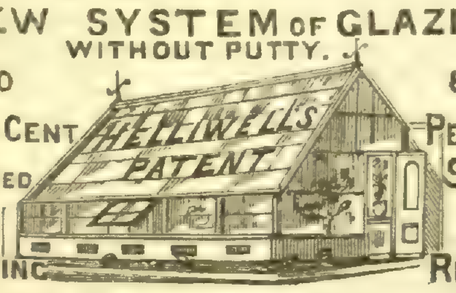

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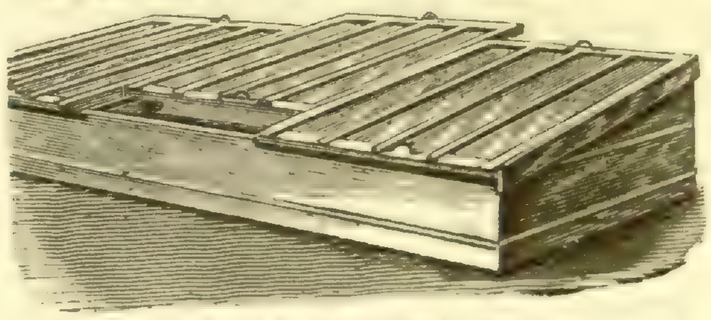

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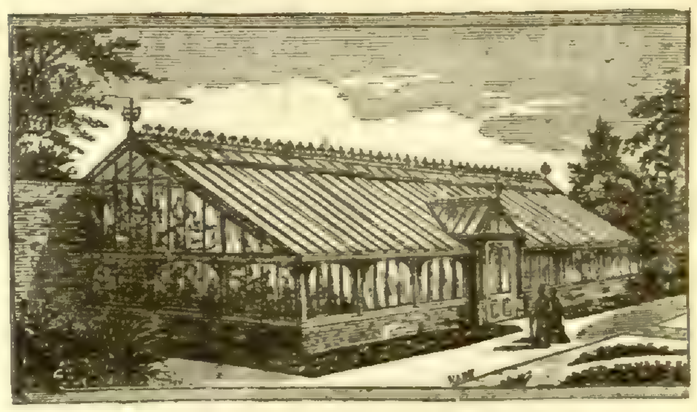

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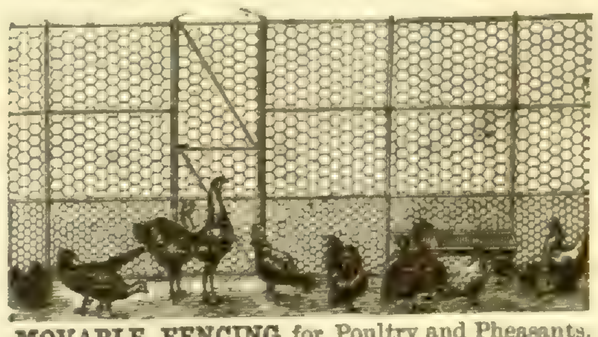

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Strong Hurdle ... 5*s.* each. | Light Hurdle ... 3*s.* 6*d.* each.
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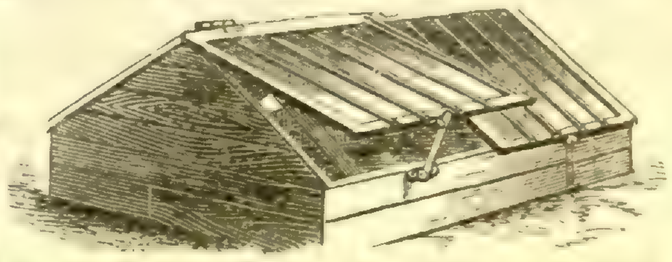

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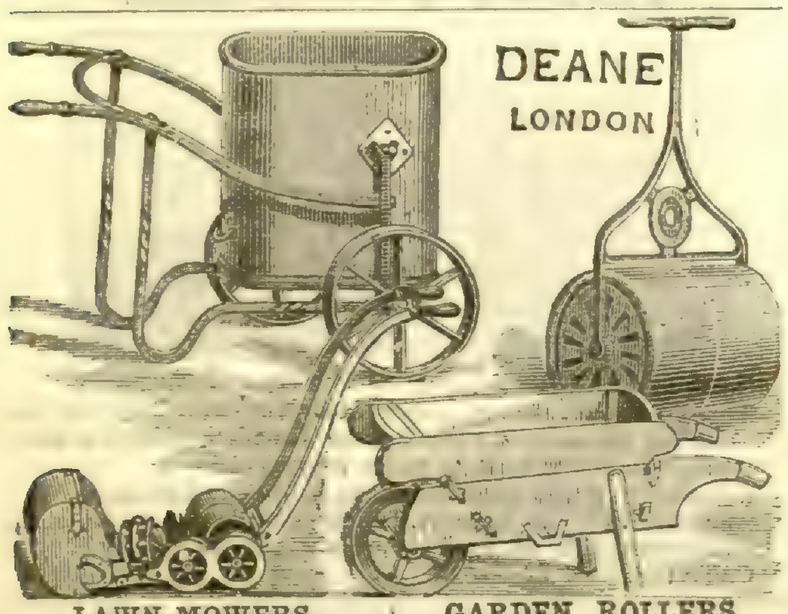

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THE LIVERPOOL HORTICULTURAL COMPANY REQUIRE a competent MAN to take charge of a Department where Ericas, Market Plants, and Vines are grown extensively.—Apply giving references and stating salary expected.—The Vineyard and Nurseries, Garston, near Liverpool.

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WANTED.—FOREMEN waiting for situations, to come into the Nursery till required to fill up openings. Personal applications.—PINE-APPLE NURSERY, Maida Vale, W.

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WANTED, a MAN, who understands Vines and Greenhouse Plants, and to make himself generally useful; not to exceed 40 years of age. House and garden found. Wages, 21*s.* per week. Wife to Assist in the House when required, for which she will be paid.—Mr. CURTIS, Whitehouses, Retford.

WANTED, for the Trade, a MAN thoroughly conversant with the Cultivation of Florists' Flowers.—EDWARD CARR, Nurseryman, Southport.

WANTED, a GROWER of Tomatos and Mushrooms; one with a knowledge of Outside Nursery Work preferred. Must have filled a similar situation. Wages, 25*s.* per week, with house.—Address, stating age, and where last employed, with references as to ability, to 2, Parker Street, Liverpool.

WANTED, in a Nursery, a trustworthy MAN, able to take charge of Houses and to Grow Plants, Cucumbers, &c., for Market. Wages 18*s.* per week. Married man preferred.—G. JACOB, Florist, Witney, Oxon.

WANTED, AT ONCE, an active steady married MAN (age 30 to 40, without incumbrance, preferred), who can Grow Plants and Cut Flowers generally for Market. Only those thoroughly acquainted with the trade need apply. Wages, 18*s.*, with good cottage, coals, and vegetables.—P. BROS, Normandy, Guildford.

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WANTED, a young MAN, accustomed to General Nursery Work.—State wages and references to WILSON, Florist, Folkestone.

WANTED IMMEDIATELY, a young MAN, who has been used to general Nursery Work under Glass.—Apply, stating wages, to R. PENNELL AND SON, Nurseries, Lincoln.

WANTED, a Kitchen Gardener and Wife (without children preferred) as LABOUR MASTER and MATRON of a Boys' Orphanage. Church people. Used to boys.—Miss COOKE, Beckley, Oxford.

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RICHARD SMITH AND CO. beg to announce that they are constantly receiving applications from Gardeners, seeking situations, and that they will be able to supply any Lady or Gentleman with particulars &c.—St. John's Nurseries, Worcester.

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GARDENER (HEAD); age 28.—Mr. GEARY, Gardener to the Earl of Portsmouth, Eggesford Gardens, Wembworthy, North Devon, can highly recommend his Foreman, Elias Dawe, to any Lady or Gentleman requiring the services of one. Good testimonials from previous employers.

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GARDENER (HEAD WORKING).—Age 30, married; highly recommended by present and previous employers as to character and ability.—GEORGE LEONARD, Major Wood, Abbey Wood, Kent.

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GARDENER (Head, Single-handed, or otherwise).—Age 28; married, one child. Abstainer. Good character.—G. THURLEY, 21, Beaconsfield Street, Bedford.

GARDENER, under a Foreman.—Age 22; three and a half years' good character in last situation.—F. HOLBORN, 2, West Dock Avenue, Hessle Road, Hull.

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The Late EMPEROR OF THE FRENCH. The EMPEROR OF RUSSIA,
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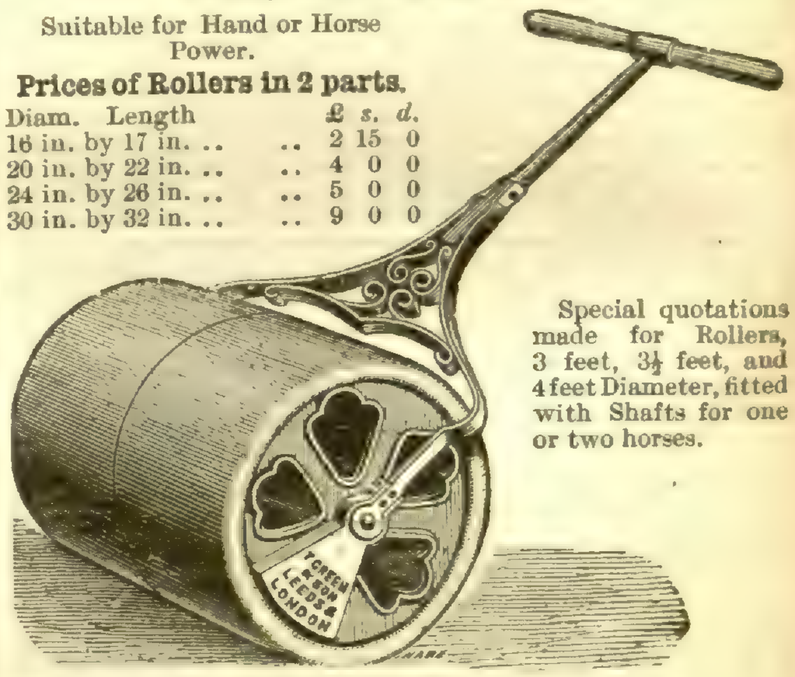

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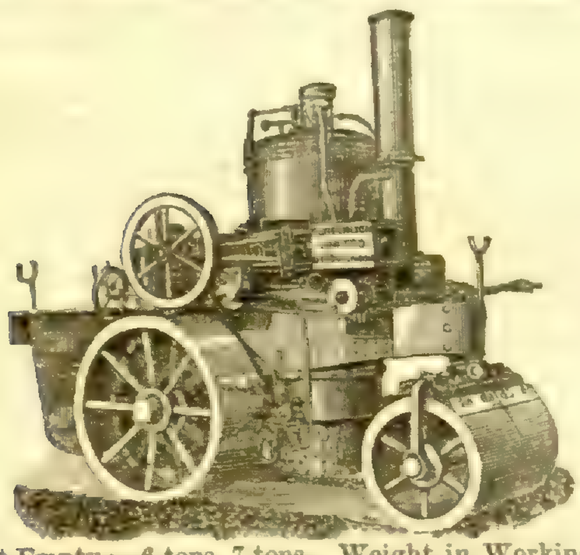

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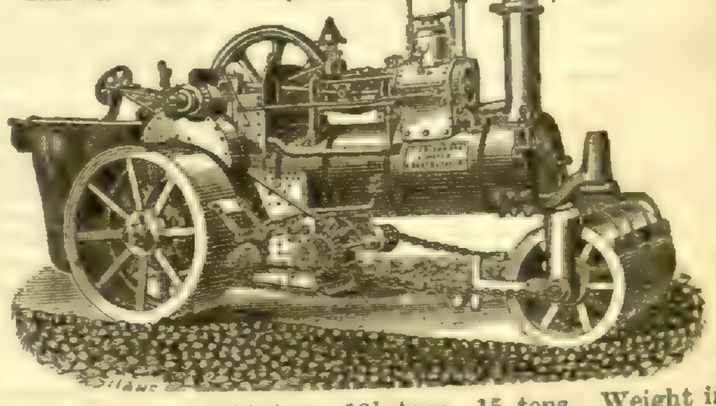

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CONTENTS.

Aloes in Natal 612
Anemone, meaning of ... 619
Anemones 613
Auricula, origin of the garden 612
Berberids 609
Books:—
Report on the Colonial Sections of the Colonial and Indian Exhibition 614
Bulb garden, the ... 615
Cultural memoranda ... 617
Dendrobium sulcatum var. polyantha... ... 607
Eulalias 616
Ferrous oxide and vegetation 613
Floral novelties 619
Florists' Flowers... ... 616
Flower garden, the ... 607
Forestry 614
Fruit register 611
Fruits under glass ... 610
Gardeners' benefit societies 618
ardeners, more, than gardens 618
Gardening appointments 626
Gladiolus Gandavensis hybrids of 618
Hardy fruit garden ... 614
Imperial Institute ... 613
Irises, some new 611
Irish garden, an ... 605
Kew 612
Kitchen garden, the ... 615
Laing, Messrs. J. & Co.'s nursery 607
Natal to the Transvaal... 610
Orchid sale at Downside 613
Orchids at Mr. Bull's ... 607
Odontoglossum + hinnus 606
,, Pescatorei leucoxanthum ... 606
Phalænopsis Rothschildiana 606
Phloxes 618
Societies:—
Leek Auricula 620
Scottish Auricula ... 619
Strawberry cultivation in pots 616
Trade announcements ... 614
Trees and shrubs ... 620
Vines, red-spider on ... 620
Weather 620
,, in Lancashire ... 618

ILLUSTRATIONS.

Berberis Bealei 608
,, japonica 617
,, Wallichiana... 609
Cyclamen, crested, a 619
Natal, views in. (See Supplement.)
Odontoglossum Pescatorei leucoxanthum 606

ROYAL HORTICULTURAL SOCIETY,
South Kensington, S.W.
NOTICE!—COMMITTEE MEETINGS: Scientific at 1 P.M., in the Lindley Library; Fruit and Floral, at 11 A.M., and Narcissus at 12 noon, in the Conservatory, on TUESDAY NEXT, May 10. Admission free to Fellows at 12 o'Clock; and to the Public at 1 o'Clock, upon payment of 1s.
N.B.—Entrances, N.E. Orchard House, Exhibition Road; and Exhibitors' Entrance, east side of Royal Albert Hall.

ROYAL BOTANIC SOCIETY of LONDON.
Gardens, Regent's Park.
FIRST SUMMER EXHIBITION of PLANTS and FLOWERS, WEDNESDAY, May 18.
Schedules of Prizes now ready.
Entries close on SATURDAY, May 14.

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GREAT FLOWER SHOW of the SEASON.
SATURDAY. May 21.
Schedules and Entry Forms on application to
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Secretary's Office: 96, St. James' Street,
Brighton, March 28, 1887.

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In connection with the SUMMER SHOW of the
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LAING'S BEGONIA SEED.—Awarded Two Gold Medals. In sealed packets. Unequalled quality. Saved from prize plants. Choicest mixed, Single varieties, 1s., 2s. 6d., and 5s. per packet. Collections, 12 named single varieties, separate, 5s. 6d.; 6 ditto, 3s. Choicest mixed double varieties, 2s. 6d., 3s. 6d., and 5s. per packet. Post-free. Order direct from us to procure the genuine seed.
JOHN LAING AND CO., Seedsmen, Forest Hill, S.E.

CHRYSANTHEMUMS, 550 varieties, true to name, strong Cuttings; buyers' selection, 1s. 6d. per dozen, 10s. per 100; Plants, 2s. 6d. per dozen, 16s. per 100. For price of new sorts see CATALOGUE. Many of the largest growers are supplied, and many of the best prizes in the county have been taken from plants and cuttings supplied by me. Catalogue, two stamps, of
WM. ETHERINGTON, Chrysanthemum Grower, Swanscombe, Kent.

HOLLYHOCKS.—We are again in a position to offer finest named varieties, strong, healthy plants, at 18s., 24s., and 30s. per dozen. Early orders solicited. Our CATALOGUE of Florists' Flowers for 1887 is now issued. It is admitted by all to be the Premier Scotch List. Send for a copy.
R. B. LAIRD AND SONS (late Downie & Laird), Nurserymen, Edinburgh.

EIGHTY THOUSAND CLEMATIS, in Pots, of all the finest Double and Single Varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants; extra strong plants repotted into 5½-inch pots, 2s. 6d. each. Descriptive LIST on application.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

LEEKS—LEEKS—LEEKS.—Cuthbertson's strain gained First Prizes for the last two years at the great Glasgow Shows, thus proving them the best in Scotland. 1s. per dozen, four dozen 3s., post-free, grand plants.
Three hundred ONIONS, autumn-sown, 5s. 6d., post-free; 150 for 3s.; consisting of Mammoth White, Red Bassano (true), and Giant Rocca; 500 White Lisbon, 2s. 6d.
100 CAULIFLOWER, extra strong plants, 3s. 6d. free.
MICHAEL CUTHBERTSON, Florist, Rothesay.

SEED POTATOS at Clearance Prices.—I am now allowing a large Discount off Catalogue Price for those sorts still in stock, also quoting special prices for many of the leading varieties.
My CATALOGUE is one of the most complete in the Trade. Send for it before ordering elsewhere.
JOHN WATKINS, Potato Grower, Pomona Farm, Withington, Hereford.

Mangel Wurzel and Turnip Seeds.
H. AND F. SHARPE are now prepared to make special offers of home-grown MANGEL WURZEL and TURNIP SEEDS, raised in 1886 from specially selected Bulbs. The quality is excellent and the prices are very low.
Seed Growing Establishment, Wisbech.

SALES BY AUCTION.

Esher.

CLEARANCE SALE, by order of the Executors of the late R. Few, Esq. Five minutes' walk from the Station.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, Wolsey Grange, Esher, on TUESDAY, May 10, at 1 o'Clock precisely, the whole of the well grown STOVE and GREENHOUSE PLANTS, EUCHARIS, HOYA CARNOSA, LAPAGERIAS, ANTHURIUMS, PALMS, in variety; 30 fine trained AZALEAS, GARDENIAS, DRACÆNAS, 300 CHRYSANTHEMUMS, 5000 BEDDING PLANTS, including 1000 Geraniums, of sorts; 11 Garden Frames, Hand Lights, Iron Tank, Garden Utensils, Loam, Terra Cotta Vases, and numerous other effects.

On view the day prior to Sale. Catalogues had of Mr. G. King, the Head Gardener on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C., and Leytonstone.

Wednesday Next.

LILIUM AURATUM and varieties of IRIS from Japan, African TUBEROSES, AZALEAS, CARNATIONS, PICOTEES, GREENHOUSE and BEDDING PLANTS.

MESSRS. PROTHEROE AND MORRIS will SELL the above at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on WEDNESDAY NEXT, May 11, at half-past 12 o'clock precisely.

On view morning of Sale, and Catalogues had.

Pewsey, Wilts.

By order of the Trustee under a Deed of Assignment.

IMPORTANT UNRESERVED SALE of the well known and valuable COLLECTION of EXHIBITION PLANTS (so successfully shown by Mr. J. F. Mould, at the principal London and Provincial Shows), STOVE and GREENHOUSE PLANTS, &c.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, The Nursery, Pewsey, Wilts, on THURSDAY, May 12, at 1 o'Clock precisely, the Valuable COLLECTION of EXHIBITION PLANTS, including fine examples of Rhododendrons, beautifully grown and trained; Azaleas, splendidly coloured specimens; Crotons of sorts; Allamandas, Ixoras, matchless plants of Ericas, fine plant of Kentia Forsteriana; other Palms in variety; a few Orchids, amongst which are several very large plants of Coelogyne cristata, large Roses, Stove, and Greenhouse Plants. The whole of the Outdoor NURSERY STOCK, consisting of large quantities of Pines, Firs, Larch, Conifers, Fruit Trees and Bushes; the stock of Seeds, two Greenhouses, Hot-water Piping, Utensils in Trade, and other Effects.

May be viewed two days prior to the Sale. Catalogues may be had of the Trustee, Mr. F. C. GOODCHILD, Secretary; the Nursery and Seed Trade Association, 25, Old Jewry, E.C.; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.; and Leytonstone.

Friday Next.

CATTLEYA MENDELII, a grand importation just to hand in splendid condition, including numerous very fine masses, many with perfect leaves; ODONTOGLOSSUM GRANDE, O. ALEXANDRÆ, the best type; LYCASTE SKINNERI, CATTLEYA MOSSIÆ.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Shuttleworth, Carder & Co. to include in their SALE on FRIDAY NEXT, May 13, the above ORCHIDS, which are in excellent condition; also a few choice ESTABLISHED ORCHIDS from a private collection.

On view morning of Sale, and Catalogues had.

Friday Next.

In liquidation. The New Plant and Bulb Company. Absolute Sale without reserve, by order of the Official Receiver.

The second portion of the valuable and well known collection of ESTABLISHED ORCHIDS.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from the Official Receiver to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, May 13, at half-past 12 o'Clock precisely, without the least reserve, the second portion of the valuable and extensive collection of ESTABLISHED ORCHIDS, including the following:—

The entire stock of the rare Masdevallia picturata, the only importation that reached Europe alive, fine forms of Cattleya superba from a cool district in Columbia; C. Lawrenceana, C. aurea, C. gigas, and C. aurea unflowered.

A fine plant of the grand Cattleya gigas Normanii, New seedling Cattleya, seedling Orchid with a growth of 6 inches in one year, rare Dendrobiums, Odontoglossum mulus, Wilckeanum hystrix, Cyroglossum, tripudians oculatum, cristatellum, and polyxanthum, Disa grandiflora superba, Cataschem from Venezuela, Epidendrum Stamfordianum, var. Wallacei, from Colombia, Odontoglossum Pescatorei, a fine marked variety; O. Pescatorei and Alexandræ, Oncidium præstans, rare Sarcochilus ceciliæ and S. divitiflora, Masdevallia Harryana, fine marked varieties; Odontoglossum excellens variety and other rare Orchids.

On view morning of Sale, and Catalogues had.

Tuesday, May 17.

Important Sale of ESTABLISHED ORCHIDS from the well-known Collection of C. Dorman, Esq., The Firs, Laurie Park, Sydenham.

The whole of the Lots will be sold without the least reserve, excepting a few special plants, and these will be offered subject to a very low upset price, which will be mentioned in the Catalogue.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from C. Dorman, Esq., to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY, May 17, at half-past 12 o'Clock precisely, 300 Lots of ESTABLISHED ORCHIDS, from his well-known collection, including the following:—

Cypripedium vexillarium	Cattleya exoniensis calummata
Lælia anceps Dawsoni	Epidendrum Wallisii
Maxillaria Sanderiana, fine plant, in bloom	Vanda Sanderiana
Dendrobium nobile nobilius	Oncidium lamelligerum
,, ,, Cooksoni	Cypripedium insigne Wallacei
Odontoglossum crispum aureum magnificum	Lælia Perrinii nivea
	Cattleya Wagneri
	,, Mossiæ Reineckiana

Cattleya Skinneri alba

On view morning of Sale, and Catalogues had.

Arle Court, Cheltenham.

A Collection of STOVE and GREENHOUSE PLANTS, including very fine specimens of Kentia Forsteriana, 6 feet by 8 feet; Latania borbonica, 12 feet by 20 feet; Crotons in variety, 16 splendid pans of Eucharis amazonica, a few Orchids, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, on the Premises, Arle Court, near Cheltenham, about 2½ miles from Cheltenham Railway Station, Midland Railway, on WEDNESDAY, May 18, at 1 o'Clock precisely, by order of T. P. Walter Butt, Esq.

May be viewed the day prior to the Sale. Admission by Catalogue only, obtainable on the Premises; and of the Auctioneers, 67 and 68, Cheapside, E.C., and Leytonstone.

Balham, S.W.

GREENHOUSE PLANTS, ORCHIDS, &c.

MESSRS. PROTHEROE AND MORRIS are instructed by E. R. Kesterton, Esq., who is leaving the neighbourhood, to SELL by AUCTION, on the Premises, Dudley House, Nightingale Lane, Balham, on THURSDAY, May 19, at 1 o'Clock precisely, without reserve, fine specimen FERNS, PALMS in variety, AZALEAS, a few choice ESTABLISHED ORCHIDS, including Cypripediums of sorts, 2 Vanda tricolor, with 40 and 22 leaves respectively; BEDDING PLANTS, GARDEN TOOLS and UTENSILS, HAND-LIGHTS, FRAMES, GARDEN ROLLER, LAWN MOWER, APOLLO TRICYCLE, and other EFFECTS.

May be viewed the day prior to Sale. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C., and Leytonstone, E.

Odontoglossum Harryanum.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from Mr. F. Sander to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY, May 20, at half-past 12 o'Clock precisely.

A superb importation of this magnificent new ORCHID, one of the finest Mr. Sander has ever been privileged to offer. The greatest care having been bestowed upon the plants both in packing and quick despatch, they have arrived in such grand order that when potted they will be nearly equal to established plants. The gigantic and numerous flower-spikes on the plants indicate that this species is extremely floriferous, apart from the wondrous beauty and indescribably rich and novel colouring of its large blossoms. It is evidently a free grower, having handsome ample arching foliage, with extremely diverse pseudobulbs, from which abundant variations and quite new forms may be expected.

The beautiful and brilliant colouring of this novelty is unrivalled, and it must be considered one of the grandest introductions of the century, taking rank with the noble Vanda Sanderiana, being quite as sensational, and in many points unique.

It is fully described by Professor REICHENBACH in the *Gardeners' Chronicle*, October 14, 1886, p. 486. Where he says:—"This is a grand and most unexpected surprise. The dimensions of the bulbs and flowers are those of a good Odontoglossum luteo-purpureum. Sepals rather broad, brownish with hieroglyphical transverse greenish-yellow lines, which later on become intensely yellow. The petals projecting straight forward with yellow recurved paints, which is quite characteristic. They are brown in the middle and have numerous mauve blotches and spots at the base on a white ground. The lip is rather similar in colour, white when newly expanded, afterwards turning to yellow, and marked with numerous mauve lines." A coloured drawing will be on view on day of Sale.

On view morning of Sale, and Catalogues had.

Wednesday Next.—(Sale No. 7414.)

Imported Brazilian, Colombian, and Burmese ORCHIDS, received direct.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, May 11, at Half-past 12 o'Clock precisely, a Consignment of ONCIDIUM UNDULATUM (true) and ODONTOGLOSSUM CRISPUM LEHMANNI, from Mr. F. C. Lehmann; a fine lot of ONCIDIUM DASYTILE, O. FORBESI, O. CRISPUM, some splendid pieces of LÆLIA PERRINII, CATTLEYA BICOLOR, C. GUTTATA, BRASSAVOLA NODOSA, and other Brazilian ORCHIDS; a consignment of VANDA CATHCARTII, DENDROBIUM NOBILE, D. FARMERI, D. DENSIFLORUM, D. FORMOSUM, CYMBIDIUM species, &c., from Burmah; a few established ORCHIDS, &c.

On view morning of Sale, and Catalogues had.

Thursday Next.—(No. 7415.)

VANDA CŒRULESCENS.
VANDA DENISONIANA.
CYPRIPEDIUM SANDERIANUM, Rchb. f.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, May 12, at half-past 12 o'Clock precisely, by order of Mr. F. Sander, a large and splendid consignment of the beautiful VANDA CŒRULESCENS, just received, including many unusually fine, well-shaped, and distinct looking plants. This chaste and showy Orchid is very floriferous, and produces in quantity on stout erect spikes its pretty mauve-blue flowers, with rich violet lips, which remain in perfection for several weeks. Also will be offered a suitable lot of the lovely white flowering VANDA DENISONIANA with fine green leaves, many broad and distinct looking. The flowers of this superb species are large, and from six to eight are produced on a spike. A rare and desirable Orchid, and one of the finest in cultivation.

At the same time will be offered a specially fine lot of CYPRIPEDIUM SANDERIANUM, well furnished with splendid green leaves, and many very broad. These invite special attention. C. Sanderianum is a most distinct and lovely species; certainly one of the most extraordinary and beautiful of the genus. The petals are broad at the base, 18 to 20 inches in length, of a reddish-purple colour, mottled with a lighter base, and the pouch is dark brownish-red. It is altogether a showy and fine new introduction. See Professor REICHENBACH's description in *Gardeners' Chronicle*, May 1, 1886, p. 554; also illustration in *Reichenbachia*, t. 3, part 1. It was awarded a First-class Certificate by the Royal Horticultural Society, September 21, 1886.

The Sale will also include a fine healthy lot of various Burmese DENDROBES, ONCIDIUM MARSHALLIANUM, MILTONIAS in variety, SACCOLABIUM BLUMEI, LÆLIA DAYANA, ONCIDIUM CONCOLOR, and other choice ORCHIDS.

On view morning of Sale, and Catalogues had.

Wednesday Next.—(Sale No. 7414.)

10,000 FREESIA REFRACTA ALBA, 350 HÆMANTHUS, of sorts; 1500 LACHENALIAS, 300 VALLOTA PURPUREA DISA GRANDIFLORA, 400 BABIANAS, and other BULBS and ROOTS, from the Cape; 5000 LILIUM AURATUM from Japan, &c.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden on WEDNESDAY NEXT, May 11.

On view morning of Sale, and Catalogues had.

Wednesday Next—(Sale No. 7413).

An immense assortment of choice named BORDER PLANTS, comprising CARNATIONS, PICOTEES, PINKS, HOLLYHOCKS, PANSIES, DAHLIAS, &c.; also Hardy Ornamental SHRUBS and CONIFERS, FRUIT TREES of sorts, 3000 GLADIOLI, LILIUMS, SPIRÆAS, &c.

MR. J. C. STEVENS will SELL the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, May 11, at half-past 12 o'Clock precisely.

On view morning of Sale, and Catalogues had.

Monday, May 23.

FLOWERING ORCHIDS.—SPECIAL SALE.

MESSRS. PROTHEROE AND MORRIS respectfully draw attention to the above. In consequence of Bank Holiday again interfering with their usual day on which this special monthly SALE is held, Messrs. P. & M. have been compelled to fix it for MONDAY, May 23, and give this early intimation that Gentlemen contemplating including Orchids, may make their arrangements accordingly.

67 and 68, Cheapside, London, E.C.

Special Sale of Orchids in Flower and Bud.

MR. J. C. STEVENS begs to announce that his next special SALE of ORCHIDS in FLOWER and BUD will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, May 18, and he will be glad if Gentlemen desirous of entering Plants for this Sale will send particulars not later than THURSDAY NEXT.

West Hatch, Chigwell, Essex.

About 1 mile from Woodford Station on the Great Eastern Railway.

To Orchid Fanciers, Growers, and Others.

NOTICE OF SALE of the whole contents of the mansion, including the equipment of thirteen Bedrooms, Dining-room appointments in solid Spanish Mahogany, the elegant appointments of the Drawing-rooms and Library, a fine collection of Oil Paintings, Water-colour Drawings, and a few Engravings, Bronzes, a Louis XVI. Clock, Chiming and other Clocks, rare collection of Dresden, Sèvres, Capo di Monti, Vienna, Oriental, and other China; a large collection of Ornaments, a valuable Library of Books, Silver and Plated articles, Glass, China and Effects; about 200 dozen choice Wines, Waggonette, Brougham, elegant Canoe-shaped Landau, seven Carriage and Saddle Horses, sets of Harness, a rick of prime Meadow Hay, Farm Horses, Carts, and Farm Implements; fifteen Pedigree Alderney Cows, Poultry, Gold and Silver Pheasants; together with **a very rare and choice collection of Greenhouse Ferns, Hothouse Plants, Orchids, Pines,** and Bedding-out Plants, Garden Tools, Lights, Seats, and a multiplicity of Effects.

MR. ROBERT FURBER has been favoured with instructions to SELL the above by AUCTION, on the Premises, on TUESDAY, May 10, and four following days, at 11 for 12 o'Clock each day.

May be viewed two days previous to Sale. Catalogues (1s. each) may be obtained of Messrs. FURBER, PRICE AND FURBER, Warwick Court, Gray's Inn, W.C.; and at the Auction, Land, and Estate Agency Offices, 22, Above Bar, Southampton.

Important Sale of the Woodlawn Collection of

Valuable PLANTS, comprising several thousands of choice Orchids, Nepenthes, Sarracenias, Eucharis, Lapagerias, Ericas, Azaleas, and a general assortment of grand Stove and Greenhouse productions, which include some of the most rare and finest specimens in the country.

MESSRS. ARTINGSTALL AND HIND beg to announce that they are favoured with instructions from Joseph Broome, Esq., who is leaving Woodlawn, situate at Didsbury, near Manchester, to SELL by AUCTION, at 12 o'Clock noon, on TUESDAY, WEDNESDAY, and THURSDAY, June 14, 15, and 16, in the grounds of the above-named residence, the whole of the exceptionally fine COLLECTION of PLANTS.

Catalogues, which are in course of preparation, will be issued fourteen days prior to Sale, when they may be obtained, together with further particulars, on application (personally, or by post) to Mr. ALFRED COLE, Head Gardener, or from the Auctioneers, 45, Princess Street, Manchester.

To Fruit and Flower Growers, Market

GARDENERS and OTHERS.

Surrey, 18 miles from London midway betwixt two stations, and in the midst of a district where there is a local demand.

TO BE LET on LEASE or SOLD IMMEDIATELY, owing to owner's ill-health, an excellent FRUIT GARDEN, well stocked, about 12 acres in extent (more or less Land could be had as desired), with numerous Glass Erections, including Vinery, Strawberry, and Tomato Houses, and several Pits. All heated.

Substantial brick-built 7-roomed Cottage, also Stabling, Cart-shed, Cow-shed and other Buildings, Fruit, Seed Potting and Washing Sheds. Terms of

WATERER AND SONS, Land Agents, Chertsey.

TO LET, at Peckham, a SMALL NURSERY with 6 span-roofed Houses, each 40 feet long, all heated with Hot-water Pipes; Ranges of Pits, also heated; two Furnaces, together with a 6-roomed Dwelling House. Within 3 miles of Covent Garden Market. Can be had on lease of agreement at low rent of £55 per annum; stock about £50. Present occupier leaving solely through ill-health. Immediate possession can be had.

Apply, J. MILES, Clayton Nursery, High Street, Peckham, S.E

Hampton, Middlesex.

TO BE LET, a pretty COTTAGE RESIDENCE, with an Acre of Garden in productive condition, a short distance from railway station and River Thames. Contains six rooms. Would suit Florist. To a responsible tenant rent £25 per annum. Worth more. Letters only.
L. A., 48, Maida Vale, London, W.

PUBLIC SALE OF PLANTS

BELONGING TO THE

COMPAGNIE CONTINENTALE D'HORTICULTURE, 52, Rue de Chame, and 56, Coupure, Ghent, Belgium.
(In Liquidation.)

This Sale is without precedent as regards importance in Horticultural Industry.

Monday, May 16, and following days,
At 9 o'Clock A.M., and 3 o'Clock P.M., punctually.
By Mr. G. DROESBEKE VAN DER HEYDEN,
Auctioneer, Ghent.

Order of Sale.

MONDAY, May 16.—FINE SPECIMEN AZALEAS, and young Azaleas, in quantity.
TUESDAY, May 17.—FINE SPECIMEN CAMELLIAS and young Azaleas, in quantity.
WEDNESDAY, May 18.—The celebrated Collection SPECIMEN and HALF-SPECIMEN PALMS, rare and new species of Palms; also examples suitable for the Winter Garden and room decoration, &c.
FRIDAY, May 20.—DECORATIVE PLANTS in variety, and (as specimens) FERNS, CYCADS, large PHORMIUMS, FURNISHING PLANTS, &c.
SATURDAY, May 21.—FINE SPECIMEN PALMS, TREE FERNS, and DECORATIVE PLANTS of incomparable vigour and beauty. PLANTS for the WINTER GARDEN, DRACÆNA LINDENI, CALADIUMS, and various Stove Plants.
MONDAY, May 23.—AROIDS, VARIEGATED PLANTS, ENTIRE STOCK of NEW PLANTS, young Variegated Plants, BROMELIADS, &c.
TUESDAY, May 24.—YOUNG PALMS, Decorative, Rare, or New Species, in large quantities; Specimen and young NEPENTHES.
WEDNESDAY and THURSDAY, May 25 and 26.—Do., do., do.
FRIDAY, May 27.—ORCHIDS (the fashionable plants), New and Rare Plants, Collections, &c.
SATURDAY, May 28.—ORCHIDS and NEPENTHES, young and Specimen Plants.
MONDAY, May 30.—ORCHIDS, many new and rare species.
TUESDAY, May 31.—OFFICINAL PLANTS, TROPICAL FRUIT TREES, ORNAMENTAL PLANTS, &c.
WEDNESDAY, June 1.—MISCELLANEOUS.

☞ *If necessary the sale will be continued on the following days.*

NOTICE.—Amateurs and Nurserymen, &c., are invited to attend at this Sale. There will not be presented again for a long time such a chance of buying *at bargains* well cultivated Decorative or Exhibition Plants in such very rare specimens, or such fine Ornamental Plants for the Winter Garden or House Decoration.

The detailed CATALOGUE will be published on May 1, and sent free to any one desiring it. Applications to be made to the Company, or to Mr. G. DROESBEKE VAN DER HEYDEN.

WANTED,
LARGE PALMS, TREE FERNS,

AND OTHER

ORNAMENTAL FOLIAGED PLANTS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

Are at present prepared to give ORCHIDS, or OTHER PLANTS, IN EXCHANGE for large overgrown PALMS, TREE FERNS, and other Plants of a similar class. Those who wish to take advantage of this offer should send full particulars **AT ONCE**, as,

AFTER THE NEXT FEW DAYS,

the Company will have no use for such plants, the present use for them being quite an exceptional one.

The Company have an immense stock of ORCHIDS, both newly imported and established. They have also a grand stock of TEA ROSES, FERNS, GRAPE VINES, and STOVE and GREENHOUSE PLANTS.

CATALOGUE, with full particulars, on application to

THE VINEYARD & NURSERIES,
GARSTON, near LIVERPOOL.

Fifty Nurseries, Market Gardens, Florist and Seed
BUSINESSES to be DISPOSED OF.

MESSRS. PROTHEROE AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained, gratis, at
67 and 68, Cheapside, London, E.C.

Landscape Gardening.

H. F. MALLER (of the firm of B. Maller & Sons), late Pupil of the Crystal Palace School of Landscape Gardening, is prepared to FURNISH PLANS, or undertake any kind of the above work.—61, High Street, Lewisham.

FOR SALE, good strong CAULIFLOWER PLANTS, 1*s.* 6*d.* per 100; 10*s.* per 1000; package free for cash with order.
S. BIDE, Alma Nursery, Farnham, Surrey.

Special Offer.

ISAAC MATTHEWS AND SON have for Sale 500,000 RHODODENDRONS, varying in size from 4 to 6 inches up to 2 to 3 feet—Cunningham's White, Jacksoni, caucasicum, pictum, Seedling Hybrids, Hybrid ponticum, and named varieties; good bushy plants. HOLLIES, CONIFERS, FOREST TREES in large quantities; AUCUBAS, YEWS, and other Nursery Stock. CATALOGUES now ready, and may be had, gratis and post-free, on application to the Nurseries, Milton, Stoke-on-Trent.
Our Nurseries are 110 acres.

Pteris Mayii.

H. B. MAY offers well-furnished Plants of the above, which is one of the greatest novelties of the season. For decorative purposes it has no rival, and has been awarded First-class Certificates by the Royal Horticultural and Royal Botanic Societies. 1*s.* 6*d.* and 2*s.* 6*d.* each. Trade price on application.
Dyson's Lane Nursery, Upper Edmonton.

A. O. SHALDERS, Oaklands, Bradford, offers the following ERICAS for sale:—
1 E. RETORTA MAJOR, specimen, 4½ feet diameter.
1 E. MARNOCKIANA, specimen, 4 feet.
1 E. LINDLEYANA, specimen, 4 feet (in flower.)
1 E. PROFUSA, half specimen. All in fine healthy condition.

Carriage Paid and Packing Free.

A. M. C. JONGKINDT CONINCK, Tottenham Nurseries, Dedemsvaart, near Zwolle, Netherlands.

CONIFERÆ, Cuttings and Grafts from Autumn 1885, 14*s.* per 100; £5 per 1000, in the following sorts:—

Cupressus Lawsoni albo-spica	Retinospora plumosa
,, ,, argentea	,, ,, argenteo var.
,, ,, argenteo var.	,, ,, aurea
,, ,, elegantissima	,, squarrosa Veitchi
,, ,, erecta viridis	Taxus elegantissima variegata
,, ,, Fraseri	,, hibernica
,, ,, lutea	,, ,, variegata
,, ,, Smithi	Thuia Ellwangeriana
,, ,, stricta glauca	,, Vervaeneana
Retinospora filifera	Thuiopsis borealis
,, ,, gracilis	,, ,, nana compacta
,, pisifera	,, ,, viridis
,, ,, aurea	,, dolabrata

NEW or RARE CONIFERÆ Cuttings and Grafts from Autumn, 1885, £1 per 100; £7 10*s.* per 1000, in the following sorts:—

Cupressus Lawsoni compacta gracilis	Cupressus Lawsoni robusta
,, ,, erecta alba	,, ,, Silver Queen
,, ,, globosa	Retinospora obtusa compacta nana
,, ,, intertexta	Thuia occidentalis lutea [var.
,, ,, nana argenteo var.	Thuiopsis borealis argenteo

KELWAY & SON.

Now is the time to plant
KELWAY'S GLADIOLI,
KELWAY'S PYRETHRUMS,
KELWAY'S GAILLARDIAS.
CATALOGUES Gratis.
LANGPORT, SOMERSET.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

DONATIONS & COLLECTIONS

already promised or sent towards the

JUBILEE FUND OF 1887:—

The DUKE of WESTMINSTER, K.G.	£50	0
Lord REVELSTOKE	26	5
Baron SCHRODER	31	10
JAMES HUGHES, Esq.	21	0
JAMES McINTOSH, Esq.	31	10
HARRY J. VEITCH, Esq., Treasurer	31	10
N. N. SHERWOOD, Esq. (Messrs. Hurst & Son) ...	21	0
Mrs. W. GIBBS, Bristol	2	10
GEORGE ANDERSON, Esq., Sydney	5	5
A FRIEND	10	10
EDWD. KEMP, Esq., Birkenhead	1	1
ROB. JORDAN, Llanaway Gardens	1	1
W. SWANSBOROUGH, Glasslough Gardens	0	10

Grand New Bedding and Winter-flowering

ZONAL GERANIUM
"HER MAJESTY."

Deep brilliant scarlet flower, of good size and substance, produced remarkably free over a dark green zonate foliage; the habit is dwarf and branching, and very compact. Is a good bedder and winter-flowering plant. The effect is remarkable for its dazzling scarlet masses of fine flowers; every one who has seen it is struck with its fiery colour.
1*s.* each, or 9*s.* per dozen; 60*s.* per 100.
Good strong plants.
CHAS. BURLEY, Nurseries, Brentwood.

JOSIAH H. BATH offers the following varieties of SEED POTATOS:—

Rivers' Royal Ashleaf	Dalmahoy
Myatt's Prolific Do.	Early Don
Old Ashleaf	,, Bog
Early Shaw	York Regent
,, Goodrich	Scotch Do.
,, Rose	Dunbar Do.
Imperator	Fluke
Beauty of Hebron	Paterson's Victoria
White Elephant	Snowflake
Schoolmaster	Scotch Champion,

And other leading varieties. Prices upon application.
1 and 3, York Street, Borough Market, S.E.

25 FANCY PANSIES for 5*s.* 6*d.*, post-free, consisting of the following grand competition and decorative varieties:—A. Stevens, A. Ashcroft, A. Glendinning, B. Campbell, E. Dalglish, F. M. Outram, Gold-digger, J. Clelland, J. Sutherland, J. W. Cameron, R. Brodie, Mrs. Paisley, Mrs. Barrie, Mrs. Findlay, Mrs. Goodwin, Mrs. G. P. Frame, Mrs. McIntosh, Mrs. Pattison, Miss Roy, Miss Biggar, Mrs. Blair, Perfection, Rev. J. Graham, Silver Wings, and Wm. Stewart. The above is rare value. 50 varieties, including the above, for 10*s.*; 12 Exhibition VIOLAS, 2*s.* 6*d.*; 50 for 7*s.* 6*d.*; 100 for 12*s.* 6*d*, from the best Collection in Scotland.
M. CUTHBERTSON, Pansy Grower, Rothesay.

Cheap Bedding Plants—Special Offer.

WILLIAM BADMAN offers as under, from Store-pots, all well-rooted, and fit for present potting. The present is a good time for making up losses sustained during the winter:—

VERBENAS, Purple, White, Scarlet, Crimson, Rose, 6*s.* per 100, 50*s.* per 1000; 12 choice named varieties, 8*s.* per 100.
LOBELIA Bluestone, pumila magnifica, true, from Cuttings, 2*s.* 6*d.* per 100, 20*s.* per 1000; Brighton Blue, fine, 3*s.* per 100, 21*s.* per 1000.
CALCEOLARIA Golden Gem, 5*s.* per 100, 40*s.* per 1000; Camden Hero, fine dark, 6*s.* per 100.
HELIOTROPE Jaun d'Amour, Miss Nightingale, dark, 6*s.* per 100, 50*s.* per 1000.
AGERATUM Imperial Dwarf, blue, 5*s.* per 100, 40*s.* per 1000.
COLEUS VERSCHAFFELTI, bedding crimson, 6*s.* per 100, 50*s.* per 1000.
IRESINE LINDENI, dark crimson, good bedder, 6*s.* per 100, 50*s.* per 1000.
PELARGONIUM Vesuvius, finest bedding scarlet, 8*s.* per 100, 75*s.* per 1000; Master Christine, 12*s.* per 100; Mrs. Levers and Jenny Dodds, fine pink, 10*s.* per 100; Henry Jacoby, best crimson, 12*s.* per 100.; Madame Vaucher, white, 12*s.* per 100; Queen of Belgians, finest white, 3*s.* per dozen, 20*s.* per 100; Niphetos, bedding white, 12*s.* per 100; Waltham Seedling, Lucius, Jean Sisley, and White Vesuvius, 10*s.* per 100.
SILVER VARIEGATED May Queen (Turner's), Princess Alexandra, Flower of Spring, 12*s.* per 100; Little Trot, dwarf, 12*s.* per 100; Prince Silverwings, 10*s.* per 100.
GOLD-LEAF Crystal Palace Gem, 10*s.* per 100; Happy Thought, 12*s.* per 100.
BRONZE McMahon, Black Douglas, The Czar, the best bedders, 15*s.* per 100.
TRICOLOR Mrs. Pollock, 15*s.* per 100; Sophie Dumaresque, Lady Cullum, Sir R. Napier, 18*s.* per 100.
DOUBLES, F. V. Raspail, fine scarlet; M. Thibaut, pink; M. Baltet, best white, 12*s.* per 100.
TROPÆOLUM Vesuvius, 8*s.* per 100; coccinea elegans, best dwarf scarlet, 10*s.* per 100.
FUCHSIAS in twelve good named sorts, 8*s.* per 100.
PELARGONIUMS, Show and Decorative, from single pots, good, 20*s.* per 100, 3*s.* per dozen.
NOTE.—Not fewer than twenty-five of any one sort supplied at above rate. Packing included. Terms Cash.
Cemetery Nurseries, Gravesend, S.E.

CABBAGE PLANTS.—Very fine autumn sown Enfield Market, Wheeler's Imperial and Robinson's Champion, 3*s.* 6*d.* per 1000, 30*s.* per 10,000, on rail; sample 100, 1*s.* 6*d.* free. Aigburth BRUSSELS SPROUTS, Green KALE, Golden Globe and Norwegian SAVOY, Tripoli ONIONS, Cabbage LETTUCE, and Purple BROCCOLI, 5*s.* per 1000, 45*s.* per 10,000, on rail; sample 100, 1*s.* 6*d.* free. Spring sown from cold frames. Early London CAULIFLOWER, 7*s.* 6*d.* per 1000, on rail; 1*s.* per 100 free. Red and White CELERY 8*d.* per 100, free; TOMATOS, 6*d.* per dozen, 3*s.* 6*d.* per 100, free; Telegraph CUCUMBER, 3 for 1*s.*, free; VEGETABLE MARROW, 4 for 1*s.*, free. Cash with order.
EDWARD LEIGH, Cranleigh, Surrey.

CLEARANCE SALE of healthy PALMS for Table and Conservatory Decoration.—LATANIA BORBONICA, SEAFORTHIA ELEGANS, and PHŒNIX RECLINATA, 12 inches high, 6*d.* each, 4*s.* per dozen, 25*s.* per 100; same kinds, 20 inches high, 1*s.* 6*d.* each, 6 for 8*s.*, 12 for 14*s.* Packages and parcels post-free.
COCOS WEDDELLIANA, ARECA LUTESCENS, and EUTERPE EDULIS, 2*s.* to 5*s.* each; KENTIAS, 4*s.* to 10*s.* each; large PALMS, 3 feet to 6 feet high, 5*s.* to 50*s.* each. All of splendid value.
GARDENER, Holly Lodge, Stamford Hill, London, N.

BEGONIAS A SPECIALTY.—LAING'S BEGONIA TUBERS. Awarded Two Gold Medals. Unequalled quality. Named Singles, from 18*s.* to 42*s.* per dozen; unnamed seedlings, selected to colour, for pots, 12*s.*, 18*s.* and 21*s.* per doz.; bedding, selected to colour, 9*s.* per dozen; bedding, choicest mixed colours, 6*s.* per dozen; choicest named Doubles, from 42*s.* per dozen; unnamed, very choice selected, 24*s.* and 30*s.* per dozen; choicest mixed, 18*s.* per dozen. CATALOGUES gratis.
JOHN LAING AND CO. Nurseries, Forest Hill, S.E.

FREESIA REFRACTA ALBA.

Fresh arrival of BULBS (in splendid condition) of this lovely fragrant Cape flower. Beautiful waxy white. Adapted for cold greenhouse or frame.

Price, 12s. 6d. per 100, 2s. per dozen.

Trade Price on application.

HOOPER & CO. (Limited), Covent Garden, London, W.C.

NEW CATALOGUE.

MY CATALOGUE has for years been acknowledged by all competent authorities to be THE BEST AND MOST COMPLETE ever published on FLORISTS' FLOWERS.

My NEW ISSUE for 1887—which, like the stock it represents, is this season GREATLY ENLARGED AND IMPROVED—is now ready, and will be posted free on application to all intending purchasers.

It is replete with the best Novelties of the season, and will be found to accurately describe all the BEST varieties EXTANT of PANSIES, VIOLAS, PHLOXES, PENTSTEMONS, ANTIRRHINUMS, HOLLYHOCKS, CARNATIONS, PINKS, PYRETHRUMS, DELPHINIUMS, POTENTILLAS, PÆONIAS, AURICULAS, DAHLIAS, PELARGONIUMS, FUCHSIAS, BEGONIAS, PERENNIALS, &c. All should possess a copy before buying elsewhere, as it not only effects a saving in the first instance, but will also prove a valuable reference book on all sections of FLORISTS' FLOWERS and their varieties.

JOHN FORBES, Nurseryman, Hawick, N.B.

SELECTED MANGEL, SWEDE, and TURNIP SEEDS.

CHARLES SHARPE & CO.,

Seed Growers, Sleaford, Lincolnshire,

will be glad to send to the Trade, on application, Special Quotations, of their Celebrated Stocks of Field Root Seeds, now so widely known and appreciated.

SEED WAREHOUSE, SLEAFORD.

ROSES IN POTS;

all the best New and Old English and Foreign sorts, from 18*s.* to 36*s.* per dozen.

Descriptive List free on application.

RICHARD SMITH & CO.,
WORCESTER.

FERNS A SPECIALTY.

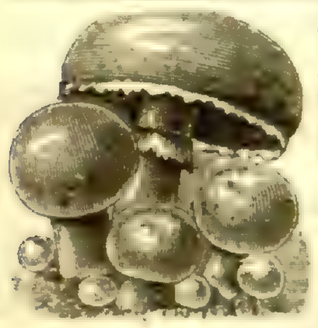
An IMMENSE STOCK, in SPLENDID CONDITION.

ILLUSTRATED CATALOGUE, containing "Hints on Fern Cultivation," 1*s.*

SMALLER CATALOGUE, of over 1300 species and varieties, including Descriptive "List of New, Rare, and Choice Ferns," and "Hardy North American Ferns," free on application.

W. & J. BIRKENHEAD,

FERN NURSERY, SALE, MANCHESTER.



CUTBUSH'S MILL-TRACK MUSHROOM SPAWN.—Too well known to require description. Price, 6*s.* per bushel (1*s.* extra per bushel for package), or 6*d.* per cake; free by parcel post, 1*s.*

None genuine unless in sealed packages and printed cultural directions enclosed, with our signature attached.

WM. CUTBUSH AND SON (Limited), Nurserymen and Seed Merchants, Highgate Nurseries, N.

Come and See.

OUR CALCEOLARIAS.

Our 100-feet House of these is now said to be the GRANDEST SIGHT and the MOST PERFECT ever seen. ALL SPECIALLY FOR SEEDING.

CARTERS'

HOLBORN PRIZE

AWARDED

Silver Banksian Medal, Royal Hort. Society, 1887
The Highest Prize Medal, Ceylon 1885
First Prize, open to England, Crystal Palace, 1884
Banksian Prize Medal, Royal Hort. Society, 1883

PRIMULA.

"Messrs. Carter have long been pioneers in the improvement of Primulas, and have achieved marked success."—Vide Press.

IN SEALED PACKETS, all Colours Mixed—

Price, **1/6, 2/6,** and **3/6** per packet,
POST-FREE.

Seedsmen by Special Warrants to H.M. the Queen and H.R.H. the Prince of Wales,

237, 238, HIGH HOLBORN, LONDON

THE FINEST TIME IN ALL THE YEAR

To Plant—CONIFERS,
HOLLIES,
LAURELS,
AND ALL EVERGREENS.

The Raiser also advises to plant at once

CLEMATIS WHITE JACKMANNI (Noble).

Ask for a CATALOGUE. **CHARLES NOBLE, Bagshot.**

100,000 hardy HEATHS.

The present is a most suitable time for planting these beautiful plants.

100 HEATHS, selected, in 10 varieties, price						16*s.*
100	,,	,,	,, 20	,,	,,	18*s.*
100	,,	,,	,, 30	,,	,,	20*s.*
100	,,	,,	,, 40	,,	,,	22*s.*

If less than 50 plants are ordered, price 3*s.* per dozen.
Special quotations per 1000 can be had on application.
GENTIANELLA (Gentiana acaulis), nice clumps, 12*s.* per 100, £5 per 1000.

JAMES SMITH & SONS,
DARLEY DALE NURSERIES, near MATLOCK.

PEARL AMERICAN TUBEROSES.

A large consignment just to hand in splendid condition. If planted now will come in for late autumn supply.
Trade price per 100 and 1000 on application.
Retail price, 3*s.* per dozen, 21*s.* per 100.

HOOPER & CO., LIMITED,
COVENT GARDEN, LONDON, W.C.

SPECIAL OFFER OF ORCHIDS.

See previous issue of April 30, 1887.

The undermentioned are all good established Plants, clean and healthy, and will be certain to give satisfaction. Better value cannot be obtained anywhere in the Trade.

C, Cool; I, Intermediate; S, Stove.

			Each.
C	Pilumna nobilis	4 to 5 bulbs,	5*s.*, 7*s.* 6*d.*
S	Saccolabium Blumei majus .	6 to 7 leaves	3*s.* 6*d.*, 5*s.*
S	curvifolium	6 to 7 ,,	5*s.*, 7*s.* 6*d.*
S	retusum	6 to 7 ,,	5*s.*, 7*s.* 6*d.*
S	Scuticaria Steeli	6 to 8 ,,	5*s.*, 7*s.* 6*d.*
C	Sophronitis grandiflora ...	6 to 7 bulbs,	3*s.* 6*d.*, 5*s.*
I	Stanhopea insigne	4 to 5 ,,	3*s.* 6*d.*, 5*s.*
I	Thunia Bensoni	2 to 3 ,,	5*s.*, 7*s.* 6*d.*
I	Trichopilia crispa marginata,	5 to 6 ,,	5*s.*, 7*s.* 6*d.*, 10*s.* 6*d.*
I	coccinea	5 to 6 ,,	3*s.* 6*d.*, 5*s.*
I	tortilis	6 to 7 ,,	3*s.* 6*d.*, 5*s.*
C	Trichosma suavis	6 to 7 leaves	5*s.*, 7*s.* 6*d.*
I	Vanda cœrulea	6 to 8 ,,	10*s.* 6*d.*, 15*s.*
C	Zygopetalum Mackayi ...	4 to 5 ,,	5*s.*, 7*s.* 6*d.*

GOOD ORCHID PEAT IS NEARLY EXTINCT.

I have pleasure in recommending to my customers a good light-brown Peat, full of fibre, which I believe to be the only good Peat in the market. At Ringwood I beg to quote the low price of 20*s.* per yard for 4-ton truckloads and upwards, free on rail. One bushel bag, 2*s.* 6*d.*; per sack, 5*s.* 6*d.*, carriage forward; and I invite customers and their friends to send for sample. Small quantities, 7 lb. in weight, free per post, for 2*s.*, containing about 1 peck of fibrous Peat, with all the dust shaken out, ready for use.

Improved Teak-wood Orchid Baskets, Rafts, &c.

Made in sets or separate sizes, fastened with Copper Pins, including Copper Hangers.

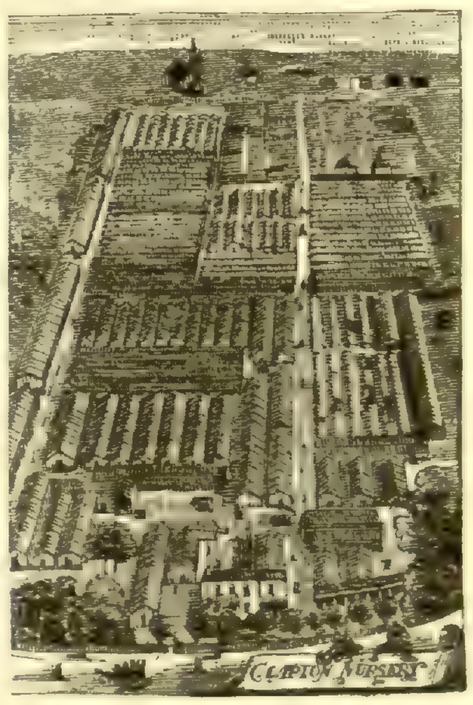
	Size.	Price.—*s.*	*d.*	
No. 1	3 inches	5	0	per dozen.
,, 2	4 ,, ...	5	9	,,
,, 3	5 ,, ...	7	3	,,
,, 4	6 ,, ...	8	0	,,
,, 5	7 ,, ...	10	0	,,
,, 6	8 ,, ...	12	0	,,
,, 7	9 ,, ...	14	0	,,
,, 8	10 ,, ...	17	0	,,
,, 9	12 ,, ...	23	6	,,

Sample Set of 5 as above, 5s. 6d., carriage paid. Any other size or pattern made to order.

Special form of Basket for the purpose of growing Orchids for show. Prices on application. Apply for Special LIST to

WM. GORDON,

PLANT IMPORTER, THE NURSERIES,
TWICKENHAM, MIDDLESEX.
Experienced Gardeners recommended.



ORCHIDS

a Specialty.

Stock Immense in extent, fine in quality, moderate in price. Inspection invited.

274,600 superficial feet of glass.

Hugh Low & Co., Clapton Nursery, London, E.; also Bush Hill Park Nursery, Enfield.

YEAR BOOK OF SEEDS

DAFFODILS in July

Seeds of Rare Perennials now

Little Book of Daffodils

Established in succession, 120 years
WM. BAYLOR HARTLAND, Cork.

ODONTOGLOSSUM HARRYANUM.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from Mr. F. SANDER to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY, May 20, at half-past 12 o'Clock precisely,

A SUPERB IMPORTATION OF THIS MAGNIFICENT NEW ORCHID,

One of the finest Mr. Sander has ever been privileged to offer.

The greatest care having been bestowed upon the plants, both in packing and quick despatch, they have arrived in such grand order that when potted they will be nearly equal to established plants. The gigantic and numerous flower-spikes on the plants indicate that this species is extremely floriferous, apart from the wondrous beauty and indescribably rich and novel colouring of its large blossoms. It is evidently a free grower, having handsome ample arching foliage, with extremely diverse pseudobulbs, from which abundant variations and quite new forms may be expected. The beautiful and brilliant colouring of this novelty is unrivalled, and it must be considered one of the grandest introductions of the century, taking rank with the noble Vanda Sanderiana, being quite as sensational, and in many points unique.

It is fully described by Professor REICHENBACH, in the *Gardeners' Chronicle*, October 14, 1886, p. 486, where he says:—"This is a grand and most unexpected surprise. The dimensions of the bulbs and flowers are those of a good Odontoglossum luteo-purpureum. Sepals rather broad, brownish with hieroglyphical transverse greenish-yellow lines, which later on becomes intensely yellow. The petals projecting straight forward with yellow recurved paints, which is quite characteristic. They are brown in the middle and have numerous mauve blotches and spots at the base on a white ground. The lip is rather similar in colour, white when newly expanded, afterwards turning to yellow, and marked with numerous mauve lines." A coloured drawing will be on view on day of Sale.

On view morning of Sale, and Catalogues had.

SPECIAL NOTICE.

GRAND JUBILEE EXHIBITION OF ORCHIDS,

STOVE and GREENHOUSE FLOWERING and FOLIAGE PLANTS.

Open to the Public from MAY 11 to JUNE 25, from 9 A.M. to 6 P.M. daily.

Admission FREE to those who have received Invitations, or upon Presentation of Card.

A LARGE SHOW-HOUSE, 100 feet long by 22 feet wide, is especially devoted to the ORCHID EXHIBITION, and visitors may rely upon seeing these beautiful Plants with the greatest degree of comfort; the ventilation, means of ingress and egress, as well as the great width of the paths being all that can be desired.

The LARGE WINTER GARDEN, 100 feet by 40 feet, and the other SHOW-HOUSES are gay with our large collections of STOVE and GREENHOUSE FLOWERING and FOLIAGE PLANTS, which have figured at the LEADING SHOWS, both at home and abroad, for many years with uninterrupted success.

☞ *This Exhibition was admitted to be, by all who saw it during the last two years, the largest and most varied the kind in London.*

B. S. WILLIAMS,

VICTORIA & PARADISE NURSERIES, UPPER HOLLOWAY, LONDON, N.

TEA ROSES.

Good plants, in 5-inch pots.

HER MAJESTY and W. F. BENNETT, 30*s.* per dozen.

SUNSET, GRACE DARLING, NIPHETOS, ISABELLA SPRUNT, DEVONIENSIS, Climbing DEVONIENSIS, MARECHAL NIEL, SAFRANOT, MADAME FALCOT, W. A. RICHARDSON, ETOILE DE LYON, &c. } 18*s.* per dozen.

A personal inspection invited.

JOHN STANDISH AND CO., Royal Nurseries, Ascot.

CHEAP BEDDING PLANTS.

GERANIUMS, Zonal, strong autumn-struck plants, from single pots—Vesuvius (scarlet), Jean Sisley, Dazzler (crimson), Master Christine, Madame Vaucher, Happy Thought, 2*s.* per dozen, 12*s.* per 100; Miss Tottie Hardy (rosy-salmon), Queen of Pinks (magenta), Stour Valley Beauty (peach), 3*s.* per dozen.

PELARGONIUMS, show and decorative, named, fine plants, from single pots, 3*s.* per dozen.

LOBELIA (true), from cuttings, Emperor William, 2*s.* 6*d.* per 100, 20*s* per 1000.

DAHLIAS, Single, named sorts, of all shades of brilliant colours, including White Queen and Paragon, 2*s.* 6*d.* per dozen, 18*s.* per 100, from single pots; Double, best named show varieties, 2*s.* 6*d.* per dozen, 18*s.* per 100, from single pots.

CHRYSANTHEMUMS, selection of finest named Show varieties, strong, and well-grown, 2*s.* 6*d.* per dozen, 18*s.* per 100, from single pots. Package free. Plants allowed for carriage. Terms cash. CATALOGUE gratis.

H. I. HARDY, Stour Valley Florist Grounds, Bures, Suffolk.

CREEPERS FOR WALLS, in Pots, can be moved at any time.—By planting what is suitable, an ugly object may easily and rapidly be made beautiful. Descriptive LIST and advice free.

RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Offer of a Large Stock of

PALMS and FOLIAGE PLANTS to the Trade.

15,000 KENTIA BALMOREANA and FORSTERIANA, 45*s.* to [80*s.* per 100.
3,000 COCOS WEDDELLIANA, 45*s.* per 100.
4,000 EUTERPE EDULIS, 32*s.* per 100.
1,000 PHŒNIX RUPICOLA, in 48's, at £7 10*s.* per 100.
1,500 PHŒNIX RUPICOLA, thumbs, 60*s.* per 100.
ADIANTUM FARLEYENSE, at 40*s.* per 100.
ASPARAGUS PLUMOSUS NANUS, strong, at 72*s.* per dozen.
ASPARAGUS PLUMOSUS NANUS, in 60's, at £6 per 100.

A fine stock of DRACÆNA LINDENI, a few grand exhibition plants; also DRACÆNA LINEATA (true), plants from 4 to 7 feet, well feathered and perfect specimens. Also a few strong LAPAGERIA ALBA.

WILLIAM ICETON, Putney Park Lane, S.W., also Flower Market, Covent Garden, Stands 129 and 130.

ASPARAGUS.—This delicious vegetable does not require half the expense often incurred. Strong roots, 2*s.* 6*d.* per 100; extra strong ditto, two years old, 3*s.* 6*d.* per 100; three years, 5*s.* per 100.

RICHARD SMITH AND CO., Worcester.

1887—DAHLIAS—1887

Present Season's Catalogue is now ready and may be had gratuitously upon application.

It is made up as follows:—

CACTUS, OR DECORATIVE DAHLIAS.

To this section I pay a very considerable amount of attention, and I am, in the present season's Catalogue offering some two dozen really first-class and showy varieties, perfectly distinct from the Shows and Fancies, and all, more or less, following the style of the well-known old Cactus variety, Juarezi. The new varieties of the present season are especially deserving of notice

POMPONS, OR BOUQUET DAHLIAS.

My collection of these is one of the most complete in the trade, consisting of about three dozen varieties of really first-class, distinct sorts, all invaluable for bedding and for cutting.

SHOW AND FANCY DAHLIAS.

My collection of these includes all the well-known old varieties, as well as the best of the new ones.

SINGLE DAHLIAS.

The collection is this year considerably improved by the addition of a dozen exceptionally choice new sorts, which are offered in this year's Catalogue for the first time. In addition to these my Catalogue comprises all the choicest of the varieties of previous years' introductions.

THOMAS S. WARE,

HALE FARM NURSERIES,

TOTTENHAM, LONDON.

CUT SPECIMEN FLOWERS

OF

BARR'S

BEAUTIFUL

DAFFODILS

BY POST.

In Spring we have numerous applications for these, but hitherto have been unable to attend to such; now, however, since the naming and arranging of our extensive Collection of Daffodils has been completed, we are prepared to send, on application, during April and May, Cut Specimens, correctly named, and carefully packed, at a charge of 3*s.* 6*d.* per dozen flowers (not less than one dozen). We estimate that this charge will cover all expense of postage, boxes, and labour, as we desire no profit in sending these flowers to the public, but are only desirous that these floral beauties should be more widely known. The flowers cannot be sent in bud, as this would prevent us proving our "Stocks," which is done annually; but they will be fresh, and packed so as to ensure their arriving in good condition.

DESCRIPTIVE CATALOGUE of BARR'S DAFFODILS free on application.

BARR & SON,

12 & 13, King St., Covent Garden, W.C.

COLLYER'S DRY CONCENTRATED PURE ORGANIC MANURE.—Send for Circular: remarkable Analysis. Pint packet, 9*d.*; quart packet, 1*s.* 6*d.*; 7 lb., 2*s.* 6*d.*; 1 cwt., 20*s.* All carriage free.

TOMATO PLANTS, "Sunny Bank," "Hackwood Park," "Bush," 2*s.* 6*d.* per dozen; "Jubilee," 5*s.* per dozen. MELON PEARS, splendid plants, 2*s.* 6*d.* each. MESEMBRYANTHEMUMS, from 5*s.* per dozen. HOLLYHOCKS, 2*s.* 6*d.* per doz. DAHLIAS, 2*s.* per dozen. Choice CARNATIONS, 6*s.* per doz.

Everything Carriage Free.

VICCARS COLLYER AND CO., Central Hall, Leicester.

Cocoa-nut Fibre Refuse, newly made.

C. PRINCE (late J. STEVENS & Co.), Greyhound Yard, and 153, High Street, Battersea. Great reduction. Truckload (2 tons), 17*s.* 6*d.*; in bags—20, 14*s.*; 40, 25*s.*, bags included. All Free on to Rail. Cash with orders as above.

NATIVE GUANO.—Price £3 10*s.* per ton in bags; lots under 10 cwt., 4*s.* per cwt. Sample bag (1 cwt.) sent, carriage paid, to any station in England on receipt of P.O. for 5*s.*

Extracts from *Eleventh Annual Collection of Reports*: NATIVE GUANO for POTATOS, VEGETABLES, and FRUIT TREES.—J. SMITH, hd. gr. to Hon. Earl of Rosebery, Mentmore. Used for Potatos, Peas, Lettuce, Onions, Turnips, Fruit Trees, &c. Results: Most satisfactory in every instance. C. J. WAITE, gr. to Col. Hon. W. P. Talbot, Glenhurst, Esher: Have a very high opinion of your Native Guano; it is safe, good, and cheap; used for all kitchen-garden crops with good results. (Gained 108 prizes in 1886 for Fruit, Vegetables, Flowers, &c., grown with it.) NATIVE GUANO for VINES, ROSES, STRAWBERRIES, &c. G. STONARD, Reigate: Used for Grapes, Peaches, Tomatos, Roses, Cucumbers, Violets, Peas, Celery, Chrysanthemums. Results: Well satisfied with it to everything I used it for. A. F. BARRON, Royal Horticultural Society, Chiswick: Without doubt a very valuable manure, and easy of application.

Orders to the NATIVE GUANO CO. (Limited), 29, New Bridge Street, Blackfriars, London, E.C., where Pamphlets of Testimonials may be obtained. Agents Wanted.

PEAT and SAND.—Light Brown PEAT for Nursery and Greenhouse Work, in four-ton trucks of 10 yards each, at 10*s.* per yard. In bags at 2*s.* 6*d.* per bag. Rhododendron and American Plant Beds, at 15*s.* per ton. Orchid Peat, 5*s.* per bag. Fresh SPHAGNUM, 7*s.* 6*d.* per bag. SILVER SAND, coarse or fine, 13*s.* per ton.

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PEAT, LOAM, SAND, &c.—Splendid Brown Fibrous PEAT (full of fibre), 9*s.* per yard; Yellow Fibrous LOAM (best in England), 10*s.* per ton; SILVER SAND (coarse and fine), 10*s.* per ton. Each in truckloads. COCOA-NUT FIBRE REFUSE, 20*s.* per large truckload. Send for List.

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POSTAL BOXES for Plants and Flowers; WREATH, CROSS and BOUQUET BOXES (light wood); PROPAGATING TRAYS for Sowing Seed, &c.; WOOD LABELS and STICKS. Cheapest and best. Sample and List, 6 stamps.—T. CASBON, Box Maker, Peterborough.

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THE ONLY

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WEED DESTROYER.

A NEW DISCOVERY.—The Cheapest, Best, and Most Effectual Preparation for Killing Weeds, Dandelions, Moss, &c., wherever they may exist.

NO DISTURBANCE OF GRAVEL.
SAVES LABOUR, TIME, AND MONEY.
SUPERSEDES ALL OTHER PREPARATIONS.

N.B.—If our Cuprolene fail to do its work effectually we will refund the money paid for same.

Prices, Carriage Paid to any Station.

4 galls., sufficient for	100 galls. of water	... £0	6	0
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16 ,, ,,	400 ,, ,,	... 1	2	0
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5 per Cent. Disct. for Cash; carriage paid on returns of 16 galls.
100 galls. will cover an area of about 50 yards × 50 yards.

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DEIGHTON & SMITH, Agricultural Chemists, BRIDGNORTH.

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TWO PRIZE MEDALS.

Quality, THE BEST in the Market. (All sacks included.)

PEAT, best brown fibrous ...	5*s.* per sack;	5 sacks for 22*s.* 6*d.*
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PEAT, extra selected Orchid	5*s.* 6*d.* ,,	5 sacks for 25*s.*
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PREPARED COMPOST, best		
LEAF MOULD, best only		
PEAT MOULD, ,,		
SILVER SAND, coarse, 1*s.* 6*d.* per bush., 14*s.* half ton, 24*s.* ton.		
RAFFIA FIBRE, best only	1*s.* per lb.	
TOBACCO CLOTH, finest imported ...	8*d.* lb., 28 lb. 18*s.*	
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	Tins.	7lb.	14lb.	28lb.	56lb. 1 cwt.
CHUBB'S "PERFECT" FERTILISER, the Best Food for all kinds of Plants, Flowers, Fruits, Vegetables, &c. ...	1/6	3/-	5/-	8/-	14/- 22/-
CRUSHED BONES, best quality	1/2	2/-	3/6	6/-	12/-
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COCOA-NUT FIBRE REFUSE (by Chubb's special process), sacks, 1*s.* each; 10 sacks, 9*s.*; 15 sacks, 13*s.*; 20 sacks, 17*s.*; 30 sacks, 25*s.*; 40 sacks, 30*s.* Truck-load, loose, free on rail, 25*s.* Limited quantities of G., special quality, granulated, in sacks only, 2*s.* each. Terms, strictly Cash with order.

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A dry powder, carefully manufactured by Mechi's process,

WHICH IS DISTINCT FROM ALL OTHERS.

The very best Manure for Roots, Grass, Potatos, Wheat, Barley, Oats, Turnips, Mangels, Fruit, Vegetables, Hops, &c.

DESTROYS WIREWORMS, SLUGS, INSECTS, and GRUBS.

35s. per Ton loose; 40s. per Ton in bags; 4s. per Cwt. in bag.

Delivered Free on Rail or Boat.

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4*d.* per bushel; 100 for 25*s.*; truck (loose, about 2 tons), 40*s.*; 4-bushel bags, 4*d.* each.

LIGHT BROWN FIBROUS PEAT, 5*s.* 6*d.* per sack; 5 sacks, 25*s.*; sacks, 4*d.* each

BLACK FIBROUS PEAT, 5*s.* per sack, 5 sacks, 22*s.*; sacks, 4*d.* each.

COARSE SILVER SAND, 1*s.* 9*d.* per bushel; 15*s.* per half ton; 26*s.* per ton, in 2-bushel bags, 4*d.* each.

YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1*s.* per bushel

SPHAGNUM MOSS, 8*s.* 6*d.* per sack.

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The Best Garden Manure.

In Tins, 2 lb., **1s.** *Larger quantities are charged less.*

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Universal Plant Food.—The most perfect stimulant for Pot Plants. Prices as above.

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To all Grubs, Aphis, Lice, Red Spider, Thrip, Mealy Bug, Caterpillars, &c., &c.

PERFECTLY HARMLESS to the Hands and Skin, but will cure Ringworm in Animals, and all Diseases produced by parasites.

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(SOLUBLE) INSECTICIDE

A combination of Hydrocarbon Oils, made soluble in Water, for Destroying ALL INSECTS & PARASITES that infest Trees and Plants, whether at the Roots or on the Foliage.

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A Treatise on FIR TREE OIL as an INSECTICIDE, its application to Plants and Animals, sent Post free on receipt of address, by the Manufacturer,

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Throws a fine spray 20 ft., and a jet 30 ft., with great force.

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PROCTOR AND RYLAND'S well-known

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Pure Ground Bone for Vines, Potting, &c.

10s. per bag of 1 cwt. on receipt of Postal Order.

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Is acknowledged to be the best for all kinds of CHOICE PLANTS, FERNS, HEATHS, &c.; and their

Specially Selected do. for Orchids,

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Every grain fertilizes because the Guano is perfectly pure. It is most economical, one part of Manure to 100 parts of soil being ample for garden use.

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Dr. Voelcker's analysis guaranteed. FISH-POTASH contains Ammonia, Phosphates and Potash in large proportions, which are the principal elements of fertilization.

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2-lb. Tins, 1s.; in Bags, 7 lbs., 2s.; 14 lbs., 4s.; 28 lbs., 6s. 6d.; 56 lbs., 10s. 6d.: 1 cwt., 16s.; 2 cwt., 30s., carriage paid. Special terms for larger quantities.

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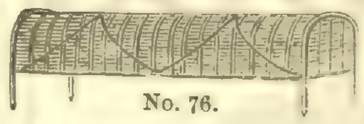

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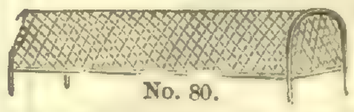

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Either pattern.
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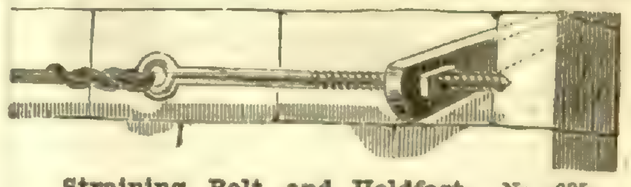

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As illustrated above, price 3s. 3d. per doz.
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Per doz. **2s.**

2 2½ 3 3½ inches.
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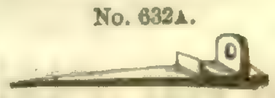

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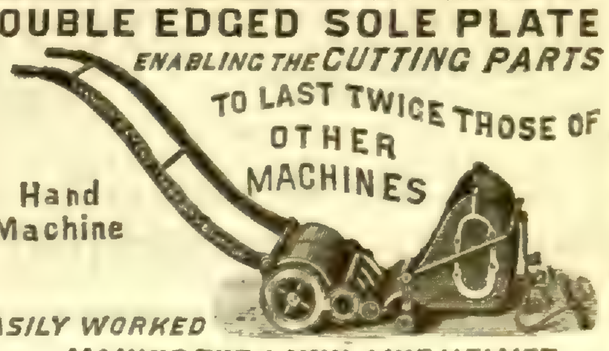

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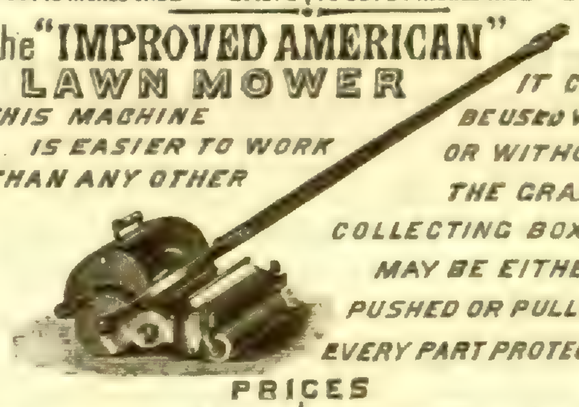

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6 INCH 25/-, 7 INCH 35/-, 8 INCH 45/-,

By Royal Warrants to H.M. the Queen and to H.R.H. Prince of Wales.

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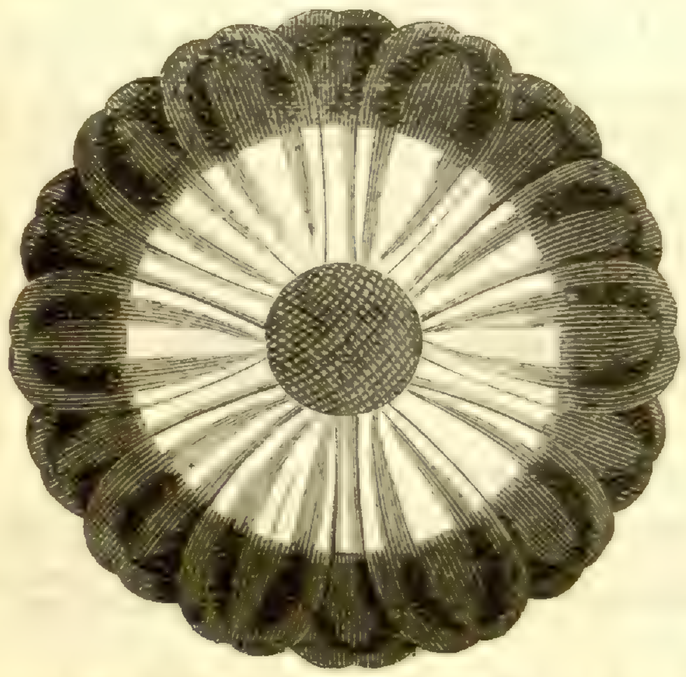

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1s. 6d., 2s. 6d., and 5s. per Packet.

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Per Packet, post-free.—	s.	d.		s.	d.
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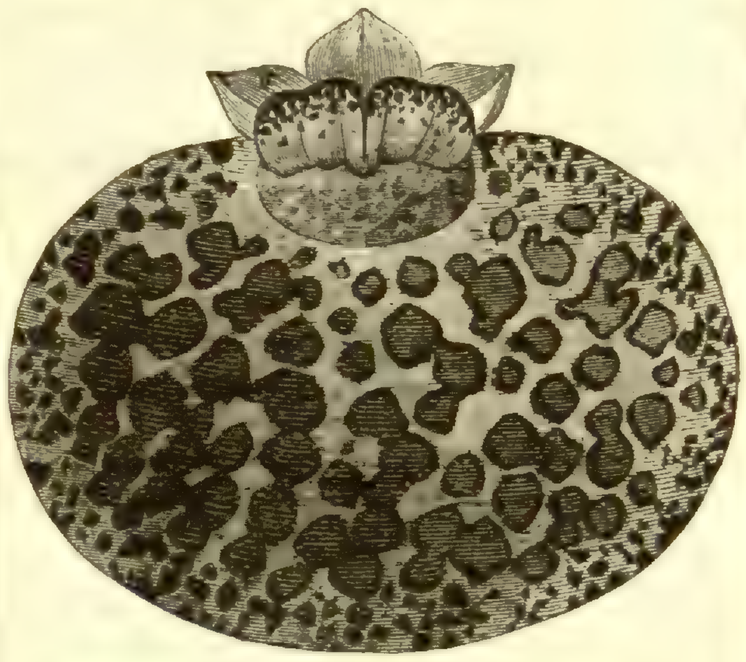

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THE

Gardeners' Chronicle.

SATURDAY, MAY 7, 1887.

AN IRISH GARDEN—A RETROSPECT.

MARCH 31.—How bright the garden is on this last day of March, notwithstanding all the frosts and snow, and bitter winds of the month! A few days of soft air and sunshine at its close have done wonders, and the blossoms are eagerly expanding. A row of Anemone fulgens is dazzling in the sunlight. One can never fully understand its whims; quite happy one year, in the very same spot it is discontented the next; and growing side by side, one plant will be most vigorous and its fellow poor and sickly. However, this year nearly all appear satisfied, and as a consequence the blossoms are larger than I have ever yet seen them, most of them measuring 4 inches across, and, with pale yellow Hyacinths coming up among them, are very beautiful.

Hyacinths, I find, do admirably when left in the ground from year to year. The individual flower-stems may not always be so fine (and yet I counted on one stem last year seventy blossoms), but they increase by offsets, which also bloom and this irregular grouping of the flower-stems is prettier than the stiff rows of single blossom-heads, though one can well enjoy their stately beauty the first year of planting. All are now at their early best with me, and the ground between being clothed with the close-lying leaves of Cyclamen hederæfolium, there is promise of an autumn harvest of bloom when this jacinth fairness of the springtide is past. All with the base of mottled leaves being shades of blue, they blend beautifully with Narcissus odorus, just opening beside them. Chionodoxa Luciliæ seems to become more vigorous each year, and the stems are now so tall and strong that they remain upright, only falling aside when the blossoms fade. On one stem I counted as many as twenty flowers this spring. At a distance it is more effective than the Scillas; the pure white, blending with the intense blue gives a radiance like the sky itself, which it so well pictures when fleecy clouds float across its azure depth. Mingled with the Chionodoxa Luciliæ are groups of Narcissus minor, which, flowering

freely at the same time, associate charmingly together.

Sisyrinchium grandiflorum has still some purple bells swaying in the breeze. It began to flower early in February, and ever since has kept up a succession of blossoms. If shrivelled up by a nipping blast then in a few days it would be re-clothed with fresh blossoms, which keep coming out of their dainty sheaths in quick succession.

Until this year I never knew how lasting and effective Primula cashmiriana was in early spring. Seedlings planted out in a cool border last June, grew apace with big leaves like those of a Dock, commenced flowering the end of February, and are now a mass of soft lilac. The frosts and snow showers of March in no way harmed them, and as each plant is well furnished with robust flower-stems they will be in bloom for a month to come.

Erica carnea is now in its deepest pink. During February the effect of a circle of Snowdrops inside the Heath, and just overtopping it, like a crown of snow set on the soft pink blossoms, was beautiful. This Heath is most valuable in the garden, remaing several months in bloom; and when out of flower its bright cheerful green is always pleasant to the eye.

The Lenten Rose.

These are at their best, and nowhere do they look so well as in the little wood, rising up from the fresh green grass. Not having room for them all in the garden—at least no sheltered spot to spare—I planted some in the wood last spring. Even if they never blossomed, there is an abandonment in their foliage which makes them eminently suited for the wild garden. I find Hellebore seedlings of the Niger division flower much sooner than I have anticipated. Of seeds sown in September, 1885, coming up in the following December and January, 1886, eight blossomed with me this past January, that is, a year and four months from time of sowing. The seeds were saved from flowers of angustifolius crossed with maximus and some of the fine new Bath varieties. Strange to say, all the stems seem mottled with brownish-red, none of the pale green of H. angustifolius, which marks the type so distinctly, as yet appearing. Of the blossoms, two were pure white, with green stigmas; the third white, with pink stigmas; and the rest with pink tinge on the outside of the petals, and pink stigmas. The remainder of the seedlings will no doubt flower next December, as they are now making strong growth.

The Daffodils.

April 14.—Our plants have been rather late in opening this year. Pallidus præcox was the first to expand toward the end of February, and after enduring all the severity of March, some of its blossoms are still fresh and fair, so that I do not find it at all a "flimsy flower" as some one lately called it. Since then all the Narcissus have been opening one by one, as the stars come forth in the evening twilight, till now they are scattered all around. N. Horsfieldi looks beautiful against the dark background of an Escallonia hedge, while scarlet Anemones sparkle in front, and lovely too in a bed by itself, with a deep border of mauve Aubrietia, through which not a green leaf is visible from the density of bloom. N. Emperor and Empress are in full beauty, and true monarchs of the race; N. odorus (Campernelle) and Primula cortusoides mingle charmingly together. The Primula seedlings were planted out last spring among groups of the Narcissus, whose golden blossoms now rise up from the soft fresh foliage of the Primula, and mix with its deep purple flower-heads.

Just now the white Fritillarias (Snake's-head) are most graceful, dangling in the wind. The bulbs are lifted every July, the ground stirred, some old manure placed at the bottom and replanted, and this treatment seems so much to their taste that the stems each bear from three to four flowers. An old blue china mug with these fair nodding blossoms among a cluster of Anemone fulgens, and a few shining leaves of the bronze Heuchera, is beside me as I write, and fair to see. The Giant Oxlips that have sent forth stray blossoms all the winter through, are now from a distance one soft haze of yellow, with here and there a deep-toned note of crimson. Drawing closer, one finds the harmony is composed of many tints, from orange, through varying shades of apricot, lemon, and cream, down to pure white.

Seed sown now will bloom well next spring, but if the seed is sown when ripe, wintered in a cold frame, and planted out in spring, time is gained, and the plants will often begin flowering in the autumn. The blossoms are so much finer from seedlings, that it is well worth while growing them every year, and discarding the old plants after the second year of flowering. With me the individual flower-heads of the young plants are most robust, bearing some twenty large blossoms, so that a few stems suffice to make a nosegay. Wallflowers are only just in bloom, and masses of the deep red beside the Oxlip enhance their fairness. *L. A. L.*

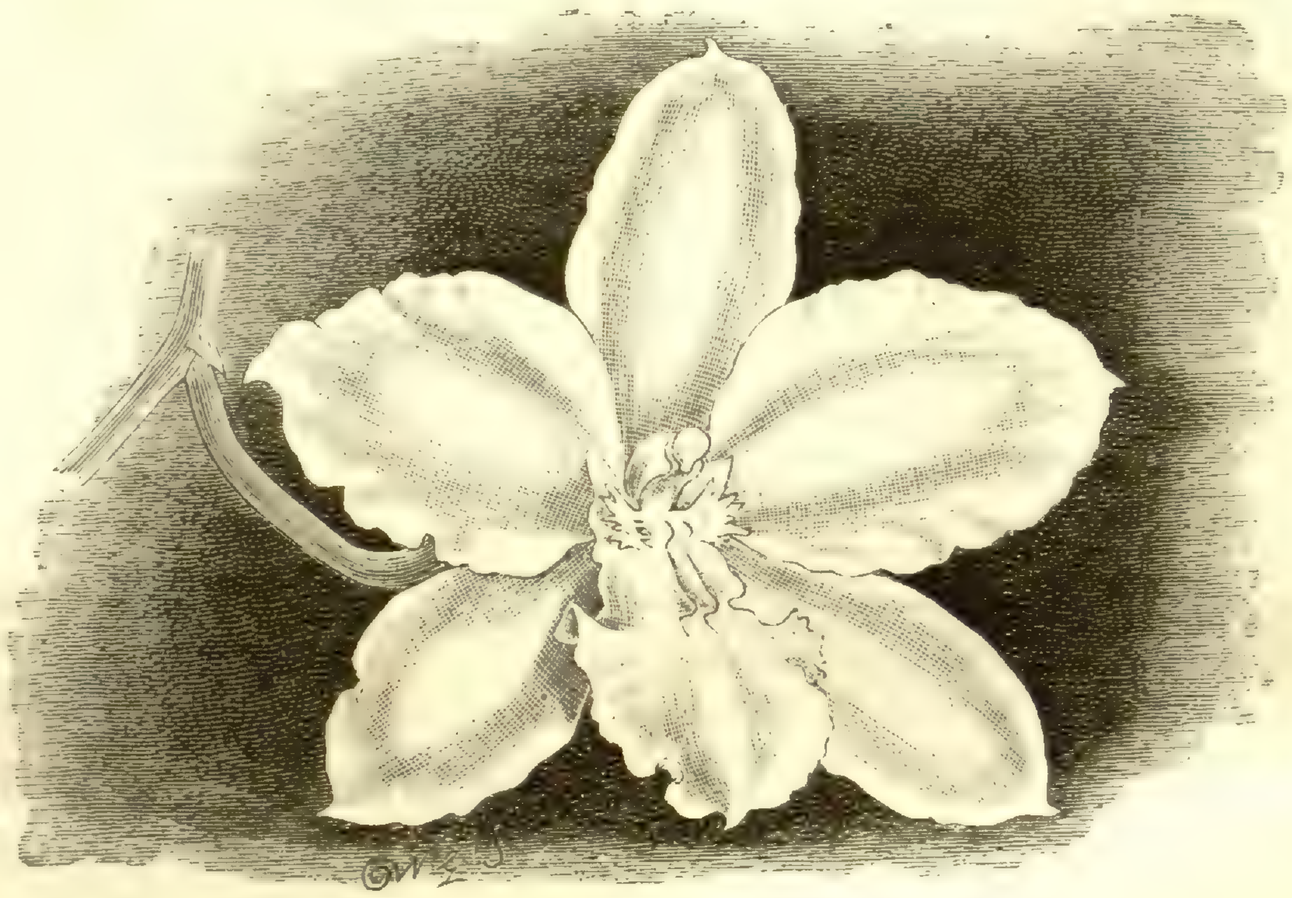

Fig. 114.—Odontoglossum pescatorei leucoxanthum.

Plants New or Noteworthy.

Odontoglossum pescatorei leucoxanthum, *n. var.*

A very remarkable form of Odontoglossum Pescatorei, with flowers of a pure white colour, excepting some orange on the crests of the lip, wings, and base of the column. I am indebted for it to the kindness of Baron von Schrœder [by whom it was recently shown at the Royal Horticultural Society, and to whom we are indebted for the opportunity of figuring it (fig. 114). Ed.]. *H. G. Rchb. f.*

Odontoglossum + hinnus, *Rchb. f.*

This curious plant has not come under my notice for a long time. At last it reappeared at Mr. Sander's, and has been transferred to Baron von Schrœder, who kindly sent me materials. It is remarkably spider-like in its flowers. The sepals and petals are narrow-lanceolate, undulate, yellow and cinnamon coloured. The narrow lip is yellow and cinnamon-coloured, acuminate from a rather narrow subhastate base. It is comparable to Odontoglossum elegans, which first appeared with Messrs. J. Veitch & Sons, then with Mr. Pollett and with Mr. Sander. Those correspondents favoured me with very rich panicles. It is quite a pleasure to see such fine specimens, which render the often difficult determination a pleasure. The lip is very broad over the stalk and suddenly narrowed. It seems as if it might be a cross between Odontoglossum Hallii and O. cirrosum. *H. G. Rchb. f.*

Phalænopsis Rothschildiana, *n. hyb., educ. in horto Veitchiana.*

This is the second case of a Phalænopsis having been raised by cross-fertilisation at the Royal Exotic Nursery of Messrs. J. Veitch & Sons—decidedly a great success. I do not say it helps us to understand presumed wild hybrids. Mr. Seden, the lucky and persevering grower got it from Phalænopsis Schilleriana and P. amabilis, Lindl. There can be no doubt, that between the herd of distinct things, one supposes to be hybrids, the same cross is represented, perhaps in various disguises. And this Sedenian product, though standing near Phalænopsis leucorrhoda, is not of that type. We must more and more believe that the crosses between the same species are often very distinct from a horticultural point of view. And the ways of horticulture and of severe science are as divaricate as those of the two patriarchs, whatever may be spoken or written to the contrary.

Mr. Harry Veitch kindly tells me the leaves have the shape of those of Phalænopsis amabilis, Lindl., but spotted like those of Phalænopsis Schilleriana. The longest leaf is said to be 3 inches long by 2 inches wide. The peduncle is remarkably light greenish-brown, perhaps in consequence of the dull foggy weather Mr. Veitch complains of.

The flowers are of the shape of those of Phalænopsis leucorrhoda. The sepals have a hue of sulphur-yellow; the lateral ones are spotted with purple at the lower part of the base. Petals large, much rounded, white. Side partitions of the lip cuneate, rounded,

yellow at the inferior outer margin, with numerous small purple spots. Mid partition rhombic hastate with diverging very well formed tendrils and a keel inside, in the mid-line, white, with a few red spots at the base and some orange marbling. The stalk of lip is white, with purple bars. The callus is saddle-like, very narrow, each shank irregularly unequally bidentate at the inner end, all orange with purple spots.

The very narrow callus, the keel on the anterior partition of the lip, and the colour, are the marks of distinction from Phalænopsis leucorrhoda. All that assembly of hybrids and supposed hybrids would make it easy for some ambitious writer to place all the tendril-bearing Phalænopsids together, admitting more than a dozen "varieties." Not to speak of the interests of truth, the system would neither answer the views of amateurs nor of those in the trade.

Mr. Harry Veitch proposed that this plant should be named in honour of Lord Rothschild, who for a long time (I remember the statements of our beloved late friend, Mr. J. G. Veitch) has been known as one of the most enthusiastic lovers and collectors of Phalænopsids, which I learn now are in an admirably good condition. *H. G. R. f.*

Dendrobium sulcatum (*Lindl.*) var. polyantha[1] *Rolfe, n. var.*

Dendrobium sulcatum was described by Dr Lindley in the *Botanical Register*, vol. xxiv., t. 65 from a plant which flowered at Chatsworth in April 1838. It was one of the species sent home in 1837 by Mr. John Gibson, who had been sent to India by the Duke of Devonshire in search of novelties for the Chatsworth collection, which about this time and in subsequent years became, under the care of Mr. (afterwards Sir Joseph) Paxton one of the most famous in the kingdom. Dr. Lindley there remarked:—"It is a fine species, nearly related to D. Griffithianum, from which it differs in its three-flowered peduncles, and in the form of the lip." It does not, however, appear to have become common in collections in this country, if, indeed, it has not been quite lost sight of. A plant, however, has been sent to Kew from the Calcutta Botanic Garden which clearly belongs to this species, though on flowering it has proved so far superior to Lindley's original as to bear fourteen instead of three flowers on a raceme. Looking at the plate above quoted one would at first be inclined to regard the Kew plant as distinct—the one being represented with three axillary three-flowered racemes on the pseudobulb, and oblong leaves an inch wide, the other having a dense globose raceme of fourteen flowers, and much broader ovate leaves. Yet the pseudobulbs are so absolutely identical, both in size and appearance, as well as in the shape and colour of the flowers, particularly the very characteristic markings on the lip, that I cannot but regard them as forms of the same species. Yet on account of the marked difference between the two I propose to call the present plant variety polyantha, in reference to its numerous flowers.

The following are the characters by which it may be distinguished:—Leaves ovate-oblong, acute, or shortly acuminate, seven-nerved, base subcordate, 3—4¼ inches long by 1¾—2¼ inches wide. Peduncle erect from upper axil, then arching over, raceme subglobose, about fourteen flowered. Other characters as in the species. It is certainly a very handsome variety, and I am told it has the curious habit of closing its flowers at night. A plate has been prepared for the *Botanical Magazine*. Like the species, it is of dwarf compact habit, growing about 9 inches high. The flowers are light buff-yellow, except the lip; this latter, which is very villose inside, is orange-coloured, with two small crimson blotches towards the base, which run out on either side into about nine to twelve radiating and branching nerves of the same colour, which anastomose just within the margin of the lip. D. sulcatum appears to be a rare species. The Kew Herbarium possesses but a single specimen, collected in Assam by Griffith, and authenticated by Lindley himself. It has no flowers, but the raceme bears about a dozen bracts, indicating that number of flowers. Lindley's plate was issued long before he saw this specimen, and the only representative of the species in his Herbarium is a copy of this plate. *R. A. Rolfe.*

The Flower Garden.

THE BEDS.

Although it is now too late to plant flower-beds effectively with spring flowers, it is the proper time to correct any errors that may be detected and make notes for the improvement of the next season's display. In most arrangements of flowers, space should be allotted to those sorts that bloom in the spring. In many gardens, there is scarcely a flower to be seen in the gardens from September to June, as if the blaze of colour which lasts for four months was sufficient recompense for eight dreary months of bare earth. It is a rare treat in these days of carpets, cushions, and glaring beds to see an old-fashioned garden with its hardy plants, some of which in shady situations will endure for months in flower. Where can we see the old Cabbage Rose? It has been elbowed out of most gardens by newer varieties, none of which have the perfume of that sort; and the beautiful old Scotch Rose, which is as hardy as any plant and so useful for covering trellis-work, is scarcely to be met with; without speaking of the dwarf Honeysuckles, Heaths, Daphnes, and whole hosts of perennials. Where spring bedding is carried out, the bedding season this year will be a late one on account of the winter occupants remaining so long in flower. Hyacinths and Tulips are just at their best, while Pansies and Violas are only coming into bloom. The plants which are lifted from the flower-beds to prepare for the summer bedding must receive careful attention, and the beds in the reserve garden should be put in a proper state for their reception. The plants should be broken up and planted at once, or else cuttings should be put in. The plants will require careful attention with regard to water and shading until they get established. Plantations should be made of Violets, planting the runners if possible, but divisions of the crowns will make good flowering plants if the ground be in good heart. In a few favoured localities the planting out of the hardier class of plants, such as East Lothian Intermediate Stocks, Calceolarias, Pelargoniums, Gazania uniflora, Verbenas, &c., is commenced about May 6; but as a general rule it is soon enough to start after the 20th, while in cold exposed situations it is an advantage to defer the operation till June. No benefit is derived from planting early when the soil is wet and cold; the plants are sure to get browned, and many of them will be certain to lose their foliage. The soil in the beds when bedding is commenced should neither be wet nor dry, but if the soil be dust-dry, the plants will bloom at an early period, and they will be speedily over, so that, as a precaution, if the soil be very dry, it should receive a thorough soaking of water, and when in working order the plants may then be put in. Those planted early should have a few evergreen boughs stuck through amongst them, to afford shelter from cutting winds. In planting Calceolarias which are not intended to be pegged down a few pieces of Birch twigs about a foot high put round each plant will keep them erect, and obviate staking at a later time. The arrangement of colours must have careful attention; avoid as much as possible glaring masses, and remember that harmony is more pleasing than contrast. The higher shades of colour, whether of flowers or foliage, should always be towards the centre of the bed or design, and the brighter ones towards the outside. If the centre bed be scarlet the eye will be instinctively drawn towards that point and the other beds would appear less effective, whereas if this bed be planted with yellow Calceolarias or white Stocks, or with white or yellow foliage, the eye will take in the colours of the other beds that be intermediate shades of pink, rose, violet, &c., whilst on the outside of the pattern are the scarlets and crimsons. The due balance of colour must not be lost sight of, else the effect will be anything but pleasing. Uniformity of height must have strict attention, the tallest plants coming in the centre of the beds; there being a gradual fall towards the edges of the beds, it is possible to assist this materially by pegging and laying down taller subjects on their sides and planting dwarfer ones upright. *W. M. Baillie, Luton Hoo.*

Nursery Notes.

When Forest Hill is thought of tuberous Begonias naturally enter the mind, but on a recent visit to this place we were enabled to see that the skill of Messrs. J. Laing & Co. does not stop at tuberous Begonias, for Orchids have a prominent position accorded to them. Dendrobiums were especially good, one plant of D. Ainsworthi being very large and heavily flowered, bearing some 200 blooms on it; D. nobile in a variety of coloration, and D. Wardianum also are very noticeable. Of these latter Messrs. Laing have a large number of freshly imported pieces just beginning to show flower, which in one or two instances are very fine. The most noteworthy Orchid in this nursery is Cattleya intermedia var. Laingi, a distinct form and an acquisition. We were fortunate enough to see the type and the variety in flower at the same time, and observed the differences. Messrs. Laing's form is darker in colour and has a deeper and better shaped lip, and the flower reminds one forcibly of Lælia Turneri. Other Cattleyas are varieties of Trianæ with several pieces of C. Lawrenceana. Dendrobium primulinum is seen with a very pale lip, more so than usual. But leaving Orchids and turning to other departments we see much to interest us. Crotons are well done, and C. Laingi is largely grown. Of ornamental leaved plants Caladiums are a feature, but at the time of our visit were not up to their usual standard, the time of year was too early; however, the distinctive characters could be seen. Candidum (white, with a little green) is a good sort; and a remarkable one as far as colour is albo luteum, a sort of pale Primrose-green colour; also may be named Madame M. Scheffer, and Luddemanni. Palms are grown in fair quantity, and there are some good specimen plants of Cocos, Phœnix rupicola (true), Thrinax, &c.

Among plants in flower were several Camellias, Heaths, Boronias, Impatiens, Hawkeri, and the double-flowered Sparmannia africana. In order to get this plant to produce its flowers, it is necessary to starve it. A pretty and good variety of Clivea miniata is called sulphurea; it has orange-yellow flowers, the tips of the segments being salmon and the centre pure white: it forms a handsome truss, and is distinct in colour. In one house we saw in thumbs a large quantity of the decorative Asparagus, viz., plumosus, which is a most useful plant for house decoration and is not useless for cutting. Preparations are being made for the great feature of the season at Forest Hill, that is, the show of Begonias; thousands of plants may be seen in all stages of growth, and plants from cuttings made last August are now in flower, but the number of seedlings coming up is beyond calculation. We hope to say more of the Begonias in their season.

Roses also receive attention at Messrs. Laing's nursery, and one house 150 feet long is devoted to forcing Niphetos and Maréchal Niel Roses. We saw only the last of the flowers, and that was not to be despised, but what must the full flowering have been?

Orchid Notes and Gleanings.

MR. W. BULL'S ORCHID EXHIBITION.

On Tuesday last Mr. Bull opened at his nurseries in the King's Road, Chelsea, this exhibition of flowers, which is annually looked forward to with so much pleasure by Orchid *connoisseurs*. There, gathered together in one place, may be seen the richest gems of the Orchid family effectively arranged—the display impressing the visitor both by its arrangement and by the beauty and rarity of its components.

Fig. 115.—BERBERIS NEPALENSIS VAR. BEALEI: FLOWERS PALE YELLOW. (SEE P. 609.)

We are unable to lay before our readers a full account of this exhibition, to gain an adequate idea of which they should pay a visit to Chelsea and see for themselves.

On entering the house devoted to this exhibition the first feeling is one of astonishment, which gives place to interest, which grows till, when the visitor thinks of leaving, it is with a wish that he may soon return. And herein this exhibition differs from many, as daily fresh plants are added and others removed, so that in two or three weeks there is an entirely different display to captivate the attention. We made particular note of several flowers, and were especially struck on entering with a fine piece of Cymbidium Lowianum var. atro-purpureum, with two very long spikes of bloom, shown off by a bank of Odontoglossum crispum in great variety, ranging from pure white down to a decided rose. And here we may mention parenthetically that there were altogether in the house about 200 spikes of this Odontoglossum. But the Cymbidium—it has a very intense lip which warrants its varietal name, and the sepals and petals are of that peculiar "greenery-yallery" hue once so much favoured by æsthetes. C. L. var. Victoriæ was also very noticeable on account of the rich colour of its sepals and petals, which are a rich green, while the colouring on the lip is scarlet-lake—a splendid contrast. This variety is certainly one of the best, if not the very best, of the varieties of this Orchid. A noticeable feature in the arrangement is the grouping together of several plants of one variety or species, in which way fine effects are obtained, as, for instance, where Cattleya Lawrenceana was massed, the brilliant colour standing out well in such a case. Mr. Bull possesses two beautiful varieties of this Cattleya, one called C. L. rosea, the other being distinguished by the name oculata: rosea is, as its name implies, a rose coloured variety of the type, the whole flower being much lighter: this is flowering now for the first time. Oculata is, as it were, the "happy medium," retaining the deeply coloured lip of the type while having sepals and petals of a lighter colour. Cattleya Mendelii Rex must not be omitted: it at once draws the observer to it by its intense yet brilliant lip, which is well thrown up by the delicate tint of the rest of the flower, which is long, of an elegant form, and of good substance; the two sepals are very broad, and are inclined inwards. Another good variety of Cattleya Mendelii is distinguished as insignis, with a very long lip with as deep a colour as in Rex, the sepals and petals being almost white, and thus there is contrast. Cattleya Mendelii Alexandræ also has a long lip, which is much fringed, the margin being very light, and as it is thrown back on the lip itself, which is deep in colour, looks very pretty, and especially so at a short distance from the plant. Cattleya Schroderiana is represented by several plants, showing great range in coloration, some forms being very pale, others dark: one of the latter class was very pretty, and had an additional attraction in its rich yet peculiar orange throat. While speaking of Cattleyas mention may be made of the many plants of C. citrina which were suspended from the roof of the house. This is a pretty Orchid, and deserves to be more cultivated.

Odontoglossums formed a large portion of the display, and a very pretty effect was made with plants of O. citrosmum in suspended baskets, the long spikes of flowers hanging down. O. Pescatorei var. formosa is a variety very prettily marked with violet-purple; the plant is young as yet, but gives evidence of much beauty, and at the present time is very attractive. O. amabile is represented by a plant bearing a large spike of fifteen flowers, and when seen in a suitable light is noticed to be pale in the centre, and darker towards the outer part of the flower; O. Coradinei hemileucum, yellow, flushed with brown; O. (Miltonia) Roezlii splendens, well marked; O. decorum, O. polyxanthum, several named varieties of O. crispum, of which purpurea, with large round flowers of a deep rose colour, is one of the best; and others are also good.

Among Cypripediums there are some not often seen, as, for instance, C. gemmiferum, which is very pretty, with a dead-brown lip, and whitish dorsal sepal; C. superciliare, very much like C. gemmiferum, but larger, and with a certain tinge of rose in it. Of C. lævigatum there is a fine specimen, with several large flowers; and C. Boxalli var. atrata, recently illustrated by us, is also well represented.

In this exhibition there are a few plants of Scuticaria Dodgsoni on blocks bearing their flowers, and a fair idea of the plants may be gained. Lælia purpurata, with large flowers, is well shown; and L. p. atro-sanguinea, with dark sepals and petals, and an intense lip, is likely to find admirers. It is very distinct from the type.

There are beyond these many interesting Orchids; we have mentioned only the most exceptional, and more than this we cannot do.

Fig. 116.—berberis wallichiana.

BERBERIDS.

The Berberids have gone a little out of fashion, nevertheless for decorative purposes in shrubberies there are few plants to surpass them. The evergreen species are excellent for cover, they bear the smoke-laden air of towns, provided the dose be not too strong; they are hardy, and look well at all seasons. When in bloom some are gorgeous, such as B. Darwinii, or the beautiful hybrid between it and B. empetrifolia, known in gardens as B. stenophylla ×. B. japonica (fig. 117) is a fine species, with an erect unbranched trunk like a small tree, with fine bold foliage in a tuft at the top. The Chinese form, B. Bealei is only a variety of this, but is remarkable for the beauty of its yellow flower-spikes (fig. 115). The Japanese Berberids have been lately studied by Mr. Ito, a Japanese gentleman, residing at Cambridge, and who has published an account of them in a recent number of the *Journal of the Linnean Society*, vol. xxii., p. 428, and in which he says that B. japonica is not really native to, but only cultivated in gardens in Japan. Forbes and Hemsley refer both the Chinese and the Japanese forms to B. nepalensis (*Journ. Linn. Soc.*, xxiii., p. 31).

B. Wallichiana, as our figure, drawn from a specimen furnished by Mr. Hartland, shows (fig. 116), has no slight claims on the attention of the cultivator. The plant is a native of the mountains of Nepal, and is also found in Central China. B. Wallichiana is figured in the *Botanical Magazine*, t. 4656, and it is described in our columns, 1869, p. 710. B. heterophylla is somewhat similar; its leaves are of a rich bronze or coppery colour.

NATAL TO THE TRANSVAAL.

(See Supplementary Sheet.)

The Transvaal, hitherto little known or valued, is now, more than any other part of South Africa, coming into notice through the gold mines in the south-eastern part of the country. Through the liberality of a well-known amateur, I was enabled recently to visit the country with a view to investigate its flora; the results, imperfect and faulty as they are, I beg to lay before your readers. I should say that all the heights hereafter mentioned were determed by a good aneroid barometer.

Starting from Pietermaritzburg (2000 feet), on November 9, I took advantage of our railway as far as Ladysmith, a distance of 125 miles. On reaching Howick (3700 feet), a tiny village, 12 miles beyond Maritzburg, the vast range of the Drakensberg, some 60 miles ahead, was seen covered with snow—a most unusual sight in early summer. The greatest heights of the Berg, as it is always called in Natal, range from 8000 to 10,000 feet. A spring drought had retarded vegetation very much, and but few plants were seen in bloom.

An Hypoxis, the showy blue-flowered Pentansia variabilis, and a beautiful white Gomphocarpus were conspicuous amongst the parched grass. Passing Weston, a hamlet on the Mooi (Dutch, pretty) River (5000 feet), the pasture improves. A white-flowered variety of Scabiosa columbaria is abundant, and several showy Thymeleæ, mostly species of Gnidia and Lasiosiphon. A few yellow-flowered Compositæ were seen, mostly Helipterum with purple Veronica; in wet places Tritoma uvaria and Richardia æthiopica.

At Estcourt, a small town (3900 feet), 60 miles from Maritzburg, the country was fearfully dry. Acacia horrida and robusta are common here, the first-named a fine sight, bearing masses of sweet-scented golden heads of bloom. In the driest and most rocky places Aloes were abundant, also a species of Cussonia, with bluish leaves not before seen. For some miles the railway skirts the Tugela River, a fine broad stream, but teeming with rocks and waterfalls. At Ladysmith, 3200 feet, the grass is simply burnt up with drought; but here the railway at present stops, and I had to take a waggon for the rest of the way—a distance of 300 miles. On the road to Newcastle (4000 feet), the grass was simply *nil*—which was very hard on our oxen. I noticed a few plants worth mention—a shrubby Ipomœa with handsome, light purple flowers; a tiny yellow Eulophia, an Asparagus, a Jasminum and Brunsvigia toxicaria struggling to flower. On a rocky hillside was a Crinum with bright rose flowers, and the showy Gladiolus aurantiacus—this fine thing varies a good deal from yellow to brown.

The country hereabouts is very flat, treeless, and void of cultivation. Every day as we slowly advanced, the Berg came more distinctly into view; and standing alone, dark blue in the distance was one flat-topped hill whose name some four years ago was but too well known in England. It is the hill of evil counsel, Amajuba, and recalls the Boer war with its unworthy termination. Leaving Newcastle behind, the Berwick-on-Tweed of Natal, we approached and camped out on Laing's Nek on the top of the Berg (5500 feet). I wished to ascend the Amaguba Mountain, whose top cannot be much less than 7000 feet above the sea, but a cold rain and wind came on (temperature 52°), which prevented me. From this great elevation at the extreme northern part of the colony we overlooked Natal; spread out before us were rivers, mountains, woods and plains. The Berg, however, hereabouts is almost destitute of trees, and by this time the snow was all gone. Near a stream in a sheltered valley a fine Melianthus was seen with black and crimson flowers; Pelargonium flabellifolium, with its fan-like leaves and dark maroon flowers. Phygelius capensis was plentiful; also a very robust Irid, possibly a Montbretia, with scapes 5 feet high, and flowers red. Scilla natalensis is in splendid form here—huge leaves and flower-stems as high as a tall man. Galtonia candicans is scanty, but a very robust form of Sandersonia aurantiaca was found, stem nearly climbing, about 2 feet high.

At length, after crossing a tiny streamlet called Coldstream, we found ourselves on the vast grassy plains of the Transvaal High Veldt (Dutch, field). This plateau is about 100 miles long, and 10 to 20 miles broad (it really is much larger, but I speak of what I saw only). Its altitude ranges from 5500 to about 6500 feet, quite destitute of trees or shrubs of any kind, in summer covered with fine grass, as we now found it; in winter it is a howling desert. It is the watershed between the Atlantic and Indian Oceans, as reference to a good map of South Africa will show. A few Dutch Boers are scattered about on this grassy ocean—primitive to a degree, and in their habits and ideas much like the patriarchs. A few trees are seen round their desolate homesteads—mostly Populus alba and the Weeping Willow. I think it is too cold for Eucalypti to thrive.

No firewood is to be had, and we were obliged to use dry cow-dung for fuel. The lakes are a remarkable feature on the High Veldt. I counted fourteen in sight of the road; they lie in slight depressions in the plains, encircled with a rim of sandstone rocks. They vary in size from half a mile to about 4 miles' diameter, nearly all circular in shape, the water generally shallow, and with an earthy, not distinctly saline taste. The geological formation of this tableland is sandstone laid down flat. In places where the rocks are visible above-ground, it is seen that the lower sandstone is a fine-grained soft variety; above it is an intensely hard layer. This, however, in the course of time has been worn into fantastic shapes; and it is here, in many a sheltered corner, that the handsome Hæmanthus Baurii lives and thrives. I suppose this tableland is one of the most healthy places in the world. The air is very pure and sweet. But a very few years back large game of every description was most abundant—Hippopotami even in the lakes; now one rarely sees more than a few springbok; the very heavy waggon traffic to the gold fields has scared away all game near the roads. A few plants were seen amongst the grass: a showy, stemless, crimson-flowered Erythrina, Dietes Huttoni, and sundry yellow Compositæ, consisting of Helipterum and helichrysum. In wet places the ground was pink with two species of Plocandra, mixed with a blue Lobelia and a little purple Polygala. A showy yellow Ranunculus with large Cyclamen-like leaves was new to me, as also were two very fine Eulophias, one with golden-yellow flowers, lip maroon spotted: the other has lilac or light purple petals and dark brown sepals—both well worth cultivation. Very abundant in some parts was a fine Cyclonema with deep blue flowers interspersed with a dwarf pink Mesembryanthemum and a golden Sedge. Several Acalyphas were noted—not ornamental; very many Hypoxis—some very showy; a few Sparaxis, and Gladiolus longicollis—flowers pale yellow, very sweet scented. Ferns are rare. The roads or rather tracks in the Transvaal are as bad as English highways in Anglo-Saxon times. We rarely made over 10 miles a day.

At last, on November 29, in place of the boundless, treeless, grassy plains, we came to quite a different country. About 75 miles from Barberton the sandstone suddenly merges into quartz and the flora is a very rich and interesting one. The road goes down 2000 feet here, into the valley of the Komati or Umcomati River. I must first notice a very remarkable plant:—Stem, 3 feet, simple or 3—6 branched, 3 inches through; leaves, long, drooping, grass-like, clustered at the top of the stems; flowers produced amongst the leaves, very many, solitary, on long drooping pedicels; perianth, 6-fid., pale purple, bell-shaped, about 1 inch long; stamens six, style simple. The order, I believe, is Amaryllideæ, the plant has the habit of a narrow-leaved Dracæna; it is most distinct in habit—would make a good decorative plant. Next in interest to the above is a very fine Gerbera with deep crimson flowers, 2 feet high, and spatulate, deeply toothed leaves, much finer than, and very distinct from our Natal Gerbera aurantiaca. Three very showy Compositæ, yellow flowers—Stobœas probably—were common; and what I least expected to see was a fine Erica, with rosy flowers, not unlike E. cerinthoides. Clinging to the quartz rocks was a Helichrysum with minute white leaves, and studded with tiny golden flowers; it would make an admirable rock plant. The country from here onward is dotted with shrubs and small trees. Pavetta Bowkeri and a second species were in bloom—dense white corymbs. By far the most common shrubs were two species of Protea, one with white and one with pink flowers. Common amongst the grass was a crimson Acanthad, about a foot high, with the habit of an Aphelandra. Callas were plentiful; a very handsome variety bore a deep golden-yellow spathe and white spotted leaves; another had a blush-rose spathe, very pretty.

Few Orchids were seen, viz., a fine white Satyrium and Disa polygonoides. Epiphytic Orchids are very scarce; I met with Angræcum arcuatum only. Ferns were plentiful, comprising Cyathea Dregei, Osmunda regalis, a fine form of Pellæa calomelanos, Adiantum æthiopicum and Capillus-veneris, and Nephrodium athamanticum. *R. W. A.*

(To be continued.)

FRUITS UNDER GLASS.

MELONS.

As soon as the aroma of ripening fruit in the earliest house is detected a drier and airier atmosphere should be maintained. Do not, however, withhold atmospheric moisture altogether; on the contrary, damp the floor of the house about 11 o'clock in the morning, and again about half-past 3 in the afternoon when reducing the ventilation, and give enough water at the roots to prevent the plants from flagging, although a day or two before cutting the fruits it will be advisable, with a view to give better flavour to the fruit, to allow the plants to become dry at the roots, and for the same object leave the ventilators, top and bottom, open a little at night. In order to take as many crops as possible out of the individual houses from freshly planted plants in one season plants should be grown on in 8-inch or 10-inch pots ready for planting on the mounds in a little fresh soil as soon as the fruit is cut and the glass and woodwork washed. Thus grown we manage to fruit three batches of plants in our first and second houses, and two in our third house in the year; these, together with some in pits, afford us fruit from April to December.

Succession-houses.

The atmosphere, which from flowering time until the fruit was set was kept rather dry and airy day and night, should now be kept moister, and the plants syringed with tepid water morning and afternoon during bright sunny weather. The houses should be ventilated freely from half-past seven to eight in the morning, according to the aspect of the structure, till the closing of the houses. Maintain a night temperature of 70°, and 85° by sunheat, and a free circulation of fresh air, and run it up to 90° or 95° at closing time. Give liberal supplies of tepid liquid manure at the roots when considered necessary.

Pine-apples.

Examine the soil in the pots twice a week, to ascertain its condition, and, should water be required, give sufficient tepid liquid manure to fruiting plants, to thoroughly moisten it, but clean water to plants which have been recently potted. In the morning early and in the afternoon at closing time damp the plunging material, walls, pathways, and the plants slightly overhead, but avoid letting water into the crowns. The temperature in the fruiting-house should be allowed to run up to 95° with sun-heat at closing time. Shade all such plants as have been lately potted, putting on the shading at 10 o'clock in the morning and taking it off about 3 in the afternoon when the day is sunny. Admit air when the thermometer indicates 80° in the morning, and regulate the

amount of ventilation during the day so that this figure is maintained.

Melons in Pits and Frames.

Make successional plantings, setting the plants on mounds composed of rich fibry loam, with a little lime-rubble added. The mounds must be made sufficiently high before setting out the plants that 2 inches of the apex remains above the soil after the necessary earthing-up at a later date. This will prevent the lodgment of water about the stems of the plants which is a predisposing cause of "canker" of the stem at the ground level. In planting make the soil firm about the roots, and afterwards water with tepid water, shading during the heat of the day until the roots have taken to the soil, after which no shading will be required.

The Best Varieties to Grow.

There are now so many sorts of Melons to be found in catalogues of the present day that one cannot wonder at being frequently asked by amateurs which are the best varieties to grow, hence the following enumeration of the most trustworthy sorts for growing in houses:—Blenheim Orange, Cox's Golden Gem, and Sutton's Hero of Lockinge; and for pits and frames, Golden Perfection, High Cross Hybrid, and Read's Scarlet-flesh. *H. W. Ward. Longford Castle.*

SOME NEW IRISES.

In the following lines I desire to describe provisionally some new Irises which flowered with me during the past summer. I say "provisionally," because experience has taught me that the features exhibited by a plant during one year's flowering—especially when that flowering is the first flowering after introduction from a distant land—are not always to be trusted as telling a true tale, or the whole tale. And while I feel confident that I have seen enough to justify me in considering the plants which I am about to describe as new species, and, as such, worthy of being made known and named, I should wish to defer the formal description of them until my experience of them is larger. I have, therefore, on this occasion given no Latin diagnoses.

I. Duthieii, *sp. n.*

Rhizome knotty and gnarled rather than fleshy, the old part bearing scattered tufts of fibres, the remains of old leaves, the new part consisting of clusters of elongate oval buds, sheathed with the remains of leaves partly splitting up into fibres, and bearing new young buds at their bases.

Flower solitary, sessile, appearing before the leaves, are mature. Leaves, when fully developed, long and narrow, about 2 feet by ½ inch, yellowish-green in colour, five or six to a tuft.

Spathe-valves two, about 1½ inch by ½ inch, pale green, veined, pointed, keeled, and somewhat ventricose.

Falls spreading almost horizontally, at all events not markedly reflexed, lanceolate, with the claw gradually expanding into the lamina; upper surface of claw white with thick purple red-lilac veins, the lamina of a more uniform red-lilac marked with deeper coloured veins and blotches; under surface greenish-yellow, with veins and blotches shining through. On the claw extending on to the lamina is a distinct compact beard of discrete hairs, which are white over the lamina, but are tipped with a yellowish-brown colour over claw.

Standards about 1¼ inch long, connivent, oblong-ovate, the lamina of a red-lilac, paler than the falls, marked with deeper veins.

Styles light red-lilac, rather deeper in colour in the median region; crests triangular, with crenate edge.

Tube 3 inches or more in length, green, with purple stripes.

Ovary not seen.

Capsule 1¼ by 1 inch, trigonal, dehiscing along the sides; seeds oval, reddish-brown, wrinkled, with a distinct arillode or strophiole.

Found by Mr. Duthie in Kutti Gangti valley in Byans, North-east Kumaon (see *Gardeners' Chronicle*, March 20, 1886, p. 372.

Flowered in England May 14, while the leaves were as yet only 2 or 3 inches long, the full development of the foliage not taking place until midsummer.

I desire to name this Iris after Mr. Duthie, F.L.S., the able Superintendent of the Botanic Gardens, Saharunpore, to whom I am indebted for the roots.

I. Kingiana, *sp. n.*

Rhizome knotty rather than fleshy, the old part gnarled with scars of old leaves, the new part bearing cluster of oval buds, sheathed with remains of old leaves breaking up slightly into fibres, and bearing tooth-shaped new buds at their bases.

Flower solitary, sessile, appearing before the leaves, *i.e.*, while the leaves are only 2 or 3 inches high.

Spathe-valves pointed, narrow, not ventricose, pale green, clasping tube below but leaving it exposed above. Outer valve 2½ inches long.

Tube about 2½ inches long.

Fall 1½ by ⅝ inch, lanceolate-ovate; the claw, which gradually expands into the lamina, white, with thick purple veins; the lamina, which is sharply reflexed, on the upper surface purple with a few scattered deep purple spots, on the under surface greenish-white, the purple spots and broken median veins shining through. The claw and lower third of lamina marked by a median crest largely broken up into a beard by clavate hairs, white, tipped with orange.

Standards erect or slightly connivent, lamina oblong ovate, ¾ by 7-16th inch, of a uniform purple colour, suddenly narrowed to a more lightly coloured claw ⅜ inch in length.

Styles about 1 by ⅜ inch, raised high above falls, purple in median portion, lighter towards margin. Crests obtusely triangular, much reflxed, edge coarsely and sparsely serrated, of a darker purple than the rest of the style, and with conspicuous veining. Stigma with a wavy edge.

Anthers equal to filaments. Pollen white.

Leaves in summer after flowering, 2 feet or more, by about ½ inch; yellowish-green, erect; persist until early winter.

Found by Mr. Duthie in British Garwhál.

Flowered in England in May, the foliage attaining its full development in mid or late summer.

I have ventured to call this Iris after my friend Dr. King, the distinguished Director of the Botanic Gardens, Calcutta.

I. Hookeriana, *sp. n.*

Rhizome less fleshy than that of the Pogoniris group, and more largely covered with remnants of leaves, in many respects more like that of I. tectorum.

Leaves immature at flowering time, at most 8 inches by ⅜ inch, becoming later ¾ inch or more in breadth, 1 foot or more in length, yellowish-green, somewhat flimsy.

Scape about 5 inches, exclusive of flower; almost wholly hidden by sheathing-leaf; two-flowered, with three spethe-valves, green, persistent long after the flower, the lowest valve pointed, ventricose.

Fall 1¾ by ⅞ inch at broadest, obovate lanceolate, the claw gradually expanding into the lamina, which is very sharply reflexed; colour of claw white, with thick dark blue-purple veins, or rather dark blue-purple, with thick white veins; these merge on lamina into a blue-purple ground, marked with dark dots or blotches; under surface green in median, purple in lateral portions. The beard over the claw of fall is a thick dense beard of ordinary long clavate hairs, white, tipped with orange; these further on towards lamina become shorter and stouter, some of them bearing on their summit a small secondary hair, and so pass through a papillose stage into the teeth of a crest, in which the beard ends about half-way down the lamina. Besides the stouter hairs are a number of fine delicate twisted hairs. In some cases the hairs do not give place to a crest, but continue to the end as a beard.

Standard: lamina narrow obovate, ¾ by ½ inch, of a uniform blue-purple, narrowing suddenly into a very caniculate claw, ⅝ inch in length, marked with red-purple veins.

Style with nearly parallel edges, very concave, crests triangular, coarsely serrate, much revolute; stigma slightly notched, of a white colour, in contrast to rest of style, which is of reddish-purple, darker in the median portions than at the sides, abruptly narrowed at junction with other two styles.

Anthers reaching beyond stigma; pollen white.

Tube about ½ or ⅓ inch, green, with purple stripes; hollow along its whole length, so that united style is free down to ovary, the filaments being inserted low down in tube; tube not constricted above ovary.

Ovary bright green, cylindrical, or obscurely trigonal.

Capsule trigonal, with swollen sides, beaked, splitting below the beak; seed with small but conspicuous arillode.

Flowered in England in May, the foliage attaining its full development some time afterwards.

I owe this plant to the kindness of my friend, Mr. Max Leichtlin, who obtained it from the Moravian missionaries at Lahul. It is to be presumed, therefore, that its native habitat is near that city.

A specimen which I received from Mr. Max Leichtlin in the midsummer of 1884 flowered imperfectly, with an undeveloped scape, in the following September; but I feel convinced that this was an abnormal effort, due to the plant being moved and then stimulated into growth at a time when it ought to have been passing quietly into its winter rest.

No species of the genus as yet described has, as far as I know, been named after our great living botanist, the late Director of the Royal Gardens, at Kew, and I trust Sir Joseph D. Hooker will allow me to name after him an Iris which, though not of surpassing beauty, has certain charms, which seems to me to be of more than usual scientific interest and which dwells at home on the outskirts of the geographical area, the botany of which will for ever be associated with his name. *M. Foster.*

(To be continued.)

FRUIT REGISTER.

STRAWBERRY KING OF THE EARLIES.

Having obtained two years ago this variety from Mr. Laxton I am enabled to confirm what Mr. Rust says respecting its being first in the open garden, for last season I picked fine ripe fruit in the open (not a south border) ten days before Keens', Vicomtesse Hericart de Thury, or any of the early varieties, were ready. I was therefore anxious to try it for early pot work, and had 300 runners potted in 48's, which had made by last September fine strong plants, and filling the pots with roots; but I was greatly disappointed about the end of that month on finding that they were nearly all throwing up flower-spikes; however, they were placed on the shelves in a cool airy house, but without success, the weather at the time being very damp. This seemed to cause weakness in the plants, and the crowns did not appear to have enough substance in them to throw good bloom. They were thereupon set away in the pits, until six weeks ago, when the plants appeared to have improved greatly. Having started them in gentle heat, they are now a picture to look at, although with very little leaf, but are nearly all bloom, the spikes being well up above the pots, and of a fine bright healthy colour. I am very pleased with the appearance of the sort, and think it will be found valuable for early forcing. I am fast losing my former preference for Vicomtesse Hericart de Thury, for when forced early its flower-spikes are not long enough to reach over the pots, the fruits thereupon often rot before ripening. Perhaps if plants of King of the Earlies were not quite so forward in the autumn, it would prevent them from flowering at so early a date. I am trying the Strawberry Captain in pots, as a late variety; these promise well at present, and possess remarkably strong crowns. La Grosse Sucrée is one of our best for second early, at the present time we have several shelves of fine ripe fruit. *J. Vert, Audley End Gardens, April 5.*

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W. RICHARDS, 41, Wellington Street, Strand, W.C.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

TUESDAY,	May 10	Royal Horticultural Society: Council, Scientific, Fruit, and Floral Committees. Narcissus Committee. National Rose Society: Executive Committee.

SALES.

TUESDAY,	May 10	Greenhouse Plants, &c., at Wolsey Grange, Esher, by Protheroe & Morris.
WEDNESDAY,	May 11	Hardy Plants and Bulbs, Orchids, and Cape Bulbs, at Stevens' Rooms. Plants and Bulbs, at Protheroe & Morris' Rooms.
THURSDAY,	May 12	Imported Orchids, from Mr. F. Sander, at Stevens' Rooms. Specimen Exhibition and other Plants, at The Nurseries, Pewsey, Wilts, by Protheroe & Morris.
FRIDAY,	May 13	Second Portion of the Stock of Established Orchids of the New Plant and Bulb Company (in liquidation), at Protheroe & Morris' Rooms.

The Origin of the Auricula.

THE true source of the garden Auricula continues to excite attention. The history of the matter has been fully dealt with in our columns, and it formed the subject of no little discussion at the Primula Conference last year—a meeting whose successful issue leads to oft-expressed wonder why it was not repeated this year. At that Conference Mr. LYNCH pointed out that the matter could only be settled by practical experiments on the parts of the hybridiser and the gardener. Our forefathers fabricated Auriculas, but they have not told us how they did it; but what man has done man can do, and so we hope our hybridisers will not allow the season to pass without some attempt to retrace the steps their predecessors followed. As pertinent to this subject we now print a communication sent us by Mr. DEWAR, which will be read with interest even by those who are not disposed to accede to his views:—

"The question of the origin of the garden Auricula has long been before the lovers of these flowers, and various have been the suggestions put forth from time to time with a view to its final settlement. Professor KERNER, Mr. J. G. BAKER, Mr. S. HIBBERD, Mr. G. C. CHURCHILL, and others have put forth their conclusions on the subject, and, as was to be expected, no two opinions coincide. So far as we can judge, this appears to be a subject not so much for the botanist as for the gardener, and if the vexed question is ever to be cleared up, it must be done by experiments with living plants, and under the eye of an intelligent and careful grower. In a case of this kind it is not enough to go by mere appearances, as many Continental botanists seem to do with regard to supposed hybrid Primulas. Where a plant is found growing with two species, and it is found to be intermediate or nearly so, it seems natural to conclude that they are the parents; but when the supposed hybrid is found isolated or only in company with one species, its parentage is simply guessed at, and the consequence is, we have entirely different parentages assigned for one and the same plant. No trouble whatever is taken to prove the accuracy of the conjecture, which might easily be done by crossing the supposed parents. The garden Auricula, however, which we are more interested in at present, whatever may have been its origin, has undoubtedly been a long time in attaining its present state of perfection of paste, &c., and we shall not get at the origin of such a highly perfected flower in a few weeks or even in a few years. If we go the right way to work, it is hardly too much to say that it cannot be done in a lifetime; we have, however, hopes that in a few years a tendency to sport in that direction will be arrived at, and this itself will be a decided gain. Botanists can and have done a great deal to help the gardener in giving their opinions as to its affinity, &c.; but then, as before stated, none of their conclusions coincide, and the gardener is left to his choice of what in his opinion is the most feasible one. Whoever decides to take this most interesting subject up will, no doubt, follow one of the botanists mentioned, and go to work on the lines he indicates. It will be strictly necessary, however, to take records of the results each year brings as the experiments develope; without such records the investigations of growers even well known to be careful will be open to doubt.

For the benefit of those who have not followed closely what has already been written on this subject, it will, perhaps, make the case clearer to state briefly the various opinions expressed by the botanists indicated above. Professor KERNER, who, we believe, is a cultivator as well as a botanist, published the result of his researches in the *Zeitschrift der Deutschen und Oesterreichischen Alpenvereins*, Munich, 1875, vol. vi.; it was translated by Mr. A. W. BENNETT, 1875, vol. iv., n.s., p, 806, in the *Gardeners' Chronicle*, and also by Mr. CHURCHILL in the same work, May 1, 1886, p. 562. In the latter translation paragraph 11 reads as follows:—

"'About 1582 CLUSIUS sent from Vienna to his friend VAN DER DILFT specimens of P. Auricula and P. pubescens.

12. "'Their cultivation spread so rapidly that they appeared in most gardens in Belgium, Germany, England, and Holland, by the middle of the seventeenth century; and in the year 1664 several forms of P. pubescens of different colours were known. They were also tried in Italy, but without success.

13. "'P. Auricula not yielding varieties gradually disappeared from cultivation, while the other increased them continually, until more than one thousand forms were in cultivation.'

"Professor KERNER's views will be pretty clear from the above paragraphs. Mr. BAKER who has also given considerable attention to the subject, published his results in the *Gardeners' Chronicle* for June, 1885, as follows:—'From the widely-spread and well-known P. Auricula, L., this P. pubescens differs in having leaves shortly pubescent all over the surface, and especially on the margin. Conspicuously inciso-crenate in the upper half, pubescent bracts, calyx and pedicels; calyx teeth more acute, and as long as the calyx tube, dark lilac flowers, and the whole plant—leaves, bracts, pedicels, and calyx—almost entirely destitute of fine white meal. It seems to me impossible to take a walk through any Auricula show with this P. pubescens in memory without feeling that Professor KERNER's paper is very far from having exhausted the whole subject. My own view is that a very large proportion of the garden Auriculas are nearer to P. Auricula than they are to P. pubescens, and that the garden Auricula of the present day is the product of a complicated series of intercrossings of which P. Auricula, Balbisii, venusta, and pubescens have also entered.'

"Mr. SHIRLEY HIBBERD asserts that P. commutata, pedemontana, and ciliata, associated with P. Auricula have all been concerned in the formation of the florists' flower, and Mr. CHURCHILL adds P. Palinuri to pubescens to bring in the large bract, and also possibly P. Göblii (super-Auricula × villosa).

"A little over a year ago a small packet of the seed of P.pubescens, JACQ. (super-Auricula × hirsuta, KERN.), was sent by Mr. C. FORSTER, of Scheibbs, Austria, a noted cultivator of these alpine plants, and though the seedlings are yet in a young stage many of them have flowered, and the curious results obtained have led me, at the instigation of Mr. BAKER, to offer these notes. In all twenty-nine plants have resulted from the sowing, over a dozen have flowered; and the extreme differences they already show in the shape and crenatures of the leaves, the variable size of the bracts, and the colours of the flowers, seem to go a long way in the direction of Professor KERNER's views. No. 1 has flowers almost maroon with a white eye; No. 2, deep, and No. 3, pale purple; No. 4, lilac; No. 5, white tinged lilac; No. 6, white; No. 7, pale yellow; No. 8, more pronounced yellow. The calyx teeth also vary both in their length and breadth; some few are quite pubescent as in the type, others less so, a few sparingly, and showing the presence of a distinct fine white meal. The leaves also vary in a striking degree—some narrower than the type, others broad, inciso-crenate, slightly so, while a few are quite entire, and with margins similar to those of the typical P. Auricula. Some are densely hairy, including the margins, others less so, while a few are covered with a fine white meal. The bracts show a decided tendency to enlarge, and I think that in a few generations it would be so pronounced as to dispense with the aid of P. Palinuri altogether, a few of the more robust of those in flower being almost twice the size of the others. So far as can be at present judged from the above, and having seen some curious forms of P. pubescens at the Auricula show last week, I have not the slightest doubt that the views put forward by Professor KERNER are eminently worthy of consideration. Many of the seedlings noted above are no more like the true P. pubescens than the show Auricula is like the alpine one, and when such a decided step is obtained in what one may call the first generation the experiments, if carried out fully, will, we are convinced, bring us much nearer a solution of the real truth.

"With the above results in one's mind it is not so hard to believe that the garden Auricula was evolved from no other than this P. pubescens, and this will seem the more probable when we consider the ease with which it may be grown in gardens as compared with the true P. Auricula. A gentleman writing from Morayshire says, 'that this same Auricula (P. pubescens) was abundantly cultivated in many gardens fifty years ago as a border edging—a purpose for which, independently of its flower, it was suitable; the more so, as it did not readily die out. I now find a few plants of a white variety identical in all respects with the other except colour.' This helps in a measure to bear out the above statements, and there can be no doubt that forms both near and widely different from the type were, and are even yet, grown largely in old gardens, both in this country and in Scotland. I also believe that many of the plants grown under the name of nivea or nivalis are forms of P. pubescens, and not, as supposed, allied to viscosa, VILL."

ALOES IN NATAL.—The two photographs from which our Supplement has been produced (see Supplementary Sheet) were taken by Mr. G. T. FERNEYHOUGH, of Pietermaritzburg, Natal, to whom we are indebted for permission to copy them. No details of localities have been given by Mr. FERNEYHOUGH, and we are only in possession of the fact that the stone upon which the native is standing is the highest point in the colony, and is probably therefore some point in the Drakensberg range which attain a height of 10,000 feet. The branching Aloe on the left of the picture is apparently that of Aloe arborescens, while those in front are probably A. lanceolata. In the other picture, of which also we have no locality, the wealth of Aloe growth is well shown. Several species are, perhaps, represented, and amongst them are probably A. chloroleuca, A. platylepis, and A. purpurascens. The general character of the vegetation of Natal and the Transvaal is given in the record of Mr. ADLAM's journey at p. 610.

KEW.—The rockery shows the effect of this dull cold season, but it would be a dull day indeed when there was not something to see there. The most conspicuous things are the Daffodils; Primula rosea makes a brave show; the Hellebores are over, but the Heaths and Bryanthus are gay; Symphytum

THE HIGHEST POINT IN NATAL.

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ALOES AT HOME IN NATAL.

ibericum, an old plant, is remarkable for its dwarf habit, and for its flowers, ranging in colour from white to brown and orange-red. For the lovers of curiosities there is the singular Pachysandra procumbens, which no one can pass without being struck with its singularity. Veronica satureifolia, a low-growing species, is remarkable for the very rich blue tint of its flowers. The Orchid-houses, the improvement in whose condition we have already commented on, contain a variety of plants in flower, including the rarely seen Epidendrum bicornutum, with relatively large white flowers, unlike those of a typical Epidendrum. Wherever else he may wander, no one should omit to pay a visit to the temperate-house. Editorial experience leads us to cut out other people's adjectives, and to be sparing with our own, but we are tempted to use them in speaking of the Rhododendron Nuttalli and R. Griffithianum (Aucklandii), which are now in full beauty. Let the reader go and see for himself, and choose his own adjectives; if they are not superlatives we shall be surprised. Another plant of startling beauty is a giant Echium from Madeira. It is some 12 to 15 feet high, with an arborescent habit, a branching crown, and long lanceolate silvery leaves, from amid which proceed long very dense spikes of richest blue flowers. The stamens are of a reddish colour, and as they project beyond the flowers they cast a sort of purplish-red halo over the spike. Many of our readers must be familiar with the lovely colours of our common Echium as growing on limestone soils, especially near the sea: let them magnify the plant by four or five and heighten the colour of the flowers, if that be possible, and they will have some idea what this E. callithyrsum is like. We have not seen any colour like it since we saw some allied species in the garden of Mr. Hanbury, near Mentone.

Great Sale in Ghent.—We have received a copy of the sale-catalogue of the plants of the Compagnie Continentale d'Horticulture of Ghent. The sale will take place at 56, Coupure, Ghent, on May 16, and will be continued every day, except Sundays, till Wednesday, June 1. On Monday, May 16, the Azaleas will be disposed of; on May 17, the Camellias; May 18, Palms; May 20, decorative plants, Cycads, &c.; May 21, Palms, Tree Ferns; May 23, Aroids, variegated plants, Bromeliads; May 24, 25, and 26, young Palms, Nepenthes; May 27 and 28, Orchids and Nepenthes; May 30, Orchids; May 31, officinal plants; June 1, miscellanea. No fewer than 12,900 lots are offered.

The Imperial Institute.—Sir Frederick Abel made out a case for the establishment of this Institute in a recent lecture at the Royal Institution, but really in view of the lessons derived from the Indo-Colonial Exhibition no further lesson is required, but only persistent hammering to drive the nail home. Another matter which all who are interested in the welfare of the Empire must unceasingly bear in mind is the necessity for education in science, and in science as applied to industry. In many matters we are being beaten by the Germans, who are so much keener in appraising the practical value of science than we have shown ourselves to be. The matter affects us as horticulturists in a variety of ways. We have still to learn the most economic methods of applying manures; we want to know how to cope with insects and fungi; we want to know how to grow vegetable products so well as to defy the chemists to compete with us. As it is, the chemists have simply ruined the grower of Madder, lowered the value of Oak-bark, and may at length effect the obliteration of Indigo culture. Sugar is threatened; and sooner or later quinine will be made artificially at a profit; and then—woe to the Cinchona planters. These facts all point to the necessity of stimulating scientific effort in various directions.

The Royal Society.—Among the fifteen candidates elected this year we note the names of Sir John Kirk, H.B.M. Consul at Zanzibar, and well known for his botanical researches when he accompanied Livingston; and of Dr. George King, the Director of the Calcutta Botanic Garden, whose monograph on the species of Ficus has just been completed.

Gardeners' Royal Benevolent Institution: Jubilee Bonus.—Donations to the extent of £230 have already been promised towards the fund for granting a bonus of £5 to each of the pensioners of the Gardeners' Royal Benevolent Institution in this year of Jubilee.

Ferrous Oxide and Vegetation.—In a report on the influence of the ferrous oxide in basic cinder on the growth of plants, Mr. J. M. H. Munro describes experiments supplementary to those which formed the subject of a note some time since. Seeds of various sorts—Barley, white Turnips, Clover, white Mustard, garden Cress—were sown in mixtures of garden soil with basic cinder in order to ascertain whether the large proportion of ferrous oxide in the basic cinder exercises any unfavourable influence on germination or growth. In order to put this question to the severest test, enormously exaggerated doses of basic cinder were employed, namely, 10 per cent. of the mixed soil, 25 per cent., 50 per cent., and pure basic cinder without any soil. Most of the seeds tried germinated even in the pure basic cinder, and some of the plants lived until starved for want of nitrogenous food. All the other mixtures produced plants which flowered and seeded in due course—the Barley plants in the mixture of equal parts of basic cinder and garden soil were actually better than those grown in garden soil alone, and produced full ears of grain of unimpaired germinating power. Since basic cinder is an alkaline substance containing free lime, it is only natural that in the three strongest mixtures fewer seeds germinated than in the three weaker mixtures or in garden soil alone. The conclusion arrived at is that the ferrous oxide contained in basic cinder is without injurious influence on germination or growth.

The Auricula.—An interesting lecture on this now popular flower was delivered by Mr. R. Dean before an appreciative audience at "The Club," Bedford Park, Chiswick, on April 29, the Rev. J. W. Horsley, in the chair. The lecture, which was illustrated by one hundred plants, touched upon the various classes assigned by the florist to the Auricula, viz.:—green-edged, grey-edged, white-edged, selfs, gold centres, and white or creamy centres. The same plant is to be the subject of the next discussion at the Horticultural Club, when Mr. Shirley Hibberd will introduce the subject.

Nottinghamshire Horticultural and Botanical Society.—The annual general meeting of the members of the above Society was held on Wednesday, May 4, at the Mechanics' Institute, Nottingham, at 7.30 p.m., for the purpose of passing the balance-sheet, electing the officers, and other general business of the Society.

The Orchid Sale at Downside.—At the sale of the duplicate plants in Mr. Wm. Lee's collection at Downside, Leatherhead, on May 3 and 4, although the weather was changeable the frequent showers did not damp the ardour of the Orchid-growing notabilities assembled in the commodious tent, or stop the flow of the "circulating medium" which the hammer so ably wielded by Mr. Protheroe called forth. The plants offered were in fine order, many of them being grand specimens. A note of a few of the prices realised will show that buyers are still appreciative of good things, and that Orchid growing is in the ascendant. The 250 lots of the first day's sale brought the high figure of £3388; and those disposed of on the second day, up to the time of our leaving, promised to reach nearly the same mark. A few of the leading prices, on the first day, were—Cattleya Trianæ Leeana, with thirteen bulbs, £199 10*s.*; C. T. Osmanii, £63 and £94 10*s.*; C. T. eboracensis, £42; C. T. Dayana, £56 14*s.*; C. T. Dodgsoni, £73 10*s.*; C. T. Emperor, £46 4*s.*; C. Amesiana, £68 5*s.*, and £94 10*s.*; C. Skinneri oculata (a splendid specimen, in flower), £73 10*s.*; Cypripedium Morganiæ ×, £178 10*s.*; C. javanicum × superbiens, £42 2*s.*; C. grande, £68 5*s.*; C. tesselatum porphyreum, £78 15*s.*; Lælia bella. £189; L. elegans Wolstenholmiæ, £42; L. e. alba, £42; Saccolabium Harrisonianum, £162 15*s.*; Cœlogyne cristata alba, £57 15*s.*; Dendrobium Phalænopsis, £52 10*s.*; Masdevallia Harryana, rugosa, £48 6*s.*; M. H. Russelliana, £52 10*s.* On the second day the top score was made with a healthy plant of Cypripedium Stonei platytænium, with a spike of three flowers, which realised £325 10*s.*; C. selligerum majus, £44 2*s.*; Cattleya Trianæ Osmanii, £105; C. exoniensis ×, £105; C. Mendelii, £44 2*s.*; Lælia grandis, £94 10*s.*; L. purpurata Williamsii, £67 4*s.*; Cymbidium Parishii, £52 10*s.*; and Saccolabium Heathii (the white Blumei). £157 10*s.*

M. Duchartre.—This eminent botanist, known to many of our readers as the Botanical Secretary of the Central Horticultural Society of France, and as a cultivator and investigator of Lilies, has resigned his Professorship at the Faculty of Sciences, and has been succeeded by M. Gaston Bonnier.

Cultivation in Tunis.—A recent report by Sir R. L. Playfair of a tour along the coast of Tunis gives the following notes on the cultivation of desert land. At Gabes, he says, a great improvement has taken place in one year. Only two stone houses existed twelve months since, and now there is quite a small town. Oued el Melah, 8 miles from Gabes, is where Colonel Rondaire proposed to make a cutting which should inundate the Sahara. Artesian wells have been sunk, and Consul Playfair says:—"It is not more than six months since any attempt was made to bring the land around under cultivation, and already the most surprising results are apparent. The ground is perfectly flat and sandy; it was covered more or less with sparse scrub, which by decomposition during centuries had added a certain amount of vegetable matter to the soil; indeed, in years of unusual rain the Arabs had been in the habit of cultivating small patches here and there; but for all practical purposes the land was desert and absolutely valueless. Now 150 hectares (375 acres) have been cleared, arranged for irrigation, and sown with cereals and Lucerne; a vegetable garden has been made, and a nursery of young trees planted. Everything is looking flourishing and hopeful. Wide roads have been laid out in all directions, and marked out by rows of Date Palms; even the commencement of a village has been made. Two other artesian wells are being sunk, one on either side, and when all are completed it will be possible to irrigate 3000 hectares (7500 acres) of land."

Mr. Viccars Collyer is now in Palestine on a visit to Mr. Lawrence Oliphant at Haifa (or Caifa), with a view to open up commercial relations with that country in connection with horticulture.

Euonymus japonicus.—Have any of our correspondents noticed the circumstance that the golden variegation is much more prominent in some seasons than in others? A Paris correspondent writes that in some years the yellow variegation is so indistinct that the difference between it and the green form is very small, while in other seasons, as in the present, the yellow colour is very marked.

Taunton Deane Horticultural and Floricultural Society.—The annual exhibition of this Society is fixed for August 12, and will take place as usual in Vivary Park. The sum of £20 is offered as a 1st prize for twelve stove and greenhouse plants in flower; the 2d and 3d prizes are £12 10*s.* and £7 10*s.*

Royal Geographical Society.—General R. Strachey has been elected President of this Society in place of Lord Aberdare.

Trade Announcements.—Mr. A. Grice, for many years the trusted and respected manager of Mr. T. B. Thomson's seed business at 20, High Street, Birmingham, is just entering the service of Messrs. Blake & Mackenzie, School Lane, Liverpool, and, in addition to taking the journeys hitherto done by Mr. W. Blake, the senior partner, he will also take charge of their catalogue department, now a very important feature in the business. Mr. Grice leaves Birmingham amid the great regrets of a large circle of horticultural friends, whose best wishes follow him as he enters upon his new occupation. —The nurseries of Hans Niewand, recently advertised for sale in our pages, were knocked down as "a going concern" for £2800 to Mr. R. H. Vertegans, of the Chad Valley Nurseries, Edgbaston, Birmingham.

Publications Received. — *The Geology of England and Wales*, by H. B. Woodward, F.G.S. (London: G. Phillip & Son, 32, Fleet Street, E.C.). —*The Chrysanthemum Annual*, 1887, by Chrysanthemum Growers. (Merton, Surrey: L. Castle, Hotham House).—*Short Walks from Bury St. Edmund's*, by P. Grieve. (Bury St. Edmund's: 26, Hatter Street).—*Villa Gardening* by E. Hobday. (London: Macmillan & Co.)

Notices of Books.

Reports on the Colonial Sections of the Colonial and Indian Exhibition, 1886. Issued under the Supervision of the Council of the Society of Arts, and edited by H. Trueman Wood, M.A., Secretary to the Society. (London: William Clowes & Sons, 1887.)

These long-looked-for reports, which form a volume of some 500 pages, are, we presume, the final official records of last year's Exhibition. The contents of the Exhibition have been treated of in twenty-three separate reports, each by a different writer, the names of some having been scarcely heard of before. Though the book will be useful as a record, in one handy volume, of the raw products of the British colonies, it is nevertheless disappointing, consisting as it does for a great part of extracts from the catalogues of each colony. After the issue of such descriptive catalogues and handbooks as most of the colonies prepared during the period of the Exhibition the necessity for a repetition of much of the matter, though stamped with the names of certain gentlemen whom the Prince of Wales was "pleased to nominate," is not apparent. What would have been a useful permanent record of the show would have been the writer's own opinions upon the value or utility of the products based upon his own experience or upon that of experts who might have been associated with him, or upon practical experiments or examination, such, for instance, as that of Mr. Cross on "Miscellaneous Fibres," or the second report on "Timbers," by Mr. Allen Ransome.

Several of the reports are remarkably weak, notably those on "Drugs, Chemical and Pharmaceutical Products," "Gums, Resins, and Analogous Substances." Here is a paragraph from the former report:—"Myrica cordifolia yields an excellent wax, which is used for candles;" this occurs on p. 255, while twenty pages further on, in the report on oils and fats, and under the head of "Myrtle Wax," this substance is stated to be "yielded by several species of Myrica (Cerifera, serrata, quercifolia, &c.). The reputed source of this product is said to be North America, but in this instance the exhibitors were Messrs. Hall & Zinn, of the Cape of Good Hope." Why Myrica wax should be included in a report on drugs it is difficult to understand, and the reporter on oils and fats seems to be unaware that these plants are found both in America and South Africa. A better joke, however, is to follow. Here is an extract from the same report on oils and fats, p. 265:—"A fat closely allied to Palm oil is Shea butter, also known as Galam or Bambouk butter, the produce of several varieties of Palms in the Niger districts, chiefly the Bassia Parkii." This is evidently a new discovery, the classifying of a Sapotaceous plant in the order Palmaceæ.

Leaving "oils and fats," with its other blunders, and the misspelling of botanical names, we find a good start on the first page of the report on "Gums, resins, &c.," for we are there told, under the head of New South Wales, that "the hard brittle resin of the Xanthorrhœa hastilis, a *Tree Fern* of the colony, is known ordinarily as grass-tree gum or green maccroides." It is needless to say that the italics are our own. Referring to the Xanthorrhœa resins further on, however, under Western Australia, the writer alludes to the interesting nature of these resins, and hopes that they may be more thoroughly investigated.

Timbers are treated of in two separate reports, but as they are arranged alphabetically, each under its own country, it follows that the same wood, where the tree is widely distributed, is described in each colony. In the consideration of Queensland woods the following paragraph occurs:—"Cedrela australis, F. Muell., the Red Cedar or Toon tree, native name Mamin and Woota. A very large tree, yielding a beautifully grained, red-coloured wood, easy to work, and said to be very durable. This will be found a valuable wood for cabinet purposes, and would be useful in many ways. It is in general use in the colony."

This individual paragraph would have been much more valuable had the information been attached to it that the tree, known now as the Cedrela Toona of Roxburgh is the same species that yields the Toon wood of India, where the tree is found, as well as in Burmah. But why the same woods should be treated of separately in the two timber reports it is difficult to understand. This is what the writer of report No. 2 says:—"Red Cedar (Cedrela Toona). This resembles the wood last-mentioned (Dysoxylon Fraserianum), but it is somewhat inferior. It is softer and lighter, and considerably coarser in grain. It planes and works very well, however, and would do for common cabinet-work. It is already known in the English market as Moulmein Cedar."

If the two reporters on timber had worked together and combined their matter, such information would have been more easily available. We are bound, however, to say that the second report, being the result of actual practical experiments, will be found very useful.

The Hardy Fruit Garden.

REMOVING PROTECTION.

The materials that have been in use for the protection of various kinds of fruits on walls should now be partially dispensed with, if consisting of Fir branches or other material of a temporary character; but "Frigi Domo," coping boards, and glass copings may remain till we experience milder weather before finally dispensing with them.

Syringing and Watering.

Advantage should be taken of mild weather to ply the syringe or garden engine among Apricots, Peaches, and Nectarines, taking care to perform the operation early in the day, so that the trees will become dry before evening; this will greatly tend to keep greenfly and red-spider in check; and should very dry weather prevail Apricots, Peaches, and Nectarines will require occasionally thorough root-waterings, not forgetting all newly planted subjects.

Gooseberry Bushes.

These should be watched for the first appearance of the caterpillar or the magpie-moth; as soon as either is observed the trees should be dusted over with White Hellebore powder, which will greatly tend to keep these pests from spreading. Early attention to this point will save much unnecessary labour in hand-picking, for when deferred until the fruit attains size the use of the Hellebore powder becomes unsafe. *E. Ward, Hewell Gardens, Bromsgrove.*

Forestry.

BARKING OAK.

Cold east winds prevailing during the greater part of April have retarded vegetation considerably, and barking is at least a fortnight later than usual. Everything should be held in readiness for beginning to bark the early Oak trees in a few days, the Oaks for removal marked and numbered, the various squads of workmen arranged, tools looked out, sharpened, and repaired, rick covers examined, and a quantity of rails carted to where the bark is to be arranged for drying, these being useful in the formation of trellises for supporting the bark.

The proper time to commence barking is immediately after the sap begins to flow freely. The richest and best bark is then obtained, and with the least amount of labour—a matter of importance at the present time, when the question is being asked, "Is Oak bark worth removing?"—rather an impertinent question, no doubt, but one that is well worthy of consideration, and not far from the truth.

To obtain the best quality of bark requires the utmost endeavours of those in charge of the work, and the forester to be really successful must make a bold start at the earliest moment, and prosecute the work with unflagging energy until it is completed. In order to be successful he must be supplied with plenty of "hands," and with all necessary appliances for the proper curing and storing of the bark. Drying-sheds and a plentiful supply of rick-covers or tarpaulins should always be at hand, for a shower of rain often undoes what it took a week of fine weather to bring about as regards getting the bark in a fitting condition for the final stacking.

With everything in readiness, one man should be told off to strip off the stem of each tree to be felled for its bark for a distance of, say, 5 feet from the ground, this effecting a great saving of the bark otherwise lost or destroyed by the men in preparing the trees for felling.

Following in the track of this pioneer is another person, whose duty it is to "lay in" with an axe the trees from whose stems the bark has been removed, and another couple of men with a boy in attendance follow up and carefully fell the trees by means of a saw. The use of this latter implement should always be insisted on, as well as low cutting, both for the benefit of the timber and the stools. Removal of the branches from the trunk should next take place, these being pruned up to about 2 inches in diameter at the small end, and carried to some convenient place for the removal of the bark. Previous to removing the bark from the stem and larger limbs it should be scraped, or in other words deprived of all moss or other vegetable growths by tools set aside for this purpose. In our damp climate this removal of moss from the tree trunks has to be engaged in wherever Oak is felled for barking purposes, and it ofttimes occasions a great amount of extra labour, particularly in damp or maritime woods. The body bark may be removed in not less than 3 or 4 feet lengths, but in the case of the limbs and smaller branches no hard-and-fast lines can be laid down, the operator being guided by his own judgment and knowledge, but wherever it is practicable by all means let it not be of less length than above-named. Hammering of the bark should never be permitted where it can be removed without it, as such a process lessens its value very considerably. The stem bark is always readily enough removed without hammering, but in the case of the smaller branches it is often found necessary to have recourse to this method, which is done by placing the branch on a flat smooth stone, and gently striking it with the wooden mallet until the bark becomes sufficiently loosened to remove readily by the hand or peeler.

As the bark is removed from the trees it should be conveyed to where the drying stages are erected and spread out carefully, the pieces being placed parallel to each other. Place the smaller pieces of bark on the stages first, and the body portions on top

as a protection from rain, should such come on while the work of barking is on hand. In all cases keep the inner or fleshy side downwards. The drying stages are easily erected by procuring a few forked stakes of 5 feet in length, and driving these into the ground in two parallel lines 3 feet apart, and at a distance of 8 feet or so from each other. Light rails of any kind should then be placed on the forked stakes, which, with a few cross-pieces laid transversely, will form a capital and cheap erection for drying the bark. The stages may be 3 feet high in front, and 5 feet at back, and should always be placed in an open and airy portion of the wood, or, better still, outside the wood altogether.

Where Oak-barking is engaged in annually we have found it a satisfactory arrangement to have a number of trestles for drying the bark on, these being placed at 12 feet apart, and a few rails laid from one to the other on which to rest the bark. If well made, and taken care of, the same set will last for nearly a score of years.

When bark is stripped without hammering, and carefully staged during fine weather, no turning is required until it is ready for delivery, which, with ordinary weather, should be in about fourteen days. A good test as to when the bark is ready for stacking is by breaking several pieces over, and should they snap freely, and appear quite brittle, the whole may be considered as well harvested. It is, however, quite as necessary to guard against immoderate sunshine as it is against rain, for the former often makes the bark that has been exposed to its rays for too great a length of time so brittle and powder-like when broken over that it is only with great difficulty it can be kept from breaking into pieces, and its value is considerably lessened in consequence. Should wet weather set in while the bark is on the drying stage, every fair half hour should be engaged in turning the bark so as to prevent decomposition and heating setting in, always remembering at the same time to keep the fleshy side downmost and the larger pieces atop, so as to run off the rain and guard the smaller and more readily destroyed pieces from excessive damage. Bruised bark rapidly deteriorates in wet weather, and should, therefore, be well covered up or shielded from the rain by the larger trunk pieces. After being properly harvested the bark should either be housed or stacked—the latter we consider the better method—and so made secure against the inclemency of the weather. The stack may be formed not more than 6 feet in width, of a corresponding height, and any length requisite to contain the bark to be stored. Keep the smaller pieces of bark in the centre, and lay aside the larger or body bark for the outside and for thatching purposes, and in building the stack never lay the pieces of bark horizontally, but slightly inclined upwards from the outside of the stack. By covering the bark stack with a tarpaulin the ingress of damp is totally prevented.

Oak bark of the best quality, when properly harvested, is of a desirable creamy colour inside, and loses during the process of drying about one-third its original weight, or what it was when removed from the tree. Inferior or second-rate bark, that is deficient of tanning matter, usually assumes a dark brown colour. The best age at which to fell Oaks for bark stripping is from twenty to thirty years, it having been found out that when under the former age it has not arrived at perfection, while it diminishes considerably in the yield of tannin after the age of thirty years. Bark stripped at the proper time in spring contains fully four times the quantity of tanning matter which can be found in the same weight of winter-cut bark. The yield of bark from a given number of tons, cubic feet, or loads, varies greatly, much depending on the age of the trees, the situation and aspect in which they are growing, as well as upon time of stripping. Trees growing in a southern aspect and in hollow sheltered ground usually yield the finest and heaviest bark; and the more sapwood the tree contains, or, in other words, the more rapid its growth, so in proportion will be the value of bark produced. Six hundredweight of bark for every ton of measurable timber may be considered as about the average yield of a healthy tree thirty-five years of age, and peeled down to branches 1 inch in diameter. This, however, refers to single or specimen trees, for those growing closely together in a wood will produce thin bark, which is light, and with less tannin proportionately, than such as is grown singly, and thicker in texture.

In computing the quantity in weight of bark to be got from a certain number of trees, the forester has a task that is by no means easy to perform, but, taking everything into consideration, a good safe average is to allow or estimate one ton of harvested bark for every 140 feet of measurable timber.

Hedgerow timber, if grown in a suitable situation, often yields a greater quantity of bark to the ton of wood than does plantation timber, and we have known a ton of excellent bark to be got from three times that weight of wood; but this is exceptional, and would form no safe average for timber generally. *A. D. Webster, Penrhyn Castle.*

THE BULB GARDEN.

DOUBLE AND SINGLE DAFFODIL FLOWERS FROM THE SAME BULB.

An interesting specimen, illustrative of the natural history of double Daffodils, was lately sent to to me by Captain Dorrien Smith, of Tresco Abbey. It consisted of a bulb of the Tenby Daffodil, having three divisions (figure enclosed), of which the largest or central was flowerless, but of the two laterals one had produced a perfect typical single flower, the other a double flower, corresponding in every respect to the common large double Daffodil of gardens. The three divisions of the bulb were, it is true, separable, but it was easy to see by the way they fitted together that they had grown out of one bulb since last summer. In fact Captain Dorrien Smith told me that the bulb which produced these flowers was one of a set which had been exhibited as dry bulbs at a local flower show last August, and had won a prize, and that he planted the prize bulbs apart; at that time the bulb, which is now divided, was entire. I have long known that double Daffodils are found mixed with the peculiar local single Daffodils in the meadow near Tenby: these are collected and sold as "double Tenby," or "Obvallaris," the name by which the Tenby Daffodil is conventionally called by bulb dealers, and I have often seen specimens of them. Certain experts in Daffodils have generally asserted that they are "just common garden Daffodils," accidentally mixed with the single Tenby Daffodils; and that these latter, if they could be found double, would have the perianth divisions and those of the corona of the same colour, and would be self-yellow. But, as a matter of fact, this double Tenby is not self-yellow, but quite as bicolorous as the large garden double Daffodil, called Telamonius flore-pleno by the dealers, and resembles it in every character. There are other particulars in which the double Tenby differs from its single form. The perianth divisions of the latter are very broad and stiff, obtuse at the points, and imbricated; but in the double flower the outer row are narrow and twisted, acute at the points, and quite free and unimbricated to the bottom of the dividing lines. These lines are open to the top of the pedicel, which is elongated upwards so as to comprise both seed pod and tube. This formation is common to most double Narcissi, the fruit and tube proper being obliterated and replaced by a pedicel. In this double Tenby there is no trace of either style or filaments. Perianth and corona are alternately repeated about three times, and the inmost corona has petaloid ligules within. Double Daffodils vary in the habit of retaining the generative organs; they often continue even in the very double forms, which in many cases produce fertile seed. I suppose no botanist or experienced gardener doubts that single-flowered plants often "sport" into a double form; but as the fact of single Daffodils producing double-flowered offsets has often been denied, it is interesting to know these circumstances. Captain Dorrien Smith suggests that this instance may prove that the large double Daffodil of gardens originated from the Tenby Daffodils. Perhaps it rather proves that when N. Pseudo-Narcissus doubles, it has a tendency to disguise the varietal characters which it had as a single flower, and to conform to one double type. I have had many large double Daffodils sent from Tuscany, which grow in the same clumps with the large and long-crowned single forms sold by dealers as "King Umberto," with which no doubt they are identical; but they are also undistinguishable from the double Tenby. So is the double form of pallidus præcox, the pale Pseudo-Narcissus of the Low Pyrenees, which becomes double in the gardens of the South of France, as well as in some English gardens. With regard to the doubling of the common wild Daffodil of English meadows I hope to have more evidence before the end of spring. *C. Wolley Dod, Edge Hall, Malpas.*

THE KITCHEN GARDEN.

Celery Trenches.—Trenches must be prepared to receive the earliest plants in a single row, and should be thrown out 1 foot deep and from 1 foot 2 inches to 1½ foot wide, which, when manured and ready for planting, should be from 3 to 4 inches below the surrounding surface, a space of 3 feet separating them from each other. For the later crops the trenches are best constructed in such a manner that the plants may stand on a level with the surface. Wider trenches, with space sufficient to plant double rows, may also with advantage be used for planting, a greater breadth between the rows being afforded. The space so afforded can meanwhile be planted or sown with Lettuce, Spinach, and Radishes, which would be cleared off before earthing-up time. Plants should be prepared for planting out by being gradually hardened off, so that when put into the trenches little check is given. Water and shading, if found necessary, must be afforded till they commence growing. Where slugs abound the earth in and around the trenches should be dusted before planting with quicklime in a powdery state; this precaution must be repeated several times during the growing season, and is best performed in the early morning and evening. Prick out on prepared beds young plants for successional and main crops. A rich compost of 4 inches in thickness resting on a hard firm bottom is the best form of bed, and space must be left between the plants to prevent crowding.

Vegetable Marrows.—Those plants that have been grown on in large pots—for fruiting under glass—will now be in a bearing state, and will require assistance at the root by means of a top-dressing of rich soil, fish, or other suitable manures in a liquid or solid condition. Dung-frames, wherein these and Cucumbers are planted out, will need to have the linings renewed from time to time, and the lights covered at night, so that the requisite temperature is maintained. From the middle to the end of May, Vegetable Marrows may be planted outside, some kind of protection, however, being afforded them for a time.

General Work.—The quarters which have been cropped with winter stuffs should be dug over and got ready to receive such crops as Scarlet Runners, Celery, Strawberries, and the like. Peas will require earthing-up and staking, and sowings of late ones made, which should include Veitch's Perfection, Sturdy, and the best of all late Peas, Ne Plus Ultra. Another good sowing of Broad Beans should be made for late use, choosing a north cool border, or a somewhat similar cool position. The earliest planted ones will now be making good progress, and would be benefited by being hoed through, and afterwards earthed-up sufficiently high to give a slight support to the stems.

Lettuces.—Plants raised from seed sown in February under glass, and afterwards pricked out, should be transplanted at distances of from 8 to 12 inches apart, according to the habit and size of the varieties. Good rich rather light ground should be selected, and at planting time if a layer of fresh horse-droppings can be given so much the better; the latter should be spread over the surface and lightly forked in, deep enough only to allow of the roots coming into contact with it. Copious waterings will be necessary during dry weather to produce good Lettuces; the surface soil between the plants should also be frequently stirred with fork or hoe. Maintain a succession by pricking out plants from later sowings; but future plantings will be best made in drills on partially shaded and cool borders, sowing the seeds thinly, and utilising the surplus plants when large enough for additional plantings. *John Austen, Witley Court.*

EULALIAS.

Eulalia japonica variegata.—Although this beautiful Japanese grass is quite hardy, and thrives well in the open ground, yet it is much improved by being grown in an intermediate or stove temperature, and under such treatment it forms a very handsome plant for decorative purposes, and as it will stand exposure well, it may be used for many purposes where more tender plants would be damaged. It is easily increased by division, and will grow freely in any ordinary soil. Plants that have had a period of rest in the autumn may be divided and potted any time during the winter, and if placed in a growing temperature they will soon make a start. For pot culture it is better to divide smaller plants from time to time, as older plants are more liable to throw up flowering stems; and although the inflorescences are very attractive, it is the foliage that is the most effective when grown as a pot plant.

Eulalia japonica zebrina.—This is also a very pretty variety; the variegation, instead of being in stripes lengthwise, as in the case of the first-named, is produced by the leaves and stems being regularly marked crosswise with yellowish bands, and to bring out the colour properly the plant should be well exposed, and not grown on too vigorously. *A.*

FLORISTS' FLOWERS.

THE CARNATION AND PICOTEE.

I am writing this on the last day of April, the time when we usually place the plants out-of-doors for the summer, but this year they are not ready to go out. To look at the plants one would suppose that it is the 30th of March. The growth they have made is very weak. Some growers place their plants out-of-doors as they are potted into their flowering-pots. I used to do so at first; but even if we started potting in fine weather, there was no certainty that it would continue, and probably the plants would be covered over with snow, or, what was even worse, dashing cold rains would harden the potting soil before any roots had penetrated it. Covered with the glass lights they are secure, and require no water for about three weeks after being repotted. Our plants require to have the surface soil to be stirred with a pointed stick, and the small weeds removed. Old plants out-of-doors that were not layered have suffered from frosts, but young plants have not. All of them are now spindling to flower, and are much improved by having the surface of the soil stirred with a Dutch hoe, or some such tool, afterwards placing on the surface about an inch of short manure; or, better still, a mixture of equal parts loam, leaf-mould, manure and sand.

We have just now pricked out the seedlings that were raised from seeds sown in pots, and the pots plunged in a gentle hotbed on April 1. In seven days the young plants began to appear, they being pricked out two weeks after. Shallow boxes are used for pricking out; the plants being put out an inch or more apart. In June they will be planted out where they are to flower, at the distance of 18 inches from plant to plant. Some of these seedlings will produce as many as 150 to 200 flowers each; the period of bloom being looked forward to with great interest.

The Pink.

These are of course earlier and hardier than the Carnations, and the plants have stood the winter very well. The beds should now be surface-dressed as advised for Carnations, no other attention being necessary at present. We shall place sticks to the stems when they have grown a little more, and those who want to see a good display of bloom will allow all the side blooms to remain. Large flowers for exhibition are produced by thinning them out. *J. Douglas.*

VEGETABLES.

THE HARDINESS OF STANSTEAD PARK CABBAGE LETTUCE.

Many gardeners, like myself, are anxious to send as complete a salad as possible to their employer's table all the year round; to do this in the North, we all know, necessitates a little management, and the hardiest must be grown for winter and spring use. One of the most useful kinds for winter is the above-named Lettuce. Despite the severe weather we had, it has stood without injury, while others of the supposed hardy kinds of the Cos class have either died outright or been badly damaged, although standing in the same aspect (at the foot of a south wall). By putting the Stanstead Park Lettuce in batches into the Mushroom-house for a few days, we manage to get some good bleached hearts, which are much appreciated. *C. Flack, Cholmondeley Gardens, Malpas.*

Seakale.

Whilst all seeds and hardy plants, but especially vegetables, seem to be struck with paralysis, Seakale at least is so hardy and determined that it waits for nothing, but forces growth in spite of weather. It is a matter for wonder that this valuable product is not ten times more widely grown. Here we have admittedly one of the hardiest and easiest cultivated of vegetables—one, too, that is most accommodating in the matter of soil and situation, and yet it is to be found only on the tables of comparatively wealthy people, and is an impossible luxury to myriads of the population.

At a time when all members of the Brassica family are abnormally scarce, and over vast areas of land devoted to vegetable culture just now hardly a green leaf is to be seen, when Broccoli has been largely destroyed, Greens withered and baked in the wind, when Spinach has totally failed and Turnip-tops are thin and late, what a gain it would be could we have an ample supply of Seakale to send into the market. Here, too, we have a vegetable which is much less than others dependent upon temperature, so that we in this none too hospitable climate have some chance of holding our own if we care to do so.

Much of the ground now lying waste or employed in producing crops which fail to obtain a profitable return would, with proper cultivation, produce good Seakale, and prove doubly, nay, trebly a blessing because, in furnishing the mass of the people with a wholesome and cheap vegetable great good would be done, its cultivation would employ labour much more largely than would ordinary field crops; and, not least, the grower would have something at least to give him a profitable return for his outlay. The one difficulty in regard to Seakale is, that before it becomes marketable it must be blanched, but still it is certain that, by means of the soil alone, blanching may be produced easily. Somewhat deep sandy soil, deeply worked, and heavily manured, presents the best elements; but even where sandy soil cannot always be had, at least fair loam, deeply broken up, will do well. Really Seakale seems to thrive best in a stiff soil, but the surface needs much loosening when needed for blanching. Planted in extensive breadths, and in rows some 20 to 24 inches apart, it is not difficult by using the horse-hoe to loosen and pulverise the soil to obtain the needful blanching, material in abundance, and even a moulding-plough, as employed in Potato breadths, might be used to earth-up the soil into ridges over the Seakale. This form of blanching does not lead to successional cuttings for any lengthened period, but may reasonably extend over a month at least, whilst growers must ever be planting new breadths and destroying old ones, and the latter, lifted and crammed thickly into sheds, or in any warm places, could be blanched and put into the market some few weeks earlier than the outdoor growths would be ready. Once a stock is obtained from seed sown in the spring, a perennial supply of root-cuttings is ensured, and many thousands of such sets may be dibbled out into properly prepared ground in a short time. A wide field seems open to growers in the above direction. *A. D.*

Hardy Broccoli.

It is a good time now to compare notes as to the havoc made by the frost in the past winter; and I was forcibly reminded of this by a fine plot I saw in the kitchen garden at Burghley on the 16th inst.—a bright sunny day. The plants looked very fresh and perfect, and were counted by one of the gardeners in my presence, the result being 847 alive, and eighteen dead, or a loss of just about two per cent. The variety was the Victoria, which is one of Mr. Gilbert's raising, and is the best late variety I am acquainted with.

The above result says a great deal in favour of the system of culture pursued there, which is no secret, and may be briefly described thus:—Seed sown early in May; plants put out as soon as convenient firm ground, without manure or digging—such, for instance, as an old Strawberry bed where the plants have been cleared off as soon as the fruit was all gathered. Holes for the Brocoli are made with a crowbar, the surface of the soil being loosened with a Burghley cultivator, which resembles a Canterbury hoe made much lighter than usual. Thus treated the plants become dwarf sturdy examples, which do not present a long bare stem for the frost to seize upon, but their tissues get well solidified by the sun and free display of air amongst them before severe weather comes.

At Burghley the soil is such that most gardeners in the country would be glad enough to get, and none would complain of, viz., part of an old deer park that has been well-worked for nearly 200 years, and may be described as a sandy loam about 3 feet deep, on the Red Sandstone formation; situation high and flat, and well sheltered by walls. Brocoli attempted to be grown there in the orthodox manner of giving plenty of manure and on a loose soil, would be to court failure; contrariwise, in a poor thin soil, the Burghley system would not answer, as the heads when ready for cutting would not be large enough to please the consumer. *W. H. Divers, Ketton Hall, Stamford.*

POT-STRAWBERRY CULTIVATION AT MEREWORTH CASTLE.

Paying a visit to Mereworth on April 27, I was much struck with the evidence of the successful cultivation of the Strawberry in pots at that place. The variety grown was Sir Joseph Paxton, which is a favourite with Mr. Markham, who told me he forces yearly about 2000 of the variety. One of the houses devoted to Strawberry forcing was a very pleasing sight, for on entering the house the eye lighted upon over 2000 berries just ripening, finely coloured, as Sir Joseph Paxton is when well done. Each plant was maturing from six to ten very fine berries, and a few had been gathered for use. The arrangement of the foliage and setting up of the fruit was excellently done, each fruit being well set up to the light, and which gives the idea of profusion on viewing them on entering. The ad-

joining house of Strawberries that are coming on to succeed the others, contained plants that were also full of promise. I noticed the plants were potted into 24-size pots, which accounts for the robustness and vigour of the plants, so much better than what is observed in those potted into the usual size—32's. Where room can be given for the larger size pot, the chances of a fine crop are much improved, as is instanced here. One good feature I noticed was that no other plants were allowed in the Strawberry-houses, the fruit-houses being devoted entirely to fruit growing—an excellent arrangement where it can be carried out.

The Vines were observed to be full of promise, as were also the Peach-houses, where there is likely to be a fine crop of fruit. Mr. Markham is an excellent fruit-grower, and everything else throughout the place seemed to be well cared for. *Robert Smith, Yalding.*

days, and giving water when considered necessary.

Thus treated, the plants will flower in September next, when the best-flowered tubers and those having flowers of a good type should be kept, and the others thrown away. By inserting the leaves with a portion of the stalk attached in small pots filled to the rim with sandy soil, and then placed on a shelf in the stove, the stock of the best varieties can be increased. By next spring these leaves will have formed tubers, and should then be potted singly into small pots, and at the same time this year's seedlings should be shifted into 6-inch pots, using three parts of fibry loam and one of leaf-mould and pulverised horse-droppings, with a dash of sand added. When the roots have pushed well into this compost and the flowers begin to show, weak liquid manure may be given. When the plants are in flower a lower temperature and a less humid

arrangement. The seeds should be placed on edge, covered with some soil that will not pack, then, if exposed to a temperature of 75° to 85°, they will be up in about ten days with a loss of not over 10 per-cent. The seeds are placed on edge for two reasons; first, because in that position there is less chance for the accumulation of superfluous moisture; next, that the tender plantlet may have less weight to raise while emerging. Like most other seeds they should be covered to exclude light and retain moisture until the seeds germinate. *American Florist, April* 1.

Trachelospermum (Rhynchospermum) jasminoides.

This sweet-scented pretty greenhouse climbing plant still maintains its popularity with gardeners and amateurs, which is not to be wondered at, seeing the varied purposes to which it may be put, the shiny green lanceolate leaves and white Jasmine-like flowers telling well as drapery to wall-pillars, or

Fig. 117.—Berberis japonica: berries purple. (see p. 609.)

Cultural Memoranda.

Gloxinias.

These may easily be raised by sowing seed in a well-crocked pan filled to the rim with finely-sifted loam and leaf-mould, with the addition of a good sprinkling of sand. The soil should be made moderately firm with the hand before sowing the seed, which should be covered lightly with some of the same soil, watered through a fine rose, and put in heat. When the seedlings are large enough, they should be pricked out in a shallow box at 2 inches apart, put back in heat near the glass, be watered, and shaded from the effects of the sun for a few days, and afterwards potted singly into 3-inch pots before they become crowded in the box, growing them on in heat near the glass to prevent the plants from making a weakly growth, syringing them overhead morning and afternoon on bright

atmosphere than that previously given them should be afforded. *H. W. W.*

Asparagus plumosus nanus.

This is best propagated by division of the roots, and it may be done at this season. Wash the soil from the roots as carefully as possible, and divide into as many pieces as there are separate crowns. Where necessary use the knife, but take care not to cut off any of the shoots. Pot the pieces in small pots, and if possible plunge in a gentle bottom-heat and keep close until the roots begin to start. Both plumosus nanus and tenuissimus may be propagated from cuttings in May. Place them in the propagating bench or in pans and cover with a glass, and keep close until new shoots push up from the base.

Cobœa Seed.

The seeds of Cobœa scandens are among the surest to germinate, nor is there need of any elaborate

trained over wire in pots. Grown in the last-named mode it is frequently met with in collections of flowering plants in the exhibition tent during the summer months. It is easily increased by cuttings of the young growth inserted round the side of small 60-sized pots, in sandy soil, the pots being plunged to the rim in brisk bottom-heat, and near the glass. They should be potted when rooted into small pots, using a mixture of peat and loam and a sprinkling of sharp sand, be put back in heat, watered, and shaded for a few days from sunshine until the roots have pushed into the soil, subsequently shifting into larger pots as they fill the pots with roots, using the peat and loam in a rougher state in proportion to the size of the pots into which they are potted. The plants should be syringed overhead morning and afternoon on bright days while they are growing, and until they come into flower, when the syringing should be discontinued, and the plants subjected to a drier and airier

atmosphere. While the plants are growing supplies of weak tepid liquid manure may with advantage be applied at the roots two or three times a week, always providing that the application of water thereat is necessary that number of times. *H. W. W.*

HOME CORRESPONDENCE.

SELF-HELP SOCIETY. — "Forester's" outline sketch of a society for gardeners under the above designation introduces a novel element into beneficial objects of an associated nature. In the case of clubs established to afford help in times of sickness or death, a safe basis is found in tables prepared by the Registrar-General, and therefore needful contributions can be exactly estimated to ensure solvency; but it is hard to see how any basis can be found for a system of payments in relief in the case of want of employment, as there are no data upon which to proceed, and I fail to see how a government official could register any such association. Without doubt the objects are excellent, as of course all such objects are, but in carrying them out much mischief may be done; and it would be exceedingly harmful were any society of this kind having obtained payments from a considerable number of gardeners, and probably mostly necessitous ones, to fail because it was found that the numbers out of place and demanding help were far out of proportion to the percentage anticipated by the promoters. "Forester" thinks that if a man cannot secure a situation in twelve months, then he cannot want one, but it is obvious that the formation of this self-help society will not increase the number of situations, whilst it is certain that the number of gardeners, and consequently applicants for situations, is increasing. But the payment of 10*s.* or 15*s.* per week to a man out of place for six months, whilst most helpful to all may not improbably serve to induce some to be less anxious to obtain places than now, so that there would be every prospect that the society's funds would soon be swallowed up by weekly out-payments. "Forester" assumes that at the end of the first year, with 100 members, £145 would be obtained, and that the interest arising therefrom would pay certain expenses. What interest is to accrue to that sum which would be in process of paying in by instalments during the year, with Post-office Savings Bank interest at 2½ per cent., it is hard to say; but the matter is worthy of mention as showing that a sanguine temperament may outrun business discretion. The proposed sum of 2*s.* 6*d.* annually for management expenses seems very large, as it really means £12 10*s.* per 100 members. I belong to a building society the entire work of which is done for 1*s.* per share per annum, and there are over 1000 shares, so that the work is heavy. Why cannot friendly societies be conducted upon similar economical methods? I submit these objections to the consideration of "Forester" and others. *A. D.*

GARDENERS' BENEFIT SOCIETIES.—I notice in the letter of "Forester," in the last issue of the *Gardeners' Chronicle*, that he refers to the United Horticultural Society being a sick benefit society only, and asks why it is that it is not better known amongst gardeners. He then refers to men becoming members of other societies having lodges in their vicinity. Now I am one who thinks that it is a mistake not to make the benefits accruing to members of the United Horticultural Provident Society better known. I know several gardeners who are sorry they were not made acquainted with it sooner. I have belonged to a benefit society for a number of years, but I consider that by reason of the economical way in which the former Society is managed, and the benefits which are derived from it, such a society deserves to be better supported by the craft. The new Society whose claims "Forester" advocates will be a good thing when fairly established; but I would urge my brother gardeners not to neglect to join a sick benefit society, and I am convinced that they will find in the United Horticultural Provident Society one that will answer to their needs. "Forester" has evidently overlooked the fact that provision is made for old age in the plan of the Horticultural Provident Society. I am also an upholder of the orphan scheme just ventilated in your pages, and trust it will meet with the success so good an idea deserves. *A. G. Brown, Finches, Lindfield.*

THE UNITED HORTICULTURAL PROVIDENT AND BENEFIT SOCIETY.—That this useful Society has not made great progress during the twenty years it has been in existence is entirely its own fault. The committee and members were content to meet year after year without taking any steps whatever, other than by the recommendation of its members to make the existence of the Society known, and yet it steadily progressed, and at the present time it can pay twenty shillings in the pound, and have a handsome reserve over. I think it would be extremely difficult to find a Society so inexpensively managed as this. During the past four years a little more publicity has been given to it by means of notices of its annual meeting having appeared in the gardening Press; and one gratifying result is that the number of its members has nearly doubled within that time. Even now it hides its light far too much under the bushel of comparative obscurity, but at every monthly meeting new members are being added. I am particularly anxious that the young gardeners should become interested in it, because it encourages habits of thrift, and the making of provision for times of sickness and old age. I want the nursery and seed firms to support it by honorary subscriptions, because it is a good thing, and deserving encouragement; but it is only gardeners who can derive benefit from it. I am gratified in being able to state that several new honorary members have joined the Society since Christmas. Such honorary subscriptions can be utilised for the management fund, and thus supply means for giving greater publicity to the benefits accruing from membership. There is plenty of room for a Gardeners' Self-Help Society also. There is no necessity for decrying one at the expense of the other. They will stand or fall according to their merits; and I still think, despite "Forester's" criticism, that the United Horticultural Provident and Benefit Society is well worthy the support of gardeners. *R. Dean.*

ALPINE DWARF PHLOXES, P. AMŒNA AND P. NELSONI.—To fill up the blank after the bulbs cease flowering—in the south of Ireland, except the double Poeticus and three others, all varieties of Narcissus with me are now over outdoors—no lover of hardy outdoor flowers should be without a selection of alpine Phloxes. The above are two of the dwarfest and loveliest, rising only a couple of inches, spreading around, and forming charming little cushions, the first being in colour of the loveliest pink, and the latter of the snowiest white, with curious radiating mossy foliage, spreading all round like one of the mossy Saxifrages—one of the hardiest flowers I know, growing and evergreen without intermission. Both are in bloom in the borders with me for the past fortnight. *W. J. Murphy, Clonmel.*

MORE GARDENERS THAN GARDENS.—Under this heading (p. 553) "F. W." has a very misleading letter, and one which is very unfair to the gardeners of Scotland. "F. W." seems to have but a meagre knowledge of the subject, or he would not write as he does. Scotland is the great nursery for gardeners; apprentices are to be found in greater or lesser numbers in nearly every garden, large or small, and premiums are almost unknown from one end of country to the other. I do not know what may be done in England, whence, I assume, "F. W." writes; but in justice to us in Scotland I must call upon him to qualify his statement. Let us now look at "F. W.'s" proposals and statements—allowing the latter to be correct—for a remedy for the evil complained of: would the "forbidding by employers of premium-taking" make any real difference in the number of gardeners. On the contrary, I am of opinion that it would not reduce the number of apprentices by a single half-dozen over the country. As a matter of fact the choice is rarely between an apprentice and a journeyman, or labourer, as "F. W." seems to imply, but between a journeyman and two apprentices, as by dispensing with one of the former two of the latter may be kept, at about the same expense. The matter is one of economy for the employer, and credit to the gardener; and the gardener's credit with his employer is of far more value than a small yearly premium derived from an apprentice. Were I to suggest where the evil lies I would say it is to be found in the bothy system. Under this arrangement only the head gardener can be married, and owing to the style in which most gardens are kept a considerable number of trained under gardeners are employed to maintain them efficiently. These young men, owing to their great numbers, and the rate at which they are brought into the business, find it is quite impossible for even a reasonable proportion of them to get head places. By way of reducing the rate of production I would suggest that cottages be found for foremen who might desire to get married, so that they would then be contented to remain in the service as such for a much longer time than at present. In most cases I believe young men are more anxious to get away from the discomforts of the bothy than to get a head place; so that, by providing cottages for the foremen a benefit would be derived by the establishment and the man; and as an old servant is usually of more value than a new one, he would be better able to fill properly a head place when it turns up. *R. Bell, Morton Hall, Midlothian.* [We have received numerous letters on this subject, for which we cannot find room. Ed.]

THE WEATHER IN LANCASHIRE.—If the custom of observing the 1st of May with a "Jack in the Green" and other sprites and clowns is still kept up in the neighbourhood of London [Yes, in Wellington Street!] it is certainly to be hoped that the weather there has been more propitious, and favourable to the growth of deciduous trees than has been the case up to the present moment in Lancashire. If my memory serves me aright, the green cage into which the Jack was put was covered over with short branches of forest trees, the newly expanded shoots of spring [Our Jack was covered with Ivy]. If such a custom prevailed in this part of the country, it would have been impossible to have built up such a structure thus early in the month of May. Forest trees with us are still in a very backward state. The Willows and Chestnuts are the most forward, and are beginning to look a little green, though the leaves are still unexpanded; but the Elms, Beeches, Birches, Planes, and Sycamores. Oaks, Ashes, Laburnums, are still destitute of green of any sort—in fact the buds of many have not burst, the woods in this district having the same bare appearance as they have presented for the past six months. The glass at night runs down to freezing-point. Last Wednesday we had heavy snow, the hills near being covered a foot thick. The wind is now (Monday) blowing due east and bitterly cold, the appearances to-night indicating frost. I have heard that in our immediate neighbourhood some Damson blossoms are now to be seen. So far, however, I have not observed any expanded blooms on any standard or pyramidal Pears, Apples, or Damsons. It is to be hoped we may speedily have a change for the better, for up to the present time we have had but few days of genial growing weather. Roses are late in starting, Ivy cut back two months ago has scarcely made a move, and the early Rhododendron caucasicum roseum, that often blooms in February and March, is only just bursting its trusses of flowers. However, we must hopefully look forward to an early improvement, and bear the present ills. *W. Swan, Howick, Preston.*

GLADIOLI: HYBRIDS OF GANDAVENSIS.—As it is still good time to plant these splendid autumn-blooming flowers, and as I have had a considerable measure of success in their culture for several years, my experience may interest some of the readers of the *Gardeners' Chronicle* who may be hesitating, from hearing so frequently lamentations of failure, disease, and degeneration, from commencing their culture. As I am going to maintain that any person, in almost any soil, with proper treatment, can grow Gladioli, evidently procuring the corms is the first consideration. There is no difficulty in procuring corms direct from the growers in any part of the British Isles—from Campbell of Greenock, in the North of Great Britain, to Kelway of Langport, in the South, and from Dickson of Newtownards, in Co. Down, to Saunders of Cork. I have grown them from each, and have had similar varieties equally fine from the several firms; but position or aspect, soil, planting, and treatment during growth and flowering will make a difference, and upon each of those points I propose, with your permission, to make a few observations immediately. Beginners had better commence with a "cheap selection"—to be had for a few pence each; as a rule they are cheap because they can be increased from "spawn" more rapidly, not because they are less showy or desirable. This does not apply to new or certificated varieties recently put in commerce. If you succeed with those you can try such magnificent exhibition varieties as Calliphron, James McIntosh, or Duchess of Edinburgh (Kelway), or Marquis of Lothian (Campbell), that bloom in the order named, that if well grown give twenty-two blooms to a spike, with generally two spikes from the same corm, and into each bloom you can put your closed hand. Cut those spikes and take them in-

doors when the first bloom opens, and for three weeks, if the water is kept pure, they will open one by one, and rival the most brilliant Orchid. Hot sun will shorten their term outside. I have tried French raised corms, but the best of them were behind those named, and as to Lemoine's hybrids, except that they are hardier, they cannot compare with gandavensis hybrids. Having procured your corms the next question is where to grow them? This is important, inasmuch as I am a firm believer in the theory that imperfect preparing and maturation is intimately connected with the so-called "degeneration." If any one doubts this let him try planting at the north side of his house or in the shade of trees, and observe the result. Plant, therefore, in a bed or border with an open aspect—southern, if possible—where they can catch a maximum of sunshine, with the object stated. If you have different soil formation at your disposal give a preference to a strong firm loam. If your soil is sandy, or gravelly, or peaty even, dig holes for planting—to be immediately referred to—and instead of the soil removed, procure elsewhere loam of some kind. In this way every person can grow them, no matter what the natural soil formation may be, even, as I said, if it should be naturally peaty or sandy. According to my method of planting very little new soil under such circumstances will be necessary. Those who systematically grow Gladioli every year, generally, in the autumn, deeply dig and manure the beds or borders intended for them. In my own and many similar cases I grow them at the back of two long borders. that are furnished with bulbs, hardy and herbaceous plants, that cannot be disturbed. My plan then is to dig out holes and nearly fill them with manure, giving preference to that from a spent hotbed; but I have found very satisfactory results when, on one occasion, I had to use it fresh from the stable. Over the manure I place, say, 2 inches of loam or compost of any kind—brickdust would not be a bad thing—then a handful of river sand, which never cakes or forms into a solid mass, and keeps moisture around the roots, no matter how dry the summer, and this is very material. My stock has increased so much that I now have to place three corms on the sand where formerly I placed but one, equidistant. Another handful of the same sand goes over them. The rain and waterings carry down the silica of this sand to the roots, and to my mind gives the foliage that firm and woody texture that to the expert in July or August plainly indicates what the grower may expect later on. The only extra soil required is what covers all, and brings the border on a level. Surely Gladioli can thus be grown, even in a London back garden. They must not have stagnant moisture at the roots, and if planted in the foregoing manner, they can hardly be dry—neither can they want feeding material. With those three wants anticipated, success should be within measurable distance, but additional means may be resorted to if the grower is also an exhibitor. During very warm weather in June, July, and August, they will be benefited by occasional drinks of liquid manure; staking must be early attended to, and care taken not to press the stake through the corm. One tying is not sufficient, as with that the stem may snap off easier; in fact, the less the wind has to catch the more likelihood of weathering the storm. If you do not intend saving seed, do not allow your plants to exhaust themselves perfecting say twenty large seed-pods. This is too seldom thought of, and is another item accounting for the degeneration or exhaustion of the corm. If you do want seed of any particular variety—say one that rarely gives "spawn," and that is therefore scarce and still expensive—do not allow more than one or two pods to ripen on a spike. Thus there should be no such thing as failure. *W. J. Murphy, Clonmel.*

THE MEANING OF ANEMONE.—Referring to the note on p. 543, asking why the Anemone was called "Wind-flower," it may be remarked that when we inquire why any flower was called by its name we should be sure of two things—first, that the flower to which we have attached the name is the flower to which it was originally given; and secondly, that the assumed meaning of that name is the correct meaning. Granting that the flower we call the Anemone is that to which the ancients—I will not say Greeks or Romans, but call them Celts—gave the name, are we certain that it is derived from *anemos*, wind? May not its real derivation be suggested by the specific name "nemorosa," given to the type as descriptive of its habit? The root *nemo*, meaning grove or glade, is perhaps as likely a derivation as *aneno* or *animo*, breath or wind. The prefix "a" is often found in Greek or Latin derivatives without any definite meaning. So we have the Celtic root *pen*, height, becoming in the names of mountains Pennine and Apennine; we have *ped*, flat, becoming *pedos* and *apedos;* we have *phak*, a leguminous vegetable, becoming *phake* and *aphake*, without difference of meaning; and many similar instances might be brought. Thus, in forming the name of a flower, *nemo* may have become *anemo* for euphony. Again, as to the name "Wind-flower," the Anemone, I think, loves shelter and hates wind; but our ancestors liked to coin names which they supposed to be translations of Greek and Latin names. We have many instances of absurdity in such names. Not to repeat what I lately said in a note about Lysimachia, Loose-strife, we may mention Cow-berry, intended for a translation of Vaccinium, thought to be derived from *vaccinus*, of or belonging to a cow. But Vaccinium is used by Virgil to translate into Latin the Greek plant-name Hyacinthus or Vacinthus, and is believed by German philologists to be a mere variation from the same root. *C. Wolley Dod.*

FLORAL NOVELTIES.—There can be no doubt that in greenhouse plants the striped Cineraria Jubilee, recently certificated at the Botanic show to Mr. James, of Farnham Royal, and the remarkable crested Cyclamen Princess of Wales, certificated last week to Mr. Clarke, of Twickenham, rank amongst the most novel. Cinerarias, whilst giving large and

Fig. 118.—A CRESTED CYCLAMEN.

beautiful flowers, have hitherto shown a limited range in the markings, the chief variation from selfs being found in edged or ringed flowers, the markings varying in breadth more or less. In nearly all the ringed flowers of finest quality the coloured ground has been of great width, the white ring being necessarily small. In the more expanded and looser flowers we have seen the ring of white expanded into the ground, and the colour found only in a narrow edging. These latter give life to a collection of Cinerarias but not a great deal of variety, hence it is seen that a distinctly striped form becomes a very acceptable novelty. The petals of this striped flower have each a white centre with bars of reddish-crimson on either side, and running longitudinally as seen in striped Marigolds or Asters. As allied to this peculiarity in floral marking there is average robustness. There is good reason to hope that seed will be found in average plenty, and thus a strain formed distinctive and good. From evidences found in the strain of Cinerarias grown at Farnham Royal, blue striped flowers seem to be no great improbability also, and these again would make an admirable addition to our Cineraria strains. It is obvious, however, that from seed these strains can only be perpetuated by giving to the plants when in bloom the amplest isolation. Turning to Mr. Clarke's crested Cyclamen, we find a development of which some two years since no one would have imagined that interesting flower would have taken. It is two years since Mr. Clarke exhibited a plant having not only some few crested flowers, and also partially crested foliage (see fig. 118). That plant is the seed-progenitor of the very marked novelty shown the other day, hence we have satisfactory proof at once that the strain may not only be perpetuated, but may also be materially improved through seed. In the earlier plant the flowers were irregularly and imperfectly marked; in the one shown last week the flowers, some fourteen or fifteen, were all evenly crested, pure white in colour, having broader well balanced petals. Cyclamen blooms have varied in size, in breadth, and roundness, or otherwise, of petal, of markings, or colourings, and sometimes have shown doubling tendencies, which have been productive of monstrous rather than of pleasing flowers. The new crested kind happily gives us novelty without any kind of monstrosity, and a neat, even growth. How it originated remains a mystery. indeed it can be described as simply a sport, and the origin of sports so-called is very puzzling. In any case it seems evident that a distinctive strain has been originated, and that, as Cyclamens seed freely, we shall soon see it widely distributed, for all Cyclamen growers will want to add this novelty to their collections. *A.D.*

PHILIP MILLER.—I am in possession of the second edition of Miller's *Gardeners' Dictionary*, which was published by Rivington in MDCCXXXIII. It is dedicated to Sir Hans Sloane, Bart. I have also a second volume, published as an appendix to it in MDCCXL. This was dedicated to the Earl of Burlington, and contains a list of the subscribers' names. *J. Douglas.*

—— No doubt Mr. Hughes' book will be the first edition of Miller's *Gardeners' Dictionary.* I have a volume printed for the author, &c., MDCCXXXVII. (the third edition, corrected); therefore "W. B. H.'s," published 1736, will probably be the second edition. *Robert Frisby, Worden, Preston.*

SOCIETIES.

SCOTTISH PRIMULA AND AURICULA.

The first show of the above newly-formed Society was held in the Calton Convening Rooms, Edinburgh, on the 4th inst. The committee and the promoters of the Society are to be congratulated on the result of their efforts to promote an interest in these beautiful spring flowers. The number of entries for competition, and the support in the way of non-competitive exhibits, exceeded their expectations, and the general public took a lively interest in the show, the hall being crowded from the opening to the close.

The most conspicuous object on entering the show-hall on the left was the collection of Primulaceæ from the Royal Botanic Gardens, consisting of many species and varieties of Primula, and several Androsaces and Cortusas. Conspicuous in the species of the first-named genus was P. Reidi, a very distinct and attractive form that arrested the attention of all. The beautiful cream-white campanulate flowers are most chaste and characteristic, and their fragrance very remarkable. P. Stuarti purpurea was also noteworthy in its way, and distinct from the type with its deep violet-purple flowers.

Mr. Calder, sculptor, Bellevue, Edinburgh, had a very interesting collection of seedling Primulas derived from the species P. ciliata and P. nivalis. Three of them were named by the judges, viz., Flag of Truce, a pure white, with large flowers in the way of P. nivalis, but twice the size; Rob Roy, a beautiful crimson; and P. Calderi, rose-purple. All are beautiful subjects for the flower border and for rockwork, and present free-flowering types that are new in character and certain to become popular when they are better known.

R. Cathcart, Esq., Pitcarlie, President of the Society, exhibited a collection of some thirty varieties of stage Auriculas, of very excellent quality. They were notable examples for purity of colour, size, substance, and finish of their pips. An excellent collection was also exhibited by Mr. Straton, the Secretary of the Society. Mr. Turner, Slough, had a small collection of alpine Auriculas, which were much admired, their perfect finish and uniform character being the subject of general remark. Messrs. James Dickson & Sons, Edinburgh, and Mr. John Forbes, Hawick, had each good collections of stage and alpine Auriculas.

Turning to the competitive classes, it was noteworthy that show Auriculas were the greatest

favourites with growers. Mr. Wm. Straton, Broughty Ferry; Mr. J. T. E. Hay, Newcastle; Mr. Wm. Kilgour, Blair Drummond; and Mr. Chas. Turner, Slough, were the principal and most successful competitors in the various classes of Auriculas.

The miscellaneous classes of Primulas and Polyanthus were closely contested for by Messrs. Thomson, Beechhill; Wadington, Fotheringham, Trinity; and Henderson, Clerniston.

Professor Dickson opened the show with a few felicitous remarks.

LEEK AURICULA SHOW.

April 30.—The second exhibition of Auriculas and other spring flowers, held at the Town Hall, showed great improvement upon its predecessor. Not only were the exhibits more numerous and better grown, but the interest was distinctly greater, and promises well for the future of the Society.

Single Plants.—Amongst the grey-edged Colonel Champneys was the winning variety, and those staged by Mr. H. W. Nixon were superior to any other in the class, although Apollo was greatly admired. In green edges Prince of Greens, Duke of Cambridge, and Duke of Wellington were to the fore in the order named. The white-edged varieties, though not so numerous, were also meritorious, the Acme, shown by Mr. B. Flanagan, being a real beauty, and deserved the premier position accorded to it. Selfs formed a strong class and keen competition, the 1st prize going to Negro and the 2d to C. J. Perry, shown by Messrs. H. W. Nixon and M. Carding respectively—undoubtedly the best of the eighty shown. The prize for the best seedling was awarded to Mr. W. Barnfather, for a very fine dark purple self.

Alpine Sorts.—Mr. Nixon was again at the front in alpines with Mercury; the same grower also taking 2d and 3d with Mrs. Llewellyn and Mrs. Meiklejohn. Mr. M. Carding staged about a score varieties of garden alpines, which were greatly admired.

Miscellaneous.—Cheshire Favourite bore down all opposition in Polyanthuses, Messrs. J. Brunte, J. Garner, and T. Lea being the successful exhibitors. Primroses in pots were also well shown. A feature of the show was a collection of fifty-five varieties of Daffodils staged by Messrs. Barr & Son, of King Street, Covent Garden, London. Messrs. Dickson, Brown & Tait (Manchester), Mr. T. S. Ware (Tottenham), Messrs. James Dickson & Sons (Chester), also exhibited excellent collections, as did Mr. M. Mellor, of Leek.

The profits of the show, which amount to about £10, will be given to the Leek Cottage Jubilee Hospital Fund.

TREES AND SHRUBS.

RHODODENDRON CAUCASICUM ALBUM.

This is a beautiful Rhododendron for the greenhouse. It is a good grower, hardy, and a free-flowering variety, the individual flowers being large, white, with the upper petal spotted with buff. These, when mounted on wire, come in very useful for bouquet-making. As a decorative plant in the house or conservatory it has few equals, the large trusses of white flowers being very effective when contrasted with its own dark green leaves. *H. W. W.*

The Cornish Elm (Ulmus cornubiensis).

This, both as an ornamental tree and valuable timber producer, is a great favourite with the few planters who have had the chance of testing its merits. It is, unfortunately, very difficult to procure the Cornish Elm in quantity, and which will no doubt, to a very great extent at least, account for the rarity with which it is to be seen in our parks and grounds. Most of these sent out by nurserymen are from grafts, but it is likewise procured from layers, and occasionally from seeds. These latter are, however, even on our large full-grown trees, rarely produced, and too often nine-tenths of the seeds are useless for raising young stock. The tree has a pyramidal contour, not so adpressed as is the case with the Lombardy Poplar, but just sufficient to give it a dressy appearance minus the stiff outline of fastigiate trees in general. It grows to be of large size; some of them on this estate are 90 feet high, with a stem-girth at a yard up of fully 8½ feet. The timber is excellent, superior in graining to our ordinary forms, and has given a great amount of satisfaction when experimented upon for boat-building uses. As to choice of soil, I cannot say that any preference has been shown by the Cornish Elm, for here it is growing and thriving well in that of very opposite qualities—sandy loam, vegetable refuse, and an unkindly damp-retaining mixture that cannot otherwise be described but as a something between clay and loam, most of the former. *A. D. Webster, Penrhyn Castle.*

Cydonia (Pyrus) japonica.

A glorious bush of this fine ornamental deciduous shrub is now a feature at the entrance to the Royal Horticultural Society's Gardens, Chiswick, covered with its glowing red flowers. The sun's rays cast upon it produce a brilliant effect, giving one the idea of a veritable Fire Bush!—a good English name for it. *B.*

Magnolia conspicua.

When paying a visit to the gardens of Digswell House, Herts, the residence of W. S. Brown, Esq., on April 21, a fine tree of the above, about 20 feet in height, was in full flower, and presented a grand appearance, being literally covered with its pure white Tulip-like blossoms. After the severe winter we have just passed through it struck me as being more hardy than is generally supposed. No deciduous tree that I am acquainted with could be more beautiful at this season of the year; it is also very valuable for cutting, lasting a long time in water. It requires to be planted in a sunny sheltered position. *Edwin Beckett.*

RED-SPIDER ON VINES.

The recent drying east winds, so cold and long-continued, necessitated high pressure being put on the heating apparatus, with the result that red-spider is appearing in the early-houses already, and even in houses where the Vines have scarcely yet gone out of bloom it shows itself. How can this troublesome pest be destroyed without injuring the leaves or fruit? It is quite certain that in cases where red-spider gets upon the leaves at the time of thinning out the fruit, it will increase to such an extent that the leaves will be destroyed before the fruit colours. I know some good gardeners who have tried many experiments to destroy spider; I have also tried a few, and had many failures with them. I well remember trying the hot lime and sulphur cure, recommended by the late Mr. Thomas Rivers, of Sawbridgeworth, with most disastrous results. The plan was to fill a large pot with unslacked lime, carry it into the vinery, and then pour on it some cold water. When the lime was smoking hot, a handful of flowers of sulphur was to be thrown upon it. The result of this proceeding was to cause the sulphur to flame, and although one small handful only was used in a house 26 feet by 16 feet, nearly every leaf was destroyed, and yet the pot and its contents was hurried out as soon as the flame was observed. Syringing the leaves will keep the pest in check, but it must be continued daily during the season, and by the time the fruit colours scarcely any of the beautiful bloom which ought to be upon the Grapes will be left there. No grower for market will adopt this plan.

In fact there is only one way known to me by which the spider can be destroyed and the fruit finished off well; that is by painting the hot-water pipes, when they are considerably heated, with flowers of sulphur. It should be done when the temperature has been raised in the afternoon to 90°. The house ought to be shut up with this temperature, and the pipes must be sufficiently heated to cause a slight mist in the house from the fumes. I have seen this heating overdone, and the Grapes very badly rusted; but this is no reason that the process cannot be successfully accomplished by those who are careful. Mischief as often ensues owing to carelessness with tobacco-smoke. I may add that it is unsafe to use the sulphur fumes in the house until the fruit has arrived at the stoning period. Both Black Hamburgh and Muscat of Alexandria Grapes become rusty by its too early use, even if it is not sufficiently strong to kill the spider. Can any correspondent suggest a better plan to destroy spider than the above without touching the bloom on the Grapes? *J. Douglas.*

VARIORUM.

Flowers in Season.—From Messrs. James Dickson & Sons, Newton Nurseries, Chester, we have received a bunch of that favourite Daffodil, Sir Watkin. It is a fine flower, large, and of a good bright golden-yellow colour, to which is added an extra attraction of a delicate perfume. It must be a useful variety for garden work as well as for cutting.—"Poppy Anemones, indeed!" was our exclamation, as we opened a box containing some magnificent Anemones of the strain that S. Brigid has made famous alike for size and for beauty. The sight of these flowers and of those received from Cork makes us wonder why our neighbours the French should have the monopoly of supplying the London market with certain descriptions of spring flowers. Our Irish brethren could easily get a good share of the money now sent abroad.

Mattei's Jubilee Quadrille.—This is a good set of quadrilles published (by Hutchings & Romer, London), in which the time is well marked for dancing. We cannot, however, commend No. 5, although it opens with an inspiriting galop. It is scarcely possible to fancy dancers threading the intricacies of the figure to a tune which is a travesty of "God Save the Queen," without a smile, even in this year of jubilee.

"Mother of Nations:" Royal Jubilee Song.—The words of this are by Edward Foskett, the music by Leonard Gautier, and published by Hutchings & Romer, London. The air of this Jubilee song, although not very original in character, is tuneful and easy, and better than many similar things of the kind, because it is less pretentious and over-burdened with ornamentation. The words are of the usual "flattering" character.

THE WEATHER.

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING MAY 14. (AVERAGE OF THIRTY-THREE YEARS.)

May 8	52°.8	May 12	53°.6
„ 9	53°.0	„ 13	53°.8
„ 10	53°.2	„ 14	54°.0
„ 11	53°.4	Mean for the week ...	53°.4

THE PAST WEEK.

The following summary record of the weather for the week ending May 2, is furnished from the Meteorological Office:—

"The *weather* has continued in an unsettled and changeable condition generally. Frequent falls of rain were experienced in all districts, while at several of our more northern stations snow showers occurred. In some parts of the kingdom thunder and lightning were reported.

The *temperature* has again been below the mean in all districts, the deficit ranging from 4° to 6° over Scotland, and in the 'Chnnnel Islands' to as much as 7° or 8° in Ireland and over the greater part of England. The highest of the maxima, which were registered in most places on May 1, ranged from 54° in 'England, N.W., to 60° in 'Scotland, E.,' and 61° in 'Ireland, N.' On most occasions the daily maxima were several degrees lower, at many stations not reaching to 50°. The lowest of the minima, which were recorded on irregular dates, varied from 23° to 24° in Scotland, and from 26° to 31° in Ireland and England; in the Channel Islands, however, the lowest reading was 40°.

"The *rainfall* has been rather less than the mean in Ireland and Scotland, but more in most of the English districts.

"*Bright sunshine* has been rather more prevalent generally than it was last week, the percentages of the possible amount of duration ranging from 17 in 'Scotland, N.,' to 31 in the 'Channel Islands,' 32 in 'Scotland, N.,' 34 in 'England, S.,' 46 in 'England, E.', and to 60 in 'Ireland, S.'"

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 32° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature.				
		Accumulated.			
	Above or below the Mean for the week ending May 2.	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 4, 1887.	Below 42° difference from Mean since Jan. 4, 1887.
Principal Wheat-producing Districts.		Day-deg.	Day-deg.	Day-deg.	Day-deg.
0. Scotland, N. ...	5 below	17	32	+ 30	+ 48
1. Scotland, E. ...	5 below	23	36	+ 47	+ 44
2. England, N.E. ...	6 below	23	29	— 96	+ 95
3. England, E. ...	8 below	33	22	— 84	+ 176
4. Midland Cos. ...	8 below	26	35	— 73	+ 182
5. England, S. ...	7 below	33	14	— 87	+ 160
Principal Grazing, &c., Districts.					
6. Scotland, W. ...	6 below	22	31	— 24	+ 56
7. England, N.W. ...	7 below	29	18	— 65	+ 125
8. England, S.W. ...	8 below	32	17	— 90	+ 178
9. Ireland, N. ...	7 below	32	21	+ 3	+ 33
10. Ireland, S. ...	8 below	37	23	— 34	+ 104
— Channel Islands	4 below	34	0	— 150	+ 77

Districts.	Rainfall.			Bright Sunshine.	
	More or less than the Mean for the Week.	No. of Rainy Days since Jan. 4, 1887.	Total Fall since Jan. 4, 1887.	Percentage of possible duration for the Week.	Percentage of possible Duration since Jan. 4, 1887.
Principal Wheat-producing Districts.	Tenths of Inch.		Ins.		
0. Scotland, N. ...	1 less	74	14.3	17	23
1. Scotland, E. ...	1 less	54	6.8	32	32
2. England, N.E. ...	1 less	52	4.8	38	33
3. England, E. ...	2 more	46	4.9	46	37
4. Midland Cos. ...	4 more	44	5.4	39	31
5. England, S. ...	3 more	46	5.7	34	33
Principal Grazing, &c., Districts.					
6. Scotland, W. ...	3 less	60	12.6	40	32
7. England, N.W. ...	1 more	48	7.2	40	33
8. England, S.W. ...	4 more	48	7.2	41	41
9. Ireland, N. ...	2 less	58	8.9	43	32
10. Ireland, S. ...	3 less	51	9.2	60	41
— Channel Islands	3 more	55	6.3	31	46

ENQUIRIES.

"He that questioneth much shall learn much."—Bacon.

Rating Nurseries Test at Worthing. — Does the one-fourth assessment apply to all rates? The clerk to the guardians here (Atherstone) tells me it only applies to the sanitary rates, and not the poor-rate. My ground is assessed at a little over seven-eighths of the annual rental—a great difference from one-fourth—and our poor-rate is high. *W. T.*

NOTICES TO CORRESPONDENTS.

*** Correspondents will greatly oblige by sending early intelligence of local events likely to be of interest to our readers, or which it is desirable to bring under the notice of horticulturists.

Amaryllis: *G. C.* There are so many better, that now-a-days we cannot assign such a high place to your seedling as we might have done a few years ago. The colour is good, but the petals lack smoothness.

Anemones and Fungus: *W. H.* The name of the remarkable fungus which is infesting your Anemone-bed is Peziza tuberosa. An illustrated article on this subject will be published in the *Gardeners' Chronicle* shortly. *W. G. S.*

Blood as a Manure: *R. E. F.* This can be used as a liquid manure, with a little lime added, diluted in the manner stated: it will have a noisome stench, but which might be neutralised by covering the Vine border with a slight covering of dry sifted loam after each watering.

Correction. — Owing to some confusion in the arrangements on the occasion of the last meeting of the Royal Horticultural Society a plant of Miltonia vexillaria leucoglossa, shown by F. G. Tautz, Esq., was stated by us to belong to the New Plant and Bulb Company.

Fungus on Oil Seeds from the Gaboon: *J. W.* That on opium is Mucor phycomyces, Link.; that on seeds, Trichothecium domesticum, Fries. *M. C. C.*

Fungus: *M. D., Bostall House.* The name of the fungus is Agaricus rachodes: it is edible when fresh, though not equal (as an object for the table) to its close and delicious ally—A. procerus. *W. G. S.*

Gloire de Dijon as a Stock for Marechal Niel Rose: *M. B. & Co.* If you can procure strong well-rooted cuttings of this kind, the Maréchal will grow well on them; but the Dog Rose, being the hardier plant, makes the best stock for this or any Rose.

Hardy Tree: *H. F.* Probably the Norway Maple, Acer platanoides; but why send such a wretched scrap?

Insects: *J. S. & Son.* Your young Larches are attacked by the Larch aphis (Chermes laricis), the females of which are depositing their eggs in clusters at the base of the leaves. They may be checked by washing the Ferns with diluted paraffin (a glassful to a watering-can of water), or strong lime-water, or, better, tobacco-water. *I. O. W.*—*D. W.* Your Vine leaves have been gnawed by some caterpillar. The small active insects sent are a species of froghopper, closely allied to the cuckoo-spit insect (Cercopis spumaria), which have sucked the leaves, and made blotches on them. *I. O. W.*

Loss of Buds on Azalea indica: *G. Y., Gloucester Road.* This will arise from various causes, but the more common ones are loss of foliage by thrips, unintelligent watering, and sudden fluctuations of temperature—which is it? You afford us no information at all. If you know nothing of their culture get a good gardener to instruct you.

Manuals on Roses under Glass: *Marshall Bros. & Co. Tea Roses, and How to Grow Them*, by Ecroyde Claxton (Liverpool: W. Potter, 30, Exchange Street East); *How to Grow Roses in the Garden, and in Pots Under Glass*, by Samuel Ryder, Jun. (Ryder & Son, Seed and Bulb Merchants, Sale, Manchester); *Pot Roses* (W. Paul).

Morel: *G. B.* Yes, the true Morel; excellent eating.

Names of Plants: *A. H.* 1, Narcissus allied to odorus—we do not recognise it; 2, Narcissus triandrus, corona bell-shaped; 3, Primula obconica, but you have sent no leaf.—*Cooper.* We do not undertake to name florists' flowers. You must send the Carnation to some grower of these flowers. The Orchid is Vanda cœrulea, a poor variety.—*W. A. M.* Cantua dependens.—*C. Watkin.* Lælia purpurata, a good light variety, that is now often found in importations.—*W. F. J.* 1, Cattleya Mossiæ; 2, Cattleya Mendelii, good bright variety; 3, Lycaste Harrisoniæ; or Bifrenaria inodora, if the flower opened white and changed to fawn; 4, Cœlogyne flaccida.

Narcissus: *G. L.* Your specimens were shrivelled beyond attempt at recognition.

Potatos: *B.* On the same principle that electricians now commonly write dynamos. Doubtless in a few years the practice will become universal.

Seeds from Stocks: *S. K.* The seeds are obtained from single varieties.

Shamrock: *Subscriber.* What you send is Oxalis acetosella, the common Wood Sorrel. No one knows for certain what the Shamrock is. Next time send your question to the Editor, and not to the Publisher.

Strawberry Flowers Turning Black: *J. B.* We cannot exactly define the reason, as you afford us no particulars of their management. Watering the crowns overhead, instead of pressing them aside when giving water; inordinate forcing, by which leaves are produced in advance of, and at the expense of, the flower-spike; loss of roots, from keeping the plants in dry airy vineries, Peach-houses, and the like places, during the winter instead of out-of-doors; too strong manure-water; bad drainage of the pots; these are the commoner causes of loss of bloom.

White Rhododendron: *E. H.* Very similar to R. virginalis, a garden hybrid.

CATALOGUES RECEIVED.

George Humphries, Kington, Langley, and Chippenham—Dahlias and Bedding Plants.

Thomas Bunyard, Ashford, Kent—Bedding Plants.

James Dickson & Sons, Newton Nurseries, Chester—Bedding, Stove and Hardy Plants, &c.

Alexander Dickson & Sons, Royal Nurseries, Newtownards, co. Down, Ireland — New Pedigree Seedling Roses.

Communications Received.—A. Bishop (next week).—J. B.—W. W.—F. H.—J. J. W.—T. C.—W. G. S.—R. D.—G. B. W. B. H.—H. W. Hayward (next week).—H. M.—W. B.—C. L.—J. W.—E. T.—E. A. L.—S. Brigid.—T. C.—J. C.—J. W.—M. F.—A. S.—Ed. André.—H. V.—E. B.—C. S. M.—L. L.—G. C. C.—A. B.

MARKETS.

COVENT GARDEN, May 5.

Business steady, all classes of goods being readily cleared off, and prices remaining the same, with the exception of second quality Grapes, which are fully 1*s.* per lb. less than last week. *James Webber, Wholesale Apple Market.*

Plants in Pots.—Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Aralia Sieboldi, doz.	6 0–18 0	Foliage plants, various, each ...	2 0–10 0
Arum Lilies, dozen...	9 0–12 0	Fuchsias, doz.	9 0–12 0
Azaleas, per dozen ...	24 0–42 0	Genistas, per doz.	6 0– 9 0
Cinerarias, per doz...	6 0– 9 0	Hydrangeas, doz.	9 0–12 0
Cyclamens, dozen ...	10 0–18 0	Lilium longiflorum, per dozen ...	24 0–36 0
Cyperus, per dozen .	4 0–12 0	Lily-of-Val., 12 pots	12 0–18 0
Daffodils, 12 pots ...	9 0–10 0	Marguerite Daisy, per dozen ...	6 0–12 0
Dracæna terminalis, per dozen ...	30 0–60 0	Mignonette, doz.	6 0– 9 0
— viridis, per doz.	12 0–24 0	Myrtles, per dozen...	6 0–12 0
Erica, various, per dozen ...	18 0–42 0	Palms, in var., each	2 6–21 0
Euonymus, in var., per dozen ...	6 0–18 0	Pelargoniums, dozen	9 0–18 0
Evergreens, in var., per dozen ...	6 0–24 0	— scarlet, per doz.	4 0– 8 0
Fairy Roses, doz. ...	10 0–12 0	Rhodanthe, dozen ...	6 0– 9 0
Ferns, in variety, per dozen ...	4 0–18 0	Roses, various, doz...	18 0–30 0
Ficus elastica, each .	1 6– 7 0	Solanums, per dozen	9 0–12 0
		Spiræa, per dozen ...	9 0–12 0

Cut Flowers.—Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Abutilons, 12 bun ...	3 0– 4 0	Marguerites, per 12 bunches ...	3 0– 6 0
Anemone, 12 bun. ...	2 0– 4 0	Mignonette, 12 bun.	3 0– 6 0
Arum Lilies, 12 blms.	3 0– 5 0	Pelargoniums, scarlet, 12 sprays ...	0 4– 0 9
Azaleas, 12 sprays ...	0 6– 0 9	Primroses, 12 bun....	0 6– 1 0
Bouvardias, per bun.	0 6– 1 0	Primulas, double, 12 sprays ...	0 9– 1 0
Camellias, 12 blooms	1 0– 3 0	Roses, Tea, per doz.	1 0– 2 0
Carnations, 12 blms.	1 0– 3 0	— coloured, dozen.	3 0– 6 0
Cyclamen, 12 blooms	0 4– 0 6	— red, French, doz.	1 6– 2 0
Daffodils, single, 12 bunches ...	1 0– 2 0	— Saffrano, dozen...	1 0– 1 6
— double, 12 bun.	1 6– 3 0	Spiræa, 12 bunches..	6 0– 9 0
Eucharis, per dozen	4 0– 6 0	Tropæolums, 12 bun.	1 0– 2 0
Gardenias. 12 blooms	1 6– 3 0	Tulips, 12 bunches ...	4 0– 6 0
Heliotropes, 12 spr.	0 6– 1 0	Tuberoses, 12 blms....	1 0– ...
Hyacinths (in boxes from Holland), box	1 6– 4 0	Violets, 12 bunches...	0 4– 0 9
Jasmine, white, bun.	0 6– 0 9	— Parme, French, per bunch ...	2 0– 3 0
Lilies of the Valley, 12 sprays ...	0 6– 1 6	— Czar, Fr., bunch	0 9– ...
Lilium longiflorum, 12 blooms ...	4 0– 6 0	Wallflowers, 12 bun.	3 0– 6 0

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apple, ½-sieve	1 6– 5 0	Peaches, dozen	20 0–30 0
— Nova Scotia, brl.	8 0–12 0	Pears, per dozen	2 0– 4 0
Grapes, new, per lb.	5 0– 8 0	Pine-apples, Eng., lb.	1 0– 1 6
Kent Cobs, 100 lb.	60 0– ...	— St. Michael. each	1 6– 6 0
Lemons, per case	12 0–21 0	Strawberries, per lb.	4 0– 8 0

VEGETABLES—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, per doz.	4 0– ...	Lettuce, Cos., Fr., each	0 6– ...
Asparagus, French, per bundle	4 0–12 0	Mushrooms, punnet	1 6– 2 0
— English, per 100	8 0– ...	Mustard and Cress, punnet	0 4– ...
Beans, Kidney, lb.	1 6– ...	Onions, per bushel	4 0– ...
Beet, red, per dozen	1 0– 2 0	Parsley, per bunch	0 6– ...
Carrots, per bunch	0 6– ...	Peas, per quart	6 0– ...
Cauliflowers, per dozen	3 0– ...	Potatos, per cwt.	4 0– 5 0
Celery, per bundle	1 6– 2 0	,, kidney, per cwt.	4 0– 5 0
Cucumbers, each	0 6– 1 0	Rhubarb, per bundle	0 6– ...
Endive, per dozen	3 0– ...	Seakale, per punnet	2 6– ...
Green Mint, bunch	1 0– ...	Shallots, per lb.	0 3– ...
Herbs, per bunch	0 4– ...	Spinach, per bushel	4 0– ...
Leeks, per bunch	0 3– ...	Sprue, bundle	1 0– ...
Lettuce, per dozen	1 6– 2 0	Tomatos, per lb.	4 0– ...
		Turnips, new, bunch	1 0– ...

POTATOS.—Markets very heavy, at the following prices:—Regents, 90*s.* to 110*s.*; Magnums, 80*s.* to 120*s.* per ton.

SEEDS.

LONDON: *May* 4.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., write that sowing orders still come to hand for Clover and other farm seeds, which are executed at the remarkably low rates now ruling. Rather more money is obtained for English red Clover, fine qualities having become scarce. Abnormally moderate figures are now asked for Alsike and white Clover seed. Trefoil is also very cheap. Spring Tares, both Kœnigsberg and Hamburgh, are offered at tempting prices. More inquiry for blue Peas, garden vegetables being in narrow compass. The trade for bird seeds is dull and neglected.

CORN.

Averages.—Official statement showing the average price of British corn, imperial measure, in the week ended April 30:—Wheat, 32*s.* 8*d.*; Barley, 24*s.* 2*d.*; Oats, 16*s.* 2*d.* Comparative statement for the corresponding week in 1886:—Wheat, 31*s.* 1*d.*; Barley, 26*s.* 7*d.*; Oats, 19*s.* 11*d.*

FRUIT AND VEGETABLES.

COLUMBIA (EAST LONDON): *May* 4.—Good supplies of all kinds of produce. Trade fair. The Potato trade brisk, at advanced rates. Quotations:—Cauliflowers, 5*s.* to 9*s.* per tally; Cabbages, 5*s.* to 7*s.* 6*d.* do.; Turnip-tops, 2*s.* 6*d.* to 3*s.* 6*d.* per sack; Sprouting Broccoli, 2*s.* to 2*s.* 6*d.* per sieve; Spinach, 2*s.* 6*d.* to 3*s.* do.; bunch Greens, 2*s.* 6*d.* to 3*s.* 6*d.* per dozen bunches; Rhubarb, 1*s.* 6*d.* to 2*s.* per dozen bundles; spring Onions, 3*s.* to 3*s.* 6*d.* do,; Onions (English), 5*s.* to 6*s.* per cwt.; foreign do., 3*s.* 6*d.* to 4*s.* 6*d.* per bag of 110 lb.; Carrots, 16*s.* to 24*s.* per ton; Apples, 12*s.* to 24*s.* per barrel.

STRATFORD: *May* 3.—Supplies and trade have been good. Quotations:—Cauliflowers, 1*s.* to 1*s.* 6*d.* per dozen; Carrots, household, 24*s.* to 30*s.* per ton; do., cattle feeding, 18*s.* to 21*s.* per ton; Parsnips, 6*d.* to 9*d.* per score; mangels, 13*s.* to 17*s.* 6*d.* per ton; Onions, English, 100*s.* to 110*s.* per ton; do., Dutch, 5*s.* to 6*s.* per bag; Watercress, 6*d.* per dozen; spring Onions, 3*s.* to 3*s.* 6*d.* per dozen bundles; Rhubarb, 1*s.* 6*d.* to 2*s.* do.; Cress, 1*s.* 6*d.* per dozen baskets; Spinach, 2*s.* 6*d.* to 3*s.* per bushel.

POTATOS.

BOROUGH AND SPITALFIELDS: *May* 3.—Supplies lighter, and prices firm. Quotations:—Regents, 70*s.* to 120*s.*; Magnum Bonums, 70*s.* to 130*s.*; and Champions, 65*s.* to 80*s.* per ton.

COLUMBIA (EAST LONDON): *May* 4.—Quotations:—York and Lincoln Magnums, 65*s.* to 85*s.*; do. Regents, 65*s.* to 85*s.*; do. Champions, 60*s.* to 75*s.*; Kent and Surrey Regents, 70*s.* to 85*s.*; do. Magnums, 65*s.* to 75*s.*; do. Champions, 60*s.* to 70*s.*; Cambridgeshire Regents, 60*s.* to 80*s.*; do. Magnums, 65*s.* to 85*s.*; do. Champions, 60*s.* to 75*s.*; Scotch Regents, 75*s.* to 125*s.*; do. Magnums, 65*s.* to 135*s.*; do. Champions, 60*s.* to 75*s.* per ton.

STRATFORD: *May* 3.—Quotations:—Scotch Magnums, 80*s.* to 95*s.*; do. Regents, 80*s.* to 95*s.*; do. English Magnums, 70*s.* to 85*s.*; do. Champions, 65*s.* to 75*s.*; per ton.

Imports.—The imports into London last week consisted of 6377 bags from Ghent, 1690 Hamburg, 616 Harlingen, 875 boxes 784 cases Malta.

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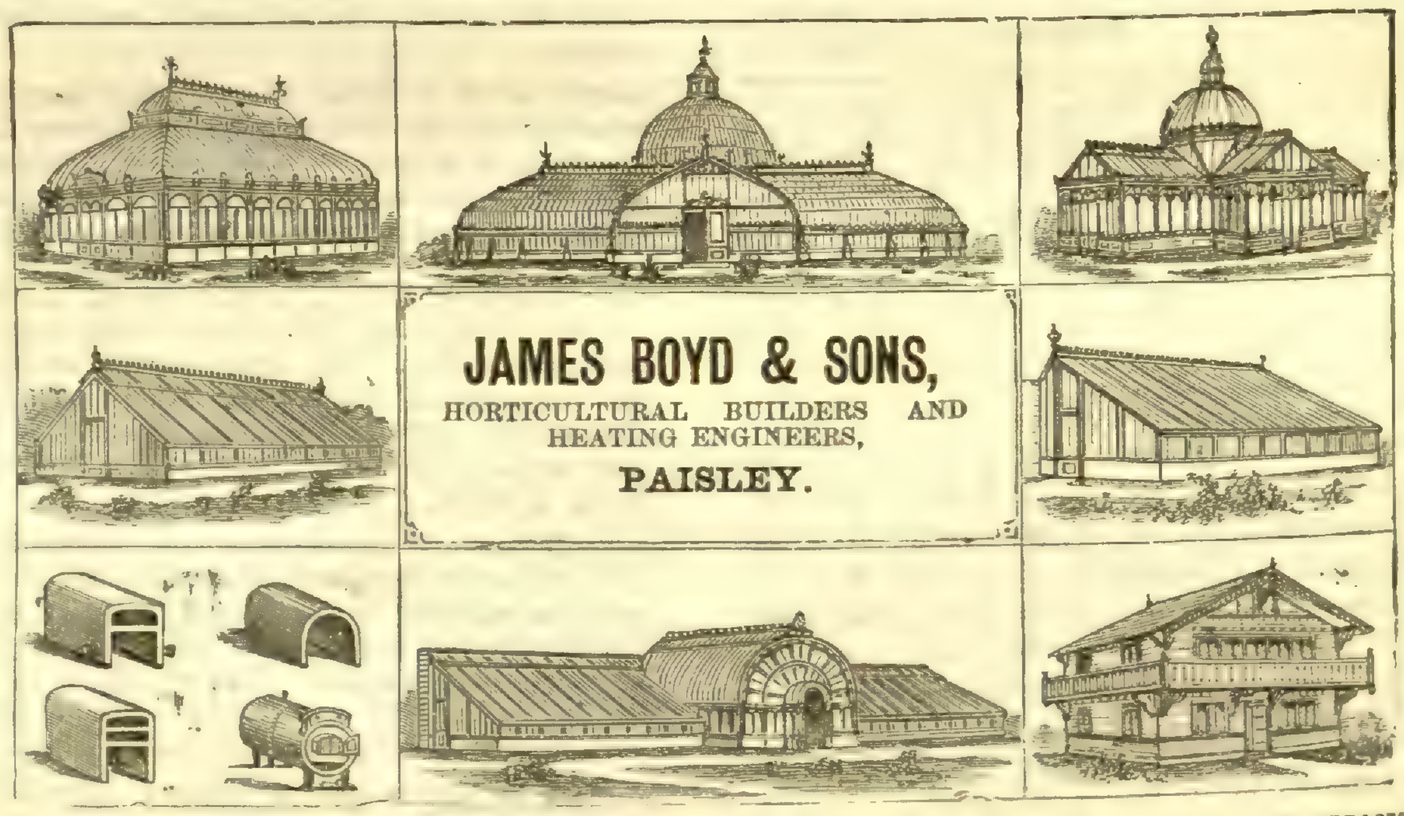

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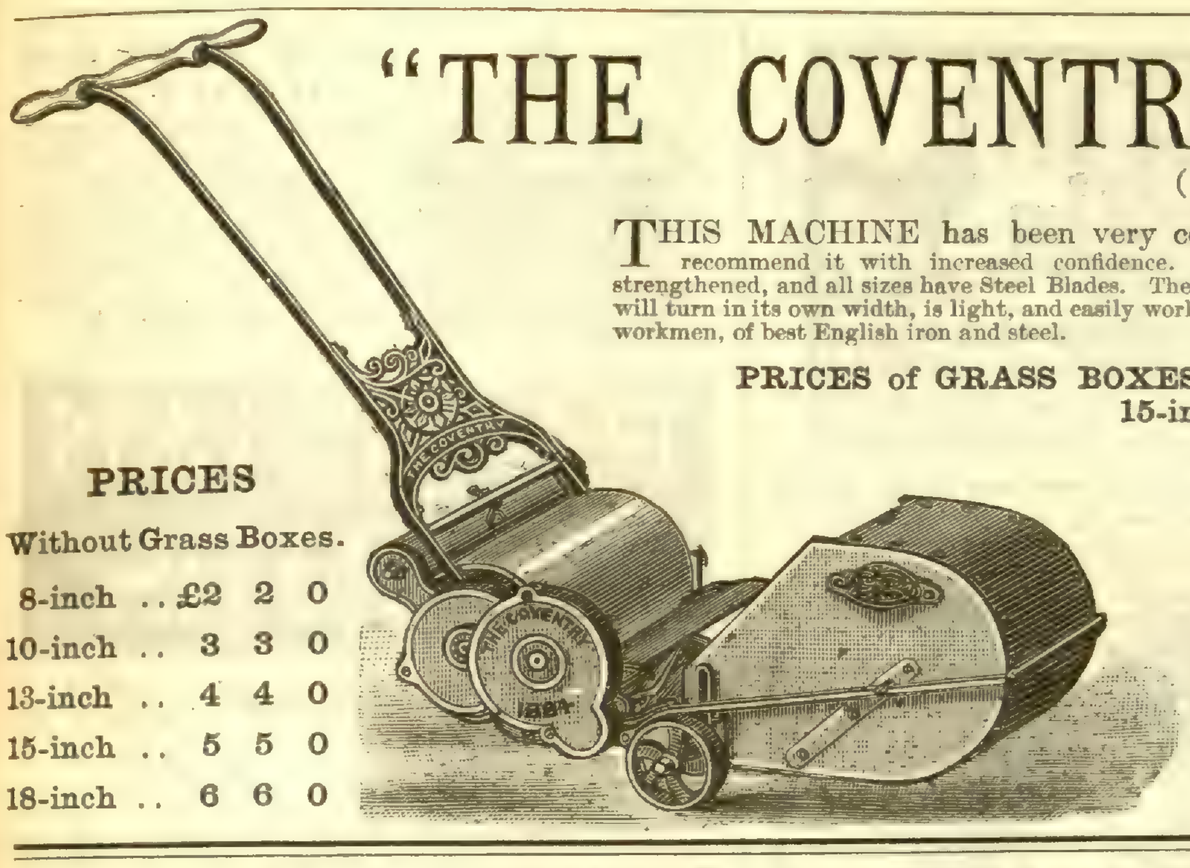
(HARRIS'S). A perfect Remedy for Mildew.
Sold in Bottles 1s. each, or free by post 1s. 3d. each.
Both the above are obtainable of any Nurseryman or Seedsman in the United Kingdom.

Wholesale Agents:—OSMAN & CO., 14, Windsor Street, Bishopsgate, London, E.
SOLE MANUFACTURERS:—
PHILIP HARRIS & CO. (LIMITED), BULL RING, BIRMINGHAM.

"THE COVENTRY" LAWN MOWER
(REGISTERED).



THIS MACHINE has been very considerably improved since last season, and the Manufacturers can recommend it with increased confidence. The Roller is now made the full width of the Machine. The Knives have been strengthened, and all sizes have Steel Blades. The Gearing has been improved, and the arrangement for regulating has been simplified. It will turn in its own width, is light, and easily worked, will cut wet or dry grass of any length. It is made in Coventry by skilled English workmen, of best English iron and steel.

PRICES of GRASS BOXES (each):—8-inch, 8s.; 10-inch, 8s. 6d.; 13-inch, 9s.; 15-inch, 9s. 6d.; 18-inch, 10s. 6d.

WOOD ROLLERS (for attaching to Machine when Cutting Verges):—8-inch, 2s. 6d.; 10-inch, 2s. 9d.; 13-inch, 3s.; 15-inch, 3s. 6d.; 18-inch, 4s.

PRICES

Without Grass Boxes.

8-inch ..	£2	2	0
10-inch ..	3	3	0
13-inch ..	4	4	0
15-inch ..	5	5	0
18-inch ..	6	6	0

MANUFACTURED BY

NETTLEFOLD & SONS,

54, HIGH HOLBORN, LONDON, W.C.

BOULTON & PAUL, HORTICULTURAL BUILDERS, NORWICH.

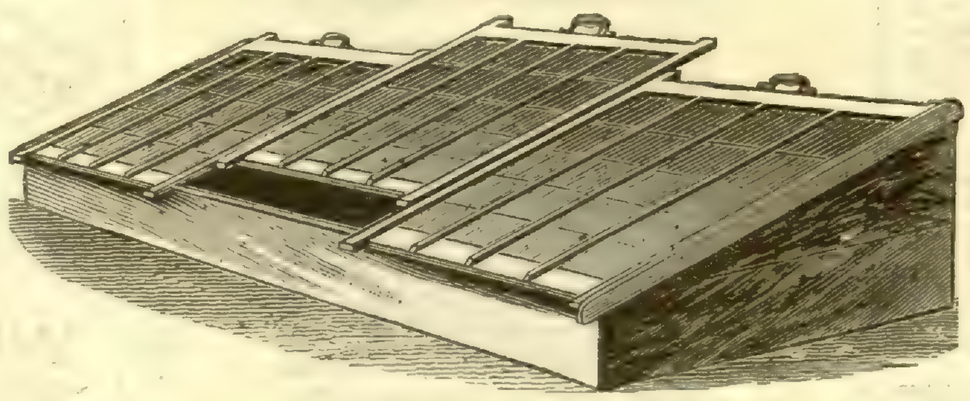
BOULTON AND PAUL'S

CUCUMBER FRAMES

are always in Stock, ready to be sent away on receipt of order.

They are made of best, sound, red deal, sawn from the best trees in the forest to our special requirements, and seasoned in a proper manner.

The FRAMES are of 1½-inch boards, 24 inches high at back, and 13 inches high in front, bolted at the corners, and easily taken to pieces if required. The LIGHTS are 2 inches thick, with iron bar across and one handle at the top, and the whole painted four coats. The Glass is ENGLISH, 21-oz. weight. PACKED and sent, CARRIAGE PAID, to any station in England and Wales, to Dublin, Belfast, Londonderry, Cork, Glasgow, and stations equivalent. Cases are allowed in full when returned.



No. 75.—Cucumber and Melon Frame. All sizes in Stock.

CASH PRICES,

Including Use of Packing Cases.

	Length.	Width.	Price.		
2-LIGHT FRAME,	8 ft.	by 6 ft.	£3	5	0
3 " "	12 ft.	by 6 ft.	4	12	6
4 " "	16 ft.	by 6 ft.	6	0	0
5 " "	20 ft.	by 6 ft.	7	7	6
6 " "	24 ft.	by 6 ft.	8	15	0

Smaller Frames are made. See LISTS, Post-free, of Greenhouses, Heating Apparatus, Garden Frames in every variety made. Garden Implements, Water Carts, Pumps, and everything required for Gardens and Pleasure Grounds, post-free on application.

ESTIMATES for Greenhouses free on receipt of particulars.

LADIES and GENTLEMEN waited upon by appointment in any part of the kingdom.

THE GARDENERS' CHRONICLE FORM OF SUBSCRIPTION.

FROM _____

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To

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41, WELLINGTON STREET, STRAND,

LONDON, W.C.

_____ 1887.

Please send me "THE GARDENERS' CHRONICLE" *for* _____ *Months,*

commencing _____, *for which I enclose P.O.O.* _____.

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☞ **Please Note that all Copies Sent Direct from this Office must be paid for in advance.** ☜

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Receipts for less than six months' subscription will not be sent unless specially asked for.

P.O.O. to be made payable at the Post Office, No. **42**, *DRURY LANE, London, to W. RICHARDS.*

Cheques should be crossed "DRUMMOND."

G. C.
May 7, 1887.

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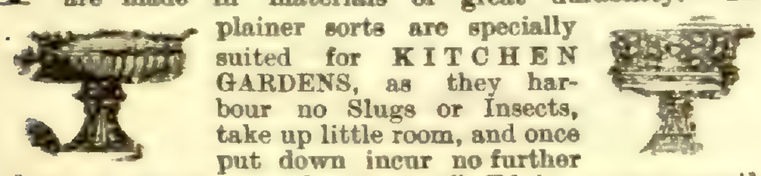
ABBOTT AND CO., Net Manufacturers, Lowestoft.

Rosher's Garden Edging Tiles.

THE ABOVE and many other PATTERNS are made in materials of great durability. The plainer sorts are specially suited for KITCHEN GARDENS, as they harbour no Slugs or Insects, take up little room, and once put down incur no further labour or expense, as do "grown" Edgings, consequently being much cheaper,



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ORNAMENTAL PAVING TILES, for Conservatories, Halls, Corridors, Balconies, &c., from 3*s.* per square yard upwards. Pattern Sheet of Plain or more elaborate Design, with Prices, sent for selection.

WHITE GLAZED TILES, for Lining Walls of Dairies, Larders, Kitchen Ranges, Baths, &c. Grooved and other Stable Paving of great durability, Wall Copings, Drain Pipes and Tiles of all kinds. Roofing Tiles in great variety, Slates, Cement, &c.

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Proportionate prices in any part of the Country.

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24 ft.	8 ft.	10 ft.	£43 10	Estimates for Heating
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60 ft.	12 ft.	14 ft.	£100 0	application.

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46A, King William Street. } *LONDON BRIDGE.*

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HORTICULTURAL BUILDERS,
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W. H. LASCELLES AND CO. will give Estimates for every description of HORTICULTURAL WORK, free of charge, and send competent assistants when necessary.

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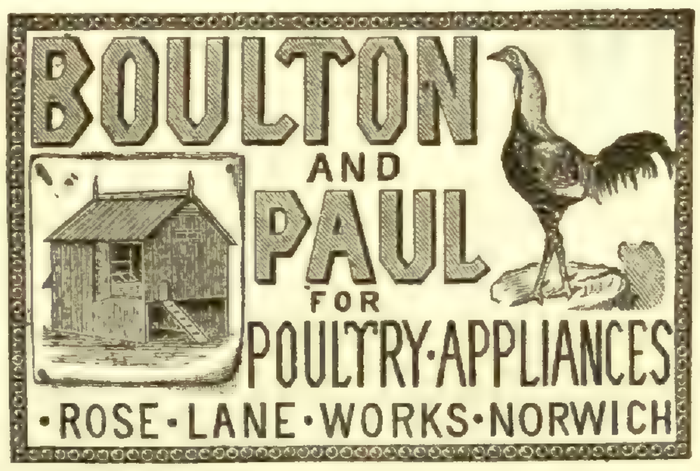

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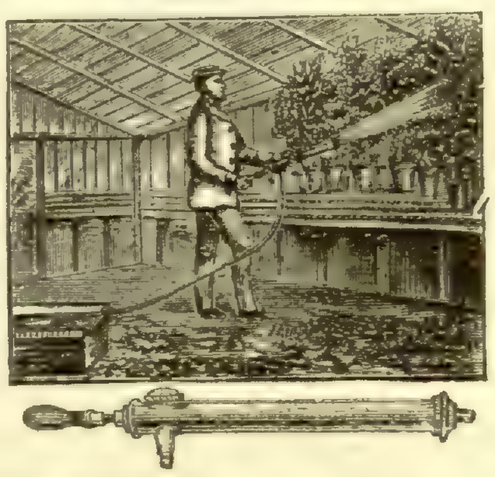

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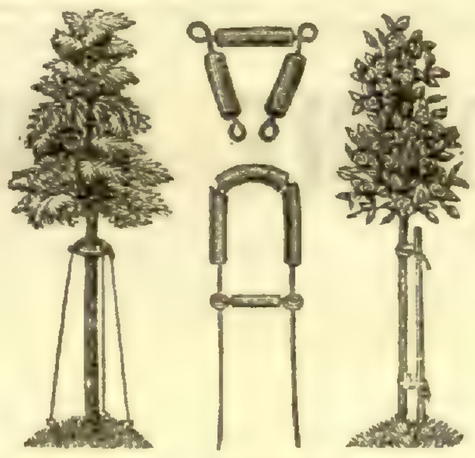

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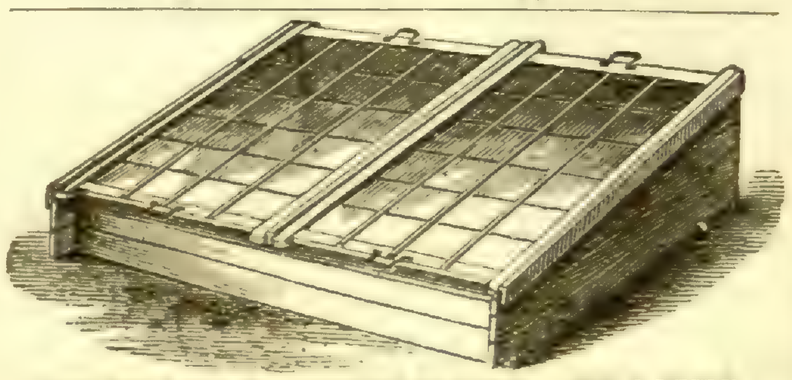
Complete Price List on application.



PORTABLE CUCUMBER FRAMES.

R. HALLIDAY AND CO. desire to draw special attention to their Cucumber Frames, of which they always have a large stock, ready glazed and painted. They are made of the best materials, and can be put together and taken apart in a few minutes by any one.

Prices delivered to any station in England:—

		£	s.	d.
2-light frame, 8 feet by 6 feet	Packing Cases free	3	10	0
3-light frame, 12 feet by 6 feet		5	5	0
6-light frame, 24 feet by 6 feet		10	0	0

The glass is nailed and puttied in. Lights and framing for brick pits at proportionately low prices.

R. HALLIDAY & CO.,
Hothouse Builders and Engineers,
ROYAL HORTICULTURAL WORKS, MIDDLETON, MANCHESTER.
London Agent, Mr. H. SKELTON, Seedsman, &c., 2, Holloway Road, N.

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FOR THE QUEEN'S JUBILEE.
(See Diplomas from South Kensington Exhibitions.)

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Made of Wood and Zinc only.

UNEQUALLED FOR DURABILITY.

REDUCTION IN PRICE!

AWARDED 40 PRIZE MEDALS.

Send for Reduced Price List.

Sole Agents for Great Britain:—

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WRIGHT & HOLMES.

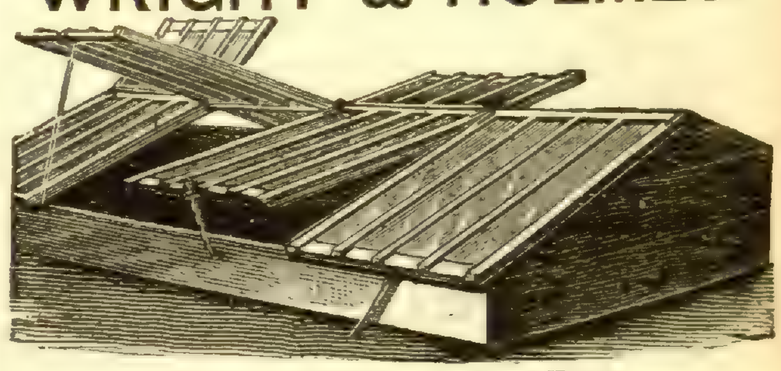


Figure 5.—Three-quarter Span Frame.

SILVER MEDALS 1884 and 1886.

The above Frames are well made, durable, and strong; the principals are cast-iron, to which the back and front are bolted. Lights 2 inches thick, glazed with 21-oz. English sheet glass, painted three coats. Delivered, carriage paid, to any railway station in England or Wales.

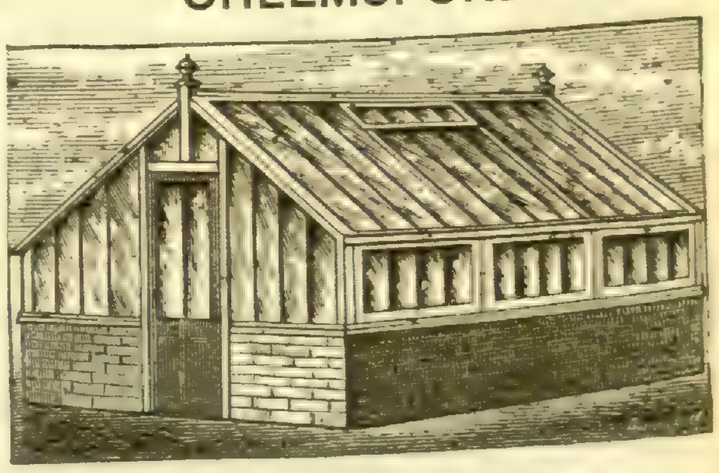
Length.	Width.	Price.
8 feet	6 feet	£4 10 0
12 ,,	6 ,,	6 3 0
16 ,,	6 ,,	7 18 0
20 ,,	6 ,,	9 12 6
24 ,,	6 ,,	11 10 0

Illustrated CATALOGUE post-free on application to

WRIGHT & HOLMES,
Horticultural Builders, Moseley Road, Birmingham.

BECKETT BROS.,

HORTICULTURAL BUILDERS AND HEATING ENGINEERS,
CHELMSFORD.



Length.	Width.				Length.	Width.			
10 by	8 ft.	£7	7	0	30 by	12 ft.	£23	19	6
15 by	10 ft.	11	15	0	40 by	14 ft.	34	9	0
20 by	12 ft.	17	4	6	50 by	14 ft.	42	1	0

LEAN-TO and THREE-QUARTER SPAN same prices as above.
PIT FRAMES equally cheap.

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NEW SYSTEM OF GLAZING WITHOUT PUTTY.

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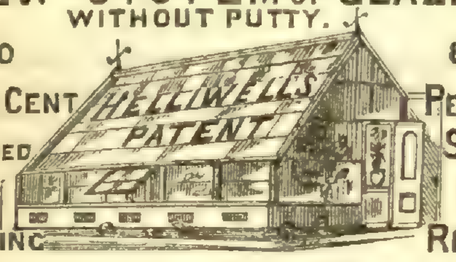

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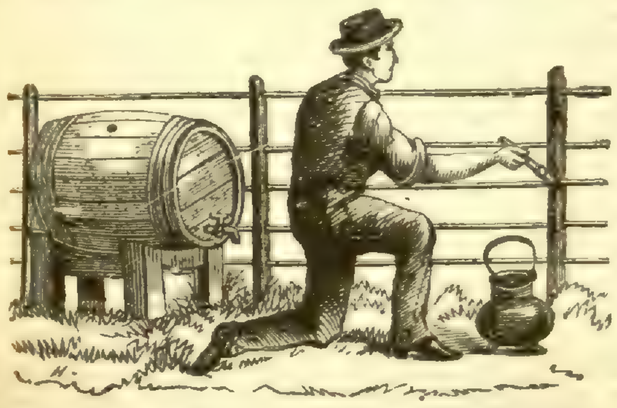
BLACK VARNISH

for preserving Ironwork, Wood, or Stone.



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An excellent substitute for oil paint, at one-third the cost. Used in all London Parks, at Windsor, and Kew Gardens, and on every important estate in the Kingdom. Has stood the test of forty years' trial. Requires no mixing; can be applied cold by any ordinary labourer.

Price 1s. 6d. per gallon at the manufactory, or carriage-paid to any railway station, 1s. 8d. per gallon in casks of 36, 20, or 10 gallons.

CAUTION.—Every cask bears the above Registered Trade Mark. Beware of cheap imitations.

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118, Queen Victoria Street, London, E.C.;
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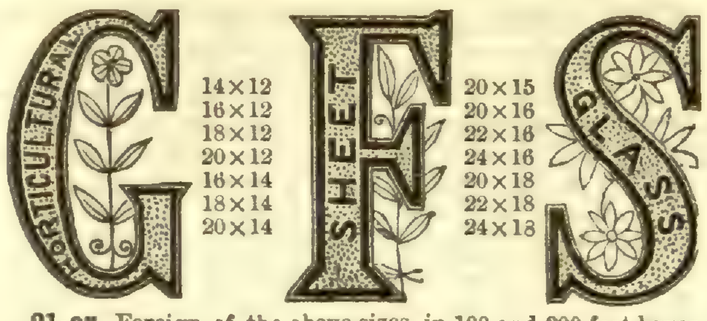

14×12
16×12
18×12
20×12
16×14
18×14
20×14

20×15
20×16
22×16
24×16
20×18
22×18
24×18

21-oz. Foreign of the above sizes, in 100 and 200 feet boxes, 3ds and 4ths qualities, always kept in stock.

A large stock of similar current sizes of **15-oz.** glass in 200 feet boxes.

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GLASS, LEAD, OIL and COLOUR MERCHANTS,
34, St. John Street, West Smithfield, London, E.C.
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A large quantity of all descriptions and sizes in stock, at the lowest possible prices.

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ESTABLISHED, A.D. 1818.

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Plans and Estimates on application.
Experienced Workmen sent to any part of the Kingdom.

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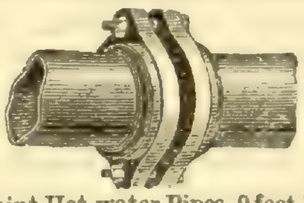
DENNIS PARK IRONWORKS, STOURBRIDGE,

The "Expansion Joint."



The Best and Quickest Made.

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Full Illustrated Revised Price List on application.

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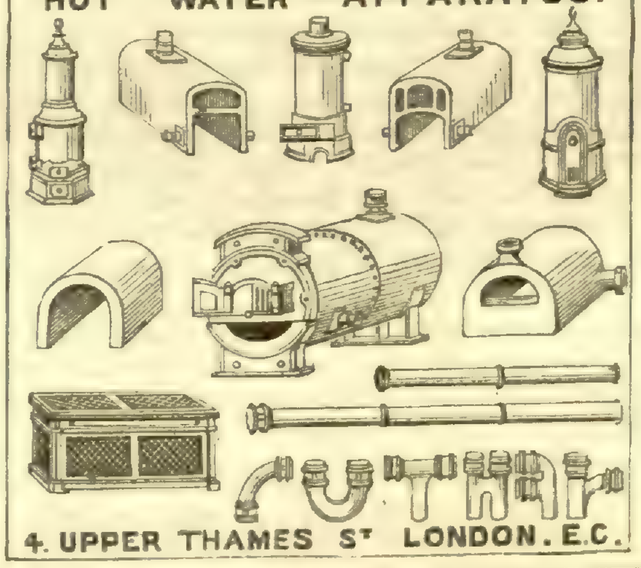
HOT WATER APPARATUS.



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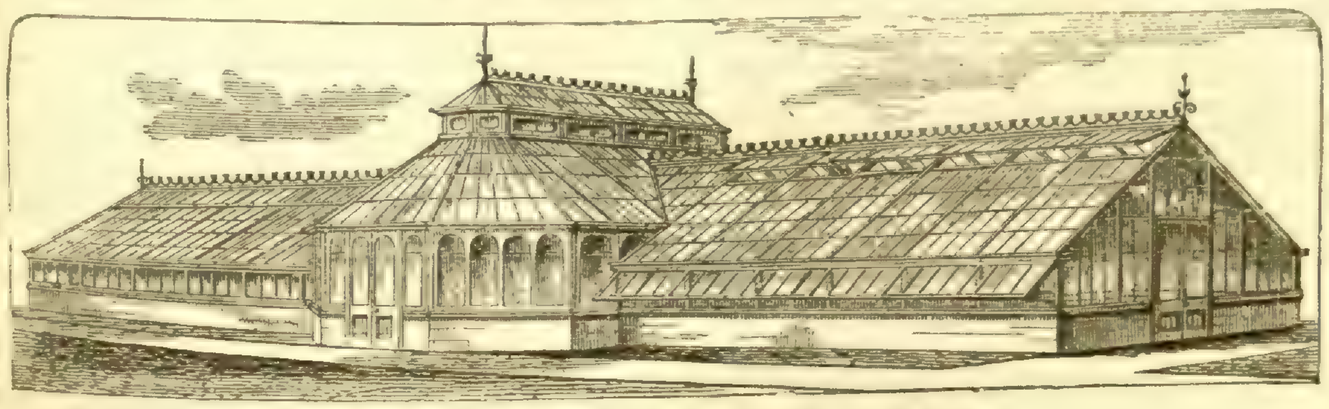
Five 1st Prize Medals recently awarded in open competition.



Five 1st Prize Medals recently awarded in open competition.

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ROYAL HORTICULTURAL WORKS, MIDDLETON, MANCHESTER.

Vineries, Stoves, Greenhouses, Peach Houses, Forcing Houses, &c., constructed on our improved plan, are the perfection of growing houses, and for practical utility, economy, and durability cannot be equalled. We only do one class of work, and that THE VERY BEST.

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Plans, Estimates and Catalogues free. Customers waited on in any part of the Kingdom.

Our Maxim is-and always has been—

MODERATE CHARGES. FIRST-CLASS WORK. THE BEST MATERIALS.

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7	„ ..	0	4	6	18	„ ..	0	10	0
8	„ ..	0	5	0	19	„ ..	0	10	6
9	„ ..	0	5	6	20	„ ..	0	11	0
10	„ ..	0	6	0	21	„ ..	0	11	6
11	„ ..	0	6	6	22	„ ..	0	12	0
12	„ ..	0	7	0	23	„ ..	0	12	6
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26 words, including name and address, 1s. 6d., and 6d. for every additional line (about 9 words) or part of a line.

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FOREIGN (excepting India and China); including Postage, **17s. 6d.** for **12** Months; India and China, **19s. 6d.**

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S. A. SANDS

(Successor to J. W. HAYTHORN),
Manufacturer of Hexagon and Chiswick

GARDEN NETS.

Warranted to Protect Bloom from Frost, Winds, Hail, and Fruit from Birds, Wasps, &c.

Patterns and Prices Free per Post.

Address—S. A. SANDS,
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SUPERIOR VARNISH,

For Preserving Ironwork, Wood, or Stone.

It is applied cold, and may be laid on by any farm labourer or other unskilled person. It dries quickly, giving a hard, brilliant polish, and looks equally as well as oil paint, yet at one-fourth the cost. Price:—Black, 1s. 6d. per gallon, in casks containing not less than nine gallons, delivered at most railway stations. Casks extra. Brushes for coating Ironwork, Wood, or Stone, 1s. each.

Catalogues of all kinds of Iron and Wire Fencing, Gates, &c., free on application.

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DOULTON & WATTS,

LAMBETH POTTERY, LONDON, S.E.

VASES, PEDESTALS, FOUNTAINS, GARDEN EDGINGS, &c., in

IMPERISHABLE TERRA COTTA.

Plain and Ornamental Pavings.

Tiles for Lining Walls of Conservatories,
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WANTED, a MANAGER, for a Florist's and Fruiterer's Shop. One who is well acquainted with the Buying and Growing of Plants, and who has a good knowledge of Arranging Flowers for Wreaths, Bouquets, &c.—F. K. P., 2, St. Stephens, Stamford.

THE LIVERPOOL HORTICULTURAL COMPANY REQUIRE a competent MAN to take charge of a Department where Ericas, Market Plants, and Vines are grown extensively.—Apply giving references and stating salary expected, The Vineyard and Nurseries, Garston, near Liverpool.

WANTED, a FOREMAN for Houses, to Grow Pot Vines, Tea Roses, Eucharis, ordinary Stove and Greenhouse Plants, and Orchids, and to maintain Succession of Plants in Flower.—Apply, stating wages required and all particulars, to GARAWAY AND CO., Durdham Down, Clifton, Bristol.

Borough of Wednesbury.
THE WEDNESBURY CORPORATION REQUIRE, AT ONCE, the services of an active intelligent Man as PARK KEEPER. The wages will be £1 5*s.* per week, with house, coal, gas, and water. Applications to be sent in not later than Wednesday, the 11th inst., at noon, addressed to the Chairman of the Public Baths and Parks Committee, Town Hall, Wednesbury, and endorsed, "Park Keeper."—By order, Municipal Offices, Wednesbury, May 4.

WANTED, a GROWER of Tomatos and Mushrooms; one with a knowledge of Outside Nursery Work preferred. Must have filled a similar situation. Wages, 25*s.* per week, with house.—Address, stating age, and where last employed, with references as to ability, to 2, Parker Street, Liverpool.

WANTED, AT ONCE, a thorough good all-round hand FLORIST. Must be thoroughly competent.—BILLINGS, Florist, Lower North Street, Poplar, E.

To Florist's Assistants.
WANTED, an active young MAN, in Plant Department at ROBERT GREEN'S Floral Establishment, Crawford Street, London, W. Apply any morning before 10 o'Clock.

WANTED, AT ONCE, an experienced MAN, to attend the Manchester Market, and to fill up remainder of his time in the Nursery. Only those need apply who can give good references as to honesty, sobriety, and energy. To a suitable man there would be fairly good prospects.—State wages required to JOHN HAYWARD, The Nurseries, Cheadle, near Manchester.

WANTED, a strong active LAD, to assist in a Garden about five miles from London. Wages, 15*s.* per week.—Apply by letter, stating age, past employment, and all particulars, to L. C. S., Hawtin, Son & Cook, 24, Paternoster Row, E.C.

WANTED, AT ONCE, a LEADING HAND for a West End Florist's. Must be a good Designer, able to undertake Table Decorations and Make up Posies. Character must bear the strictest investigation.—Apply by letter to ORCHID, Bolton's Library, Knightsbridge, S.W.

WANTED, a young MAN, used to Bouquet and Wreath Making. Also must have a knowledge of Book-keeping.—H.S., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

GARDENING APPOINTMENTS.

Mr. Robert Todd, many years Gardener to A. B. Stewart, Esq., Rawcliffe, Langside, Glasgow, and latterly Superintendent of the gardens of the Edinburgh International Exhibition, has been appointed Head Gardener to Holbrook Gaskell, Esq., Woolton Wood, Woolton, Liverpool.

Mr. John Horton, for the last seven and a half years Foreman in the gardens of His Grace the Duke of Portland, at Welbeck Abbey, has been appointed Head Gardener at that place.

Mr. J. Thomas, late Gardener to the Dowager Mrs. T. Drake, has succeeded Mr. Bailey at Shardeloes Gardens, Amersham.

Mr. G. Haigh has been appointed Head Gardener to W. H. Tate, Esq., Highfield, Woolton, near Liverpool; and Mr. F. Evans, Head Gardener to — Austin, Esq., Ellenmead, Totteridge, N. Both of the above were, until their appointment, in the gardens of Baron Ferdinand de Rothschild at Waddesdon, Aylesbury.

Mr. John H. Cumming, late Foreman at Abbotstown, Castle Knock, Dublin, has been appointed Head Gardener and Steward to the Right Hon. Viscount Gough, St. Helen's, Bookerstown, Co. Dublin.

WANT PLACES.

POSTAL ORDERS.—To Advertisers, Subscribers, and Others.—It is very important in Remitting by Postal Order that it should be filled in payable at No. 42, DRURY LANE, to W. RICHARDS, as, unless the Number of a Postal Order is known, and it has been made payable at a particular office, and to a particular person, it is impossible to prevent any person into whose hands it may fall from negotiating it.

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To Noblemen and Gentlemen requiring Land Agents, STEWARDS, BAILIFFS, or GARDENERS.
JAMES CARTER AND CO. have at all times upon their Register reliable and competent MEN, several of whom are personally well known to Messrs. Carter. Enquiries should be made to 237 and 238, High Holborn, W.C.

RICHARD SMITH AND CO. beg to announce that they are constantly receiving applications from Gardeners, seeking situations, and that they will be able to supply any Lady or Gentleman with particulars &c.—St. John's Nurseries, Worcester.

Gardeners.
THOMAS KENNEDY AND CO. have on their Register a number of first-class GARDENERS, FORESTERS, &c., wishing engagement, and will be glad to furnish particulars to any one in want of same.—THOMAS KENNEDY AND CO., 108, High Street, Dumfries, N.B.

Situations Wanted.
JOHN LAING AND CO., having filled many important places, can RECOMMEND with every confidence, energetic and practical MEN of tested ability and first-rate character. Ladies and Gentlemen in want of Gardeners and Bailiffs, or Gardeners for firsr-rate Establishments, or Single-handed situations, can be suited, and have full particulars by applying to us. No fee charged.—JOHN LAING AND CO., The Nurseries, Forest Hill, S.E.

Gardeners, Under Gardeners, Bailiffs, &c.
WM. CUTBUSH AND SON have at the present time on their List MEN whose characters will bear strict investigation, and such as from their personal knowledge can recommend as to abilities, &c.—Ladies and Gentlemen requiring either of the above can be suited with reliable, first-class men by applying to Wm. Cutbush & Son, Highgate Nurseries, N.

THE LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, The Vineyard and Nurseries, Garston, near Liverpool, are at present in a position to recommend a competent man of excellent character as HEAD GARDENER, and also another MAN, who, in addition to being a good General Gardener, has had great experience as an Orchid Grower. Both men are capable of Managing Large Establishments.

GARDENER (Head).—Age 39; married, no family. Thoroughly experienced and trustworthy. Good character.—GEO. MORRISS, 38, Cecil Street, Ashbourne Road, Derby.

GARDENER (Head).—Age 31, married, no family; eighteen years' experience in large establishment. Can be well recommended from last situation.—C. T., W. Porteous & Co., Glasgow.

GARDENER (Head).—Age 36, married, two in family; thoroughly practical in all branches. Eleven years' excellent character from present situation.—W. C., The Gardens, Clandon Park.

GARDENER (Head).—G. Beddoes, six years Head Gardener and Orchid Grower to the late R. P. Percival, Esq., of Clevelands, Birkdale, Southport, is open to an engagement with any Lady or Gentleman requiring the services of a thoroughly practical man.—Address as above.

GARDENER (Head); age 29.—W. Howe, Gardener to H. Tate, Esq., would be pleased to recommend his Foreman, T. Pearce, to any Lady or Gentleman requiring the services of a thorough practical man. Three years' good character with good testimonials from previous employers.—T. PEARCE, Park Hill, Streatham.

GARDENER (Head).—Lady de Rothschild is anxious to recommend as Head Gardener a man who for nearly five years acted as Foreman to her Gardener. He thoroughly understands his business, and is very honest and sober.—Lady DE ROTHSCHILD, Aston Clinton, Tring.

GARDENER (Head); age 41, married, no family. Abstainer.—Mr. Clarke, Gardener to the Earl of Lonsdale, Lowther Castle, Penrith, will be pleased to recommend to any Lady or Gentleman a thoroughly reliable, competent and practical man with undeniable character from present and previous employers.

GARDENER (Head); age 29, married.—A. Young, Gardener to J. G. Williams, Esq., Pendley Manor, Tring, Herts, can with confidence recommend Charles Murray to any Lady or Gentleman requiring a practical Gardener. A thoroughly experienced man with twelve years' excellent character from present situation.

GARDENER (Head), to any Nobleman, Lady, or Gentleman.—Age 33, single; practical and energetic. First-rate Grape Grower and Plantsman; Kitchen Gardens, and Pleasure Gounds. Good Manager of men. Good character.—ALPHA, Wilson, Newsagent, 52, Hartfield Road, Wimbledon, S.W.

GARDENER (Head); age 45, married, one son (age 11).—Any Lady, Nobleman, or Gentleman requiring the services of a thoroughly experienced man in all branches of the profession, including Laying-out New Grounds. Could Manage Grass Land if required. First-class recommendations.—H. IRELAND, Mr. Phillips, Staple Fitzpaine, near Taunton, Somerset.

GARDENER (Head) age 36.—Mr. Haines, Gardener to the Earl of Radnor, Coleshill House, Highworth, Berks, would be pleased to recommend a thoroughly practical man, who has had eighteen years' experience in good places, the last ten as Head, and is a good all-round Gardener, and a highly respectable man. Also understands Land and Stock. Character will bear the strictest investigation.

GARDENER (Head Working), where two or more are kept.—Age 28; thirteen years' practical experience. Good references.—J. B., Cross Lane Head, Bridgnorth, Shropshire.

GARDENER (Head Working).—Age 30, married, one child; understands Vines, Melons, Cucumbers, Stove and Greenhouse Plants, Fruit, Flower, and Kitchen Gardening.—E. STREET, Chilland, Winchester.

GARDENER (Head Working), where one other is kept.—Thirteen years' practical experience. First-class testimonials.—J. P., 6, Belvedere Cottages, Church Road, Wimbledon, Surrey.

GARDENER (HEAD WORKING).—Age 29; fifteen years' practical experience in general routine of Gardening. Good references.—S., Mr. Jordan, Stationer, Flask Walk, Hampstead, N.W.

GARDENER (HEAD WORKING); age 39, married, no family.—A LADY highly recommends her Head Gardener. Thoroughly experienced in Stove and Greenhouse Plants, and Fruit, Flower, and Kitchen Gardening.—G. CLEMENTS, Fulbourn Lodge, Eastbourne.

GARDENER (HEAD WORKING).—£10 Bonus will be given to any one assisting advertiser to obtain situation as above. Excellent character. Abstainer.—E. JAMES, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

GARDENER (HEAD WORKING).—Single, abstainer; fifteen years' experience in all branches, four as Head in last place. Highly recommended by last and previous employers.—H. E., 26, Bloomfield Place, New Bond Street, Oxford Street, W.

GARDENER (HEAD WORKING).—Age 30, single; fourteen years' experience with Vines, Peaches, Cucumbers, Stove and Greenhouse Plants, Flower and Kitchen Gardens. At liberty about midsummer. Well recommended.—W. KING, Foxley Gardens, Hereford.

GARDENER (HEAD WORKING).—Age 32, married, no family; sixteen years' thorough practical experience in good establishments. Excellent references as to ability and personal character from present and previous employers.—W. WAINWRIGHT, Woodhouse, Sheffield.

GARDENER (HEAD WORKING), where no less than three or four are employed.—Age 34, married, one child (age 8). £5 Bonus will be given to any one who is the means of advertiser obtaining a good comfortable situation. Thoroughly experienced in all branches. Excellent character.—B., 20, Dering Place, Southbridge Road, Croydon.

GARDENER (HEAD WORKING), where three or more are kept.—Fifteen years as Head, ten as Head in one place. Good character. No objection to look after Stock and Land. Able to Design, Draw Plans, Lay-out Grounds and Hothouses.—GEORGE PEARSON, Mr. Neve, Bentley Priory, Great Stanmore, Middlesex.

GARDENER (HEAD WORKING); age 31, married, one child.—A GENTLEMAN can highly recommend his late Head Gardener, J. Gore, to any Lady or Gentleman requiring the services of a man thoroughly experienced in Stove and Greenhouse Plants, Fruit, Flower, and Kitchen Gardening, and the Management of a good Garden.—Wannock, Polegate, Sussex.

GARDENER (HEAD, or good SINGLE-HANDED).—Middle-aged; no family. Active; fourteen years' reference.—BETA, Imperial Nursery, Chislehurst West, Kent.

GARDENER (HEAD, where two are kept, or good SINGLE-HANDED).—Age 36; twenty years' experience; well up in all branches. Good character and testimonials.—G. L., 6, Englehart Road, Catford, S.E.

GARDENER, in the Houses, under a Foreman.—Age 22; three and a half years in last situation with Colonel Clitherow, and can be well recommended.—F. HOLBORN, 2, West Dock Avenue, Hessle Road, Hull.

GARDENER (good SINGLE-HANDED).—Age 25, single; understands Gardening in all branches. Two years' good character from last place.—J. W., 50, Fleet Road, Hampstead, N.W.

GARDENER, where another is kept, or good SINGLE-HANDED.—Single; understands all branches of Gardening. Two years' good character—five previous.—C. J. RADCLYFFE, Esq., Hyde House, Wareham, Dorset.

GARDENER, where two or three are kept, or good SINGLE-HANDED.—Age 24; ten years' experience in all branches.—A. SMITH, 3, Kent Villas, Swanley Junction.

GARDENER (SINGLE-HANDED, or with help).—Age 24; four years Foreman in present situation. Thoroughly understands his work. Character of the highest order.—F. CLARKE, Ousefleet Hall Gardens, Goole.

GARDENER (SINGLE-HANDED), or good UNDER, to work in the Garden or help in the Houses.—Age 27.—W. PENNELLS, 3, Croham Terrace, Sussex Road, Croydon.

GARDENER (SECOND, in the Houses, or SINGLE-HANDED).—Age 22; accustomed to Stove, Greenhouse, &c. Seven years' reference.—A. B., Lewins Garden, Crockham Hill, Edenbridge, Kent.

GARDENER (SECOND), or otherwise, Inside or Out.—Age 24; has good experience and characters.—THOS. HULL, Babraham Hall Gardens, Cambridge.

GARDENER (SECOND), or JOURNEYMAN in the Houses.—Age 22; six years' experience, two years in present place. Good character.—S. T. BENBOW, Library, Sunbury-on-Thames.

GARDENER (UNDER, or SINGLE-HANDED).—Age 23; six years' experience. Good character.—F. JONES, 31, Heron Road, Herne Hill, S.E.

GARDENER (UNDER).—Age 19; good character.—W. FOX, Ambury Cottage, Ashton's Lane, Huntingdon.

GARDENER (UNDER).—Age 20; used to Glass and Kitchen Garden. House coming down. Good personal character.—R. D., 5, Albert Place, Putney, S.W.

GARDENER (UNDER).—Age 24; five years' experience.—J. MARSHALL, Cedar Cottage, Harrison's Road, Edgbaston, near Birmingham.

GARDENER (UNDER), in Kitchen Garden and Pleasure Grounds.—Age 25; two years' good character from last employer.—C. W., Parkfield Gardens, Potters Bar, Middlesex.

GARDENER (UNDER).—Age 18; willing to make himself useful. Four years in Garden. Two years' good character from present situation.—C. C., 6, Raeburn Street, Brixton, S.W.

GARDENER (UNDER), Indoors and Out.—Age 20; three years' good character; five years in garden. Total abstainer.—C. KURN, Crownpitts, Godalming, Surrey.

To Nurserymen.

FOREMAN, or MANAGER, in a good Nursery.—Understands the General Routine of the Trade. Twenty years' experience in Growing for the London Markets. Well up in the Plant and Cut Flower Trade, First-class references.—D. M., 40, Parkstone Road, Rye Lane, Peckham, S.E.

FOREMAN, in the Houses.—Age 24; nine years' experience in the Cultivation of Stove and Greenhouse Plants, Vines, Peaches, Melons, &c. Good character.—C. LINK, Everingham, York.

FOREMAN, in Houses, or Department.—Age 24; eleven years' experience in Fruit and Plant-houses. Two years in last situation. First-class testimonials. W. ABBEY, Porter's Park Gardens, Shenby, Barnet, Herts.

FOREMAN, in a good establishment, or Department.—Age 27; twelve years' experience in first-class places. Good character.—WALTER ADAMS, Cottage Hill, Oxted, Surrey.

FOREMAN.—Mr. C. GIBBS will be pleased to recommend H. Clayton, who has been with him three years and a half, as Foreman in some good Gardens.—H. CLAYTON, Eythrope Gardens, Aylesbury, Bucks.

FOREMAN; age 28.—Mr. LEE, Powis Castle Gardens, Welshpool, can with confidence recommend J. Voss, his Foreman, to any one requiring a trustworthy and thoroughly practical man. Has been with me two years.—J. VOSS, 16, Charles Street, Bishop Field, Chester.

FOREMAN (WORKING), in Nursery.—Age 37; well up in Roses, Fruits, Forest Trees; also Early and Late Forcing. Seven years' apprenticeship, and fifteen years in three of the leading Nurseries. A good Salesman, and has been used to a pushing trade.—W. T. CROUCH, Spark Hill, near Birmingham.

FOREMAN, or JOURNEYMAN (FIRST), in the Houses.—Age 23; can be well recommended by his Head Gardener; two years in present situation.—For further particulars please apply to T. H., 41, Wellington Street, Strand, W.C.

To Nurserymen.

PROPAGATOR, or FOREMAN.—Age 25; eleven years' experience in first-class houses; knowledge of Conifers and Shrubs. Good Salesman.—WINSER, Plummers Plain, Horsham, Sussex.

PROPAGATOR and GROWER of Hard and Soft-wooded Plants.—Well up in Roses, Clematis, and Rhododendrons.—C. MILLER, Old House Farm, Hayward's Heath, Sussex.

PROPAGATOR and GROWER of Hard and Soft-wooded Plants for Market.—Age 27; well up in General Nursery Work, including Cucumbers, Tomatos, Mushrooms, &c.—H. B., Rose Nursery, Mottingham, near Eltham, Kent.

PROPAGATOR (ASSISTANT), Indoors, in a good Nursery.—Age 23; well up in Potting, Watering, and Tying. Ten years' experience and references. Please state particulars to E. CARDWELL, Ancorns Building, York Street, Harborne, Birmingham.

JOURNEYMAN (FIRST), in a good establishment.—Age 21; can be well recommended. Two years in last place.—R. WEBB, Post Office, Duxford, Cambridgeshire.

JOURNEYMAN (FIRST), in the Houses, under a Foreman.—Age 22; eight years' experience, and good character. Bothy preferred.—E. N., Croft House, Bridge Street, Witham, Essex.

JOURNEYMAN (FIRST), in a good establishment.—Age 25; ten years' experience—over two in present situation. Bothy preferred.—C. McGREGOR, Doneraile Gardens, Cork, Ireland.

JOURNEYMAN (FIRST), in a good establishment; age 21.—Mr. E. GIBBS will be very pleased to recommend a young man as above; has been with him four years.—M. A. WISE, Eythorpe, Aylesbury, Bucks.

JOURNEYMAN.—Mr. HUGHES, Eydon Hall Gardens, Byfield, wishes to recommend a very steady and industrious young man as above.

JOURNEYMAN; age 19.—Mr. ASHTON, Glossop Hall, Derbyshire, can highly recommend a strong active young man as above; over two years in these gardens. Bothy preferred.

To Head Gardeners.

JOURNEYMAN, Inside; age 20.—J. TRIGGER, The Gardens, Milton, Peterborough, can highly recommend Samuel Watkins to any Head Gardener requiring an active and industrious young man as above.

To Gardeners.

JOURNEYMAN.—Age 22; five years' experience in the Houses. Three years' good character from present situation. Total abstainer.—E. M., J. Hampton, 10, Chalkpit Cottage, Dorking, Surrey.

JOURNEYMAN, in a good establishment.—Age 23; eight years' experience Inside and Out in four good establishments. Best references from previous employers.—WILLIAM BURLEY, The Gardens, Felcham Grove, near Leatherhead, Surrey.

JOURNEYMAN, or SECOND, in a good establishment.—Seven years' experience; good character—C. MOSS, Stanmore Gardens, Bridgnorth, Salop.

JOURNEYMAN (SECOND), in the Houses.—Age 18; has had four years' experience, and can be well recommended.—W. HARBORN, Fishpool Street, St. Albans.

IMPROVER.—Age 18; Premium £10 yearly.—T. L., 5, Cornfield Road, Eastbourne.

TO NURSERYMEN and SEEDSMEN.—Situation desired by Advertiser, who has had the Management of Nursery and Seed Business for his mother, deceased; has a good knowledge of Soft-wooded Propagation and the Work of a Market Nursery; considerable experience in Waiting on Customers.—J. G. COOK, Manor House, Bishopstoke, Hants.

TO MARKET GROWERS, FLORISTS, &c.—Wanted by an energetic and active young man (age 30), a situation as Assistant. Would invest £100 in a genuine business. Has had considerable experience in Fruit, Plant, and Vegetable Growing. First-class references.—W. K., 41, Wellington Street, Strand, W.C.

TO NURSERYMEN.—Wanted, a situation under a Foreman or Manager. Well up in Propagating and Growing. Twelve years' experience. Age 26. Good character.—W., 24, Holland Street, Accrington.

TO GARDENERS, &c.—A respectable young Man seeks a situation in the Houses. Six years' experience, last two in Orchid Department. Bothy preferred. Good character. Total abstainer.—H. J. PEPPER, Barnins, Potter's Bar, Herts.

TO GARDENERS.—Wanted by a youth (age 18), a situation under a Gardener. Two years in garden. Good character.—C. COCKERSOLL, The Gardens, Stoke Rochford, Grantham.

TO FOREMEN, &c.—Wanted, a situation under a Foreman in the Houses. Well recommended. Age 21.—R. C., Bull & Crockford, Gardeners, Queen's Road, Richmond.

Seed Trade.

MANAGER, or TRAVELLER.—Age 48; thoroughly experienced in all branches of the Trade. Highest references.—W. K., 1, St. Lenord's Road, Thorpe Hamlet, Norwich.

SHOPMAN (HEAD), or MANAGER.—Age 30. Has a good knowledge of all the Departments of the Seed and Bulb Trades, gained during fourteen years in some of the leading London and Provincial Houses. Understands Office Work; good Correspondent. Highest references.—E. F., Osman & Co., 14, Windsor Street, Bishopsgate, London, E.C.

Seed Trade.

SHOPMAN, or TRAVELLER.—Advertiser, with connection, desires re-engagement; thorough knowledge of the business. Excellent references.—SEEDSMAN, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, London, W.C.

SHOPMAN (ASSISTANT).—Age 21; five years' experience. Good knowledge of Plant and General Nursery Stock.—JNO. HARDING, St. Neots, Hunts.

TRAVELLER, or SALESMAN, in any Business connected with Horticulture.—Age 27. Has a large connection amongst Private Gardeners and the principal Nurserymen throughout the kingdom. Can be well recommended.—A. B., 77, Lavender Road, Battersea, S.W.

TRAVELLER, on Commission.—Advertiser, one of considerable experience in all branches, with good connection, is prepared to treat with any one requiring such to represent them.—W., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

NURSERY CLERK.—Age 26; well acquainted with Outdoor Stock, also knowledge of the Plant and Seed Trade. Can Execute and Despatch Orders. Good Book-keeper and Correspondent. Excellent references as to honesty, industry, &c.—W. M., *Gardeners' Chronicle*, 41, Wellington Street, Strand, W.C.

TO THE SEED TRADE, &c.—An experienced Clerk requires an appointment in any department of Counting-house Work.—F. W. LANGDON, 9 and 10, Addle Street, London, E.C.

HOLLOWAY'S PILLS and OINTMENT.—During excessive variations of temperature every one is more or less liable to internal congestions and inflammations. Throat chest, liver, bowels, kidneys, and skin all suffer in some degree, and may be relieved by rubbing in this Ointment, aided by proper doses of the Pills, for administering which full directions accompany each box; in truth, any one who thoroughly masters Holloway's "instructions" will, in remedying disease, exchange the labour of an hour for the profit of a lifetime. All bronchial, pulmonary, and throat disorders require that the ointment should be thoroughly well rubbed upon the skin twice a day with great regularity, considerable briskness, and much persistence.

JOHN BLAKE'S
PATENT SELF-ACTING HYDRAULIC RAMS.

Application of BLAKE'S Patent HYDRAULIC RAM,

Forcing Water to suburban district at a higher level than the town's reservoir, the waste water from the Ram being used in the lower parts of the town.

VILLAGE WATER SUPPLY.

From J. B. McCALLUM, Esq., C.E., Borough and Water Engineer, Blackburn, November 1, 1886.
Guide (Borough of Blackburn) Water Supply:—

Dear Sir,—Following is the short report I promised to send as to the work performed by the Hydraulic Rams supplied by you to the Blackburn Corporation, after they had been in operation sufficient time to take proper observations.

The district of Guide (population about 500), in the Borough of Blackburn, is situated above the highest reservoir of the Blackburn Waterworks, and had no regular water supply until last July, when the Water Committee caused two of your Patent Hydraulic Rams to be put down, and worked by water from a reservoir having a varying but maximum head of 34 feet 3 inches on the rams, the waste (clean) water gravitating to a lower adjacent reservoir.

You contracted to supply rams which would force 8000 gallons per day each through 1295 yards of delivery pipe to a service tank 170 feet above the rams, and I am bound to state that the result has considerably exceeded my expectations, as the rams are capable of pumping, and have pumped, much more water than you promised. The percentage of efficiency exceeds all I expected, and is, in my opinion, much more than is usually obtained from hydraulic rams.

From a test I made on September 29, I found that two rams with ¼-inch and ⅜-inch strokes respectively, supplied with 194,030 gallons per day, together pumped 26,090 gallons per day to a height of 170 feet, giving 71·43 per cent. of efficiency, and one ram working at ⅜-inch stroke, and with only 16 feet of working fall supplied with 154,587 gallons per day, pumped 10,587 gallons per day to the same height, showing 72·75 per cent. of efficiency.

At a subsequent test on October 11, one ram at ⅜-inch stroke, and having 31 feet 9 inches of working fall supplied with 121,083 gallons per day, pumped 17,583 gallons per day to an elevation of 171¼ feet. The efficiency in this case being 79·57 per cent.

In arriving at these results the greatest care was taken to positively measure the water besides having a meter check on feed and delivery pipes.

The work carried out by you at Blackburn is substantial and satisfactory in every way, and if any engineer wishes to make his own observations he is at liberty to come here and do so.

From Mr. HENRY ROBINSON, Engineer to the Stockport District Waterworks Company, September 8, 1883:—

Dear Sir,—I can now report well of the two Hydraulic Rams we have fixed to your instructions for the supply of Disley Village; 40,000 gallons per day was the quantity you promised they would force to a height of 68 feet, but on testing them I am convinced that 50,000 gallons is not the limit of their power, whilst the quantity of waste water used in driving them is not equal to half the capacity of the 6-inch pipe by which they are fed, and I am inclined to the belief that a more simple and efficient pump cannot be found.

JOHN BLAKE, ENGINEER, ACCRINGTON, LANCASHIRE.

Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C. Printed by William Richards, at the Office of Messrs. Bradbury, Agnew & Co., Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and published by the said William Richards, at the Office, 41, Wellington Street, Parish of St. Paul's, Covent Garden, in the said County.—Saturday, May 7, 1887. Agent for Manchester—John Heywood.

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CONTENTS.

Anemone Fanninni ... 644
Asparagus, a giant ... 644
Books:—
Playing at Botany ... 647
Villa Gardening ... 647
Botanical Magazine ... 641
British Guiana, primæval forests of 637
Broccoli, hardy 650
Crinum capense 649
Daffodils, rotten and decayed 650
Dresden International Horticultural Exhibition 646
Flower garden, the ... 642
Food Exhibition, Amsterdam 647
Forestry 642
Fritillaria armena var. fusco-lutea 639
Frost, Philip, the late ... 649
Fruits under glass ... 648
Hardy fruit garden ... 652
Hyacinths at Reading ... 647
Hydrosme Leopoldiana... 642
Law:—
Campbell *v.* Caledonian Railway ... 652
Magnolia Campbelli ... 648
Myrsiphyllum 640
Naegeli, Professor C. von 647
Narcissus calathinus ... 640
Orchid-houses, the ... 648
Orchids, bigeneric hybrids 646
Oxlips from Cork ... 650
Pansies 640
Plants and their culture 643
Presentation 647
Rating deductions ... 650
Seed trade 643
Societies:—
Bath Floral Fête ... 651
Royal Horticultural ... 650
Trees and shrubs ... 648
Vines, red-spider on ... 649
Wonderful plants ... 648
Weather 652

ILLUSTRATIONS.

Frost, Philip 649
Hydrosme Leopoldiana 645
" " leaf 644
Narcissus triandrus and vars. 638, 640, 641, 647, 651

NOTICE TO SUBSCRIBERS.—All Numbers of the "Gardeners' Chronicle" from January 1 of this year are still to be had.

ROYAL BOTANIC SOCIETY of LONDON.
Gardens, Regent's Park.
FIRST SUMMER EXHIBITION of PLANTS and FLOWERS, WEDNESDAY, May 18.
Schedules of Prizes now ready.
Entries Close to-day, Saturday, May 14.

CRYSTAL PALACE
GREAT FLOWER SHOW of the SEASON.
SATURDAY, May 21.
Schedules and Entry Forms on application to
W. G. HEAD, Garden Superintendent.

ALEXANDRA PALACE,
London, N.
GREAT ROSE SHOW, JULY 14, 15, and 16. Entries close July 7, 1887. For Schedules and full particulars, apply to J. S. COOKE, Secretary of the Show, Alexandra Palace, N.

ROYAL BOTANICAL and HORTICULTURAL SOCIETY of MANCHESTER.
The ANNUAL WHITSUNTIDE HORTICULTURAL EXHIBITION will open at Manchester on FRIDAY, the 27th inst. For particulars apply to the undersigned, BRUCE FINDLAY.
Royal Botanic Gardens, Manchester.

BRIGHTON and SUSSEX FLORICULTURAL and HORTICULTURAL ASSOCIATION.
GRAND SUMMER EXHIBITION, JULY 6 and 7, at the Royal Pavilion. 1st prize for 10 Stove and Greenhouse Plants, £10. 1st prize for 8 Orchids, £5. 1st prize for 12 Foliaged Plants, £5. 1st prize for 48 Roses, £5. 1st prize for Collection of Fruit, £5. Schedules of prizes ready.
EDWARD CARPENTER, Secretary.
Secretary's Office: 96, St. James' Street,
Brighton, March 28, 1887.

SECOND NATIONAL CO-OPERATIVE FLOWER SHOW, SOUTH KENSINGTON,
AUGUST 23, 1887.
SIXTY POUNDS in PRIZES for FLOWERS, FRUITS, and VEGETABLES; Silver and Bronze Medals, Certificates of Merit, and Numerous Special Prizes. Schedules of Prizes on application to
WILLIAM BROOMHALL, Secretary.
1, Norfolk Street, Strand, W.C.

WATFORD CHRYSANTHEMUM SOCIETY.
President:—The Right Hon. the Earl of Clarendon.
The SECOND ANNUAL EXHIBITION of CHRYSANTHEMUMS and other AUTUMNAL FLOWERS and FRUITS will be held in the Agricultural Hall, Watford, on TUESDAY and WEDNESDAY, November 15 and 16, 1887. Schedules may be obtained on application to
CHAS. R. HUMBERT, Hon. Sec. and Treasurer.
Watford, Herts.

LINNEAN SOCIETY,
Burlington House, Piccadilly, W.
The ANNIVERSARY MEETING of the Society will be held at the Society's Apartments on TUESDAY, May 24, at 3 o'Clock precisely, for the ELECTION of a COUNCIL and OFFICERS for the ensuing year, and other business.
B. DAYDON JACKSON, Secretary.

EIGHTY THOUSAND CLEMATIS, in Pots, of all the finest Double and Single Varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12*s.* to 24*s.* per dozen, strong plants; extra strong plants repotted into 5½-inch pots, 2*s.* 6*d.* each. Descriptive LIST on application.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

HOLLYHOCKS.—We are again in a position to offer finest named varieties, strong, healthy plants, at 18*s.*, 24*s.*, and 30*s.* per dozen. Early orders solicited. Our CATALOGUE of Florists' Flowers for 1887 is now issued. It is admitted by all to be the Premier Scotch List. Send for a copy.
R. B. LAIRD AND SONS (late Downie & Laird), Nurserymen, Edinburgh.

CHRYSANTHEMUMS, 550 varieties, true to name, strong Cuttings; buyers' selection, 1*s.* 6*d.* per dozen, 10*s.* per 100; Plants, 2*s.* 6*d.* per dozen, 16*s.* per 100. For price of new sorts see CATALOGUE. Many of the largest growers are supplied, and many of the best prizes in the county have been taken from plants and cuttings supplied by me. Catalogue, two stamps, of
WM. ETHERINGTON, Chrysanthemum Grower, Swanscombe, Kent.

Important Notice.
To Florists, Seedsmen, Horticultural Builders, &c.
PLANTS, FLOWERS, FRUITS and VEGETABLES a Specialty.
WM. J. WELCH begs to call particular attention to his productions for ILLUSTRATING BOOKS, MAGAZINES, CATALOGUES, and for ADVERTISING PURPOSES.
For Specimens see *Gardeners' Chronicle*, 1883 to 1886.
ADDRESS:—25, Wellington Street, Strand, London, W.C.

Palms (Jubilee), Tree Ferns.—To the Trade or otherwise.
FOR SALE, OR EXCHANGE, a splendid and noble lot of PALMS, TREE FERNS, &c. They are in fine, healthy condition, in tubs and large pots; sizes varying from 5 feet upwards. A splendid chance. Must be cleared this season. Further particulars and view, apply to
C. HOSKINS, Standstead Park Gardens, Emsworth, Hants.

ORCHIDS! ORCHIDS! and MARÉCHAL NIEL ROSES, Best Market Prices for good Blooms of above. WISE AND RIDES, Covent Garden, W.C.

MESSRS. GREGORY AND EVANS, NURSERYMEN, Sidcup, and 285, 286, 287, 288, Flower Market, Covent Garden, W.C., are open to RECEIVE CONSIGNMENTS of Choice CUT FLOWERS in any quantity for their Commission Department. Boxes and Labels supplied.
Telegraph Address—"COMMISSION, SIDCUP."

SQUELCH AND BARNHAM, North Row, Covent Garden, W.C., are OPEN TO DISPOSE OF any quantity of MUSCATS and BLACK GRAPES, TOMATOS, CUCUMBERS, FRENCH BEANS, STRAWBERRIES, CHOICE FLOWERS, &c. Highest Market Prices obtained. Account Sales daily; Cheques weekly or as preferred by Sender. Baskets and Labels supplied. References given.

WANTED, large EUCHARIS PLANTS.
Liberal EXCHANGE IN PLANTS.
JOHN STANDISH, Royal Nurseries, Ascot.

WANTED, a quantity of PLANTS, suitable for Carpet Bedding, best sorts.—State quantity to offer, and prices, to W. SHAND, Nurseryman and Seedsman, Lancaster.

FINEST LILY OF THE VALLEY CROWNS for Early Forcing, by Gustav A. Schultz, Berlin. For price write to
JACOB AND VALENTIN, 56, Cheapside, London, E.C.

New Zonal Pelargonium,
QUEEN OF WHITES IMPROVED.—It is without doubt the best White Zonal ever offered. It has been in flower all the winter at our Nurseries, and will be ready to send out May 1. £1 per dozen, strong plants. Certificate Royal Botanic Society, May 19, 1886.
PHILIP LADDS, The Nurseries, Bexley Heath, and Swanley.

G. HUMPHRIES' New Fancy DAHLIAS for 1887 are now ready for delivery; they are of first-class quality, and quite distinct from anything yet sent out. Awarded First-class Certificate Royal Horticultural Society. Descriptive CATALOGUE of Dahlias on application. The Trade supplied on liberal tefms.
The Nursery, Kington Langley, Chippenham.

CHEAP PICEA NORDMANNIANA, 1½ to 2 feet, 10*s.* per dozen; 2 to 2½ feet, 15*s.* per dozen; 2½ to 3 feet, 24*s.* per dozen; 3 to 3½ feet, 30*s.* per dozen. All EVERGREENS and FRUIT TREES cheap; CURRANTS and GOOSEBERRIES from 7*s.* 6*d.* per 100. 25 per cent. discount allowed for cash to clear. For LIST apply
T. L. MAYOS, Highfield Nurseries, Hereford.

HARDY RHODODENDRONS and AZALEAS.—The most extensive stock in the Kingdom of the finest hardy varieties known.
☞ The Rhododendrons in Rotten Row and the Botanic Gardens, Regent's Park, are supplied by
ANTHONY WATERER, Knap Hill Nursery, Woking, Surrey.

FOR SALE, eight very fine Specimen CROTONS, best varieties; also one LATANIA BORBONICA, 7 feet from top of tub: all in good healthy condition. Price on application to
S. BIDE, Alma Nursery, Farnham, Surrey.

Now is the Time to Plant Primroses.
COMMON PRIMROSES, large Roots for dividing, 4*s.* per 100, 30*s.* per 1000, for cash only.
PALMS, four large plants, and one ARAUCARIA EXCELSA, to be sold cheap. Particulars of
EDWIN HILLIER, Nurseries, Winchester.

FOR SALE, CHEAP, 18 large pots EUCHARIS, prepared for blooming. GERANIUMS, Henri Jacoby, 10*s.* per 100; Waltham Abbey Seedling, 10*s.* per 100. Choice Border CARNATIONS, 15*s.* per 100: all strong plants.
W. JACKSON, Blakedown, Kidderminster.

GRAPES THIS YEAR.—Extra strong Canes. Special prices and names on application.
JAMES DICKSON & SONS, "Newton" Nurseries, Chester.

Mangel Wurzel and Turnip Seeds.
H. AND F. SHARPE are now prepared to make special offers of home-grown MANGEL WURZEL and TURNIP SEEDS, raised in 1886 from specially selected Bulbs. The quality is excellent and the prices are very low.
Seed Growing Establishment, Wisbech.

FOR SALE, good strong CAULIFLOWER PLANTS, 1*s.* 6*d.* per 100; 10*s.* per 1000; package free for cash with order.
S. BIDE, Alma Nursery, Farnham, Surrey.

To the Seed Trade.
MALDEN AND SON have a few hundredweight of their Prize Greentop KOHL RABI SEED to dispose of. It grows medium top, with first-class large bulbs, and is, both for quality and quantity, the best known variety in cultivation. For price, apply to
MALDEN AND SON, Market Square, Biggleswade, Beds.

HORTICULTURAL CO., Midhurst, Sussex, conducted by W. SHORT. Circular LIST of 36 various kinds of Selected Natural Materials on Sale, gratis and post-free.

FIELD AND HEARSON'S NICOTYL VAPORISER. For the Destruction of Aphis, &c., WITHOUT SMOKE. CATALOGUE post-free.
BENJAMIN FIELD, F.R.B.S., 75A, Queen Victoria Street, E.C.; Depôt, Swan Place, Old Kent Road, S.E.

SALES BY AUCTION.

Wednesday next.—(Sale No. 7417.)
ÆRIDES SCHRODERII, grand specimen.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, May 18, a splendid specimen plant of AËRIDES SCHRODERII with over fifty leaves and four spikes with 133 buds, in grand health.

On view morning of Sale, and Catalogues had.

Wednesday Next.—(Sale No. 7317.
SPECIAL SALE of ORCHIDS in FLOWER.

MR. J. C. STEVENS will SELL by AUCTION. at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, May 18. at half-past 12 o'clock precisely, a fine COLLECTION of ORCHIDS in Flower and Bud, comprising many grand forms of Odontoglossum crispum, O. Pescatorei, O. Wilckeanum, O. vexillarium, O. Andersonianum, O. polyxanthum, O. nævium majus, Masdevallia Harryana sanguinea, violacea, and cœrulescens; M. Chelsoni, M. Veitchii, M. rosea, M. conchiflora, M. Lindeni superba, Cœlogyne cristata alba, Aërides Leonii, with 23 growths and 25 spikes; A. affine, with 8 spikes; Cattleya Trianæ Schroderæ, C. Mendelii, C. Mossiæ. C. Skinneri, C. Warneri, Lælia purpurata Williamsii, Schomburgkia tibicina, Dendrobes, Oncidiums, &c.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7418.)

IMPORTED ORCHIDS.—Received Direct.—A splendid lot of Vanda Cathcartii, Dendrobium formosum, D. nobile, and other Indian Orchids; consignments of Cattleyas, Lælias, Oncidiums, and Sophronites, from the Brazils; a great variety of BULBS and ROOTS from the Cape, VASES and PEDESTALS, TAZZAS, WINDOW-BOXES, and other TERRA-COTTA WORK, &c.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, May 19.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7418.)
VALUABLE ESTABLISHED ORCHIDS.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W. C., on THURSDAY NEXT, May 19, about 200 Lots of choice ESTABLISHED ORCHIDS, comprising fine species and varieties, many in Flower and bud.

On view morning of Sale, and Catalogues had.

Monday Next, May 16.
ESTABLISHED ORCHIDS, many in Flower.
Important to Gentlemen about forming collections.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on MONDAY NEXT, May 16, at half-past 12 o'Clock precisely,

A splendid lot of choice ESTABLISHED ORCHIDS, including many rare and desirable species, all well rooted and in fine health, many of which will soon flower. Amongst others will be found the following:—

Lælia anceps Schroderiana	Epidendrum Wallisii	Vanda undulata
Cypripediumgrande	Odontoglossum polyxanthum	Dendrobium Brymerianum
,, callosum	,, Krameri	Aci neta erythroxantha
Masdevallia hieroglyphica	Utricularia Humboldtii	Cœlogyne Lemoniana
,, acrochordonia		

several large Cattleya Mendelii in bud, Oncidium stelligerum, strong flowering plants; Odontoglossum citrosmums, fine specimens in bud, &c.; a fine importation of Cattleya gigas, with large broad leaves, and eyes at perfect rest, the whole being compact and of good shape, together with various Burmese and other Dendrobes.

The Sale will also include a very fine importation of Cattleya Mendelii from Mr. G. T. White, specially collected for him in a locality producing the very best types.

On view morning of Sale, and Catalogues had.

Monday Next.
CATTLEYA MENDELII.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. G. T. White to include in their SALE of ORCHIDS, on MONDAY NEXT, May 16, a very fine importation of Cattleya Mendelii. Mr. White desires to call particular attention to the Plants, as having been specially collected for him in a locality producing the very best types. From his previous collections many fine varieties have bloomed, and been Certificated. The plants now offered are in the best possible condition, and the lots will consist principally of selected specimens.

On view morning of Sale, and Catalogues had.

Tuesday Next.

IMPORTANT SALE of ESTABLISHED ORCHIDS, from the well known Collection of C. Dorman, Esq., The Firs, Laurie Park, Sydenham.

The whole of the Lots will be sold without the least reserve, excepting a few special plants, and these will be offered at the very low upset prices to be named at the time of the Sale.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from C. Dorman, Esq., to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY NEXT, May 17, at half-past 12 o'Clock precisely, 300 lots of ESTABLISHED ORCHIDS, from his well known Collection, including the following:—

Cypripedium vexillarium	Epidendrum Wallisii
Lælia anceps Dawsonii	Vanda Sanderiana
Maxillaria Sanderiana, fine plant in bloom	Oncidium lamelligerum
Dendrobium nobile nobilius	Cypripedium insigne Wallacei
,, ,, Cooksonii	Lælia Perrinii nivea
Odontoglossum crispum aureum magnificum	Cattleya Wagneri
Cattleya exoniensis	,, Mossiæ
,, culummata	,, Reineckiana
	,, Skinneri alba

On view morning of Sale, and Catalogues had.

Wednesday Next.

GREENHOUSE and BEDDING PLANTS in variety; CARNATIONS, PINKS, HOLLYHOCKS, GLADIOLUS, beautiful IRIS, from Japan; TUBEROSES, BEGONIAS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Auction Rooms, 67 and 68, Cheapside, E.C., on WEDNESDAY NEXT, May 18, at Half-past 12 o'Clock precisely.

On view morning of Sale, and Catalogues had.

Wednesday Next.—Arle Court, Cheltenham.

A Collection of STOVE and GREENHOUSE PLANTS, including very fine specimens of Kentia Forsteriana, 6 feet by 8 feet; Latania borbonica, 12 feet by 20 feet; Crotons in variety, 16 splendid pans of Eucharis amazonica, a few Orchids, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, on the Premises, Arle Court, near Cheltenham, about 2½ miles from Cheltenham Railway Station, Midland Railway, on WEDNESDAY NEXT, May 18, at 1 o'Clock precisely, by order of T. P. Walter Butt, Esq.

May be viewed the morning of Sale. Admission by Catalogue only (price 1*s*., returnable to Purchasers), obtainable on the Premises; and of the Auctioneers, 67 and 68, Cheapside, E.C., and Leytonstone.

Balham, S.W.
GREENHOUSE PLANTS, ORCHIDS, &c.

MESSRS. PROTHEROE AND MORRIS are instructed by E. R. Kesterton, Esq., who is leaving the neighbourhood, to SELL by AUCTION, on the Premises, Dudley House, Nightingale Lane, Balham, on THURSDAY, May 19, at 1 o'Clock precisely, without reserve, fine specimen FERNS, PALMS in variety, AZALEAS, a few choice ESTABLISHED ORCHIDS, including Cypripediums of sorts, 2 Vanda tricolor, with 40 and 22 leaves respectively; BEDDING PLANTS, GARDEN TOOLS and UTENSILS, HAND-LIGHTS, FRAMES, GARDEN ROLLER, LAWN MOWER, APOLLO TRICYCLE, and other EFFECTS.

May be viewed the day prior to Sale. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C., and Leytonstone, E.

Friday Next.
ODONTOGLOSSUM HARRYANUM,

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from Mr. F. Sander to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, May 20, at half-past 12 o'Clock, precisely—

A superb importation of this magnificent new ORCHID, one of the finest Mr. Sander has ever been privileged to offer.

The greatest care having been bestowed upon the plants, both in packing and quick despatch, they have arrived in such grand order that when potted they will be nearly equal to established plants. The gigantic and numerous flower-spikes on the plants indicate that this species is extremely floriferous, apart from the wondrous beauty and indescribably rich and novel colouring of its large blossoms. It is evidently a free grower, having handsome ample arching foliage, with extremely diverse pseudobulbs, from which abundant variations and quite new forms may be expected. The brilliant and beautiful colouring of this novelty is unrivalled, and it must be considered one of the grandest introductions of the century, taking rank with the noble Vanda Sanderiana, being quite as sensational, and in many points unique.

"*Collector informs us that every plant he could find has been sent.*"

It is fully described by Professor REICHENBACH in the *Gardeners' Chronicle*, October 14, 1886, p. 486, where he says:—"This is a grand and most unexpected surprise. The dimensions of the bulbs and flowers are those of a good Odontoglossum luteo-purpureum. Sepals rather broad, brownish with hieroglyphical transverse greenish-yellow lines, which later on become intensely yellow. The petals projecting straight forward with yellow recurved points, which is quite characteristic. They are brown in the middle and have numerous mauve blotches and spots at the base on a white ground. The lip is rather similar in colour, white when newly expanded, afterwards turning to yellow, and marked with numerous mauve lines." A coloured drawing will be on view on day of Sale.

At the same time will be offered—

CŒLOGYNE SANDERIANA,

Possibly the finest species of this magnificent genus. As many as twenty blossoms are produced on a spike, each individual flower being larger than the well-known Cœlogyne cristata, and of snowy whiteness, as in C. cristata alba. The plants are in grand order, and this is the best time of year for establishing them. Never before have such masses been offered, and they are full of dormant eyes.

The Sale will also include—

CŒLOGYNE FORSTERMANII.

This novelty is one of our most recent and beautiful introductions, producing twenty to thirty flowers on a spike, of the purest white, except the lip, which is yellow, striped with brown, forming a charming contrast. The flower-spikes are 1½ to 2 feet long, and plants received are all in the best order, amongst them being an enormous mass, the whole of which are in splendid health, very compact, and in extra fine condition for establishing.

For other Orchids of value, see Catalogue.

On view morning of Sale, and Catalogues had.

Leytonstone.

Annual Sale of 15,000 BEDDING PLANTS, exceedingly well grown; 5000 GERANIUMS, of the best named sorts; thousands of LOBELIAS, CALCEOLARIAS, &c.; choice AZALEA INDICA, PELARGONIUMS, RHODODENDRONS, COLEUS, ROSES in pots, and a variety of other GREENHOUSE PLANTS.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, on the Premises, The American Nurseries, High Road, Leytonstone, near the Station, on SATURDAY NEXT, May 21, at 1 o'Clock.

On view the day prior and morning of Sale. Catalogues had of the Auctioneers, 67 and 68, Cheapside, E.C., and Leytonstone.

Monday, May 23.
FLOWERING ORCHIDS.—SPECIAL SALE.

MESSRS. PROTHEROE AND MORRIS respectfully draw attention to the above. In consequence of Bank Holiday again interfering with their usual day on which this special monthly SALE is held, Messrs. P. & M. have been compelled to fix it for MONDAY, May 23, and give this early intimation that Gentlemen contemplating including Orchids, may make their arrangements accordingly.

67 and 68, Cheapside, London, E.C.

Important Sale of the Woodlawn Collection of

Valuable PLANTS, comprising several thousands of choice Orchids, Nepenthes, Sarracenias, Eucharis, Lapagerias, Ericas, Azaleas, and a general assortment of grand Stove and Greenhouse productions, which include some of the most rare and finest specimens in the country.

MESSRS. ARTINGSTALL AND HIND beg to announce that they are favoured with instructions from Joseph Broome, Esq., who is leaving Woodlawn, situate at Didsbury, near Manchester, to SELL by AUCTION, at 12 o'Clock noon, on TUESDAY, WEDNESDAY, and THURSDAY, June 21, 22, and 23, in the grounds of the above-named residence, the whole of the exceptionally fine COLLECTION of PLANTS.

Catalogues, which are in course of preparation, will be issued fourteen days prior to Sale, when they may be obtained, together with further particulars, on application (personally, or by post) to Mr. ALFRED COLE, Head Gardener; or from the Auctioneers, 45, Princess Street, Manchester.

TO Florists, Market Growers, &c,

TO BE LET or SOLD, the Lease of compact established NURSERY, comfortable Dwelling-house, Ten Large Glasshouses, Pits, &c., all heated; 7 miles from Covent Garden. Good position and neighbourhood. Low price to immediate Tenant.

RICHARD BIGGS, The Nurseries, Lewisham, S.E.

To Florists.

TO BE LET, for the Culture and Exhibition of Flowers and Plants under Glass, an extensive area of LAND adjoining Kennington Park, in front of South Place and Newington Terrace.

Apply to Messrs. MAYNELL AND PEMBERTON, Solicitors, 20, Whitehall Place, S.W.; or, to Messrs. BRIANT AND SONS, Estate Agents, 200, Kennington Park Road, S.E.

TO LET, Oxford Street, W. (north side), midway between Circus and Marble Arch, Part of SHOP and Corner WINDOW; well suited for Buttonholes and Cut Flowers.

For particulars, apply on the Premises, 376, Oxford Street, W.

To Dahlia Exhibitors.

TO BE DISPOSED OF, two MAHOGANY SHOW CASES, shut-up Sliding Lids. 20*s*. or EXCHANGE for good DAHLIAS.

J., 4, White House Nursery, Park Lane, Tottenham.

Landscape Gardening.

H. F. MALLER (of the firm of B. Maller & Sons), late Pupil of the Crystal Palace School of Landscape Gardening, is prepared to FURNISH PLANS, or undertake any kind of the above work.—61, High Street, Lewisham.

WANTED,
LARGE PALMS, TREE FERNS,
AND OTHER
ORNAMENTAL FOLIAGED PLANTS.

THE LIVERPOOL HORTICULTURAL CO.
(JOHN COWAN), Limited,

Are at present prepared to give ORCHIDS, or OTHER PLANTS, IN EXCHANGE for large overgrown PALMS, TREE FERNS, and other Plants of a similar class. Those who wish to take advantage of this offer should send full particulars **AT ONCE**, as,

AFTER THE NEXT FEW DAYS,

the Company will have no use for such plants, the present use for them being quite an exceptional one.

The Company have just received large and fine importations of EAST INDIAN and MEXICAN ORCHIDS, all in grand condition, and including magnificent masses and many rare and fine varieties.

CIRCULAR with full particulars on application to

THE VINEYARD & NURSERIES,
GARSTON, near LIVERPOOL.

SPECIAL OFFER OF

TREE PÆONIES.

First-class Certificate Royal Horticultural Society, 9th June, 1885.

These must not be confounded with the Chinese and French varieties offered by Nurserymen. I have 50 varieties in all, and the greater number unflowered novelties.

	Each—s.	d.
Purity, certificated, white	21	0
Snowball, certificated, pure white and very large, when first in flower resembles a ball of snow	21	0
Flag of Truce, very large flower, slightly stained with violet near the centre, a most massive and lovely variety	10	6
Princess Alexandra, very large flower, purple and white	10	6
The Red Prince, bright red, and very beautiful	7	6
Princess Beatrice, lovely white and rose, fine form	7	6
Duchess of Albany, rose, striped red, very elegant	7	6
Truth, good lovely pure white	10	6
Lilaceum, certificated, white, lilac centre	21	0
Lord Beaconsfield, purple and white, good form, and distinct	7	6
Fiery Cross, red, striped white	7	6
Spring, very large flower, lilac and white	10	6
Prince Albert, good flower, red, striped white	7	6
White Venus, white, good variety	7	6
Eve, very large flower, white and purple	10	6
Prince of Wales, red, striped white	7	6
Rifleman, very dark red	7	6

Collection of unflowered plants which are sure to contain, like the above, some startling flowers, 5*s.*, 7*s.* 6*d.* each, according to size of plant.

THE ABOVE ARE ALL GUARANTEED GOOD FLOWERING PLANTS, CERTAIN TO BLOOM WELL.

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SPECIAL NOTICE.

GRAND JUBILEE EXHIBITION OF ORCHIDS,

STOVE and GREENHOUSE FLOWERING and FOLIAGE PLANTS.

Open to the Public from MAY 11 *to JUNE* 25, *from* 9 A.M. *to* 6 P.M. *daily.*

Admission FREE to those who have received Invitations, or upon Presentation of Card.

A LARGE SHOW-HOUSE, 100 feet long by 22 feet wide, is especially devoted to the ORCHID EXHIBITION, and visitors may rely upon seeing these beautiful Plants with the greatest degree of comfort; the ventilation, means of ingress and egress, as well as the great width of the paths being all that can be desired.

The LARGE WINTER GARDEN, 100 feet by 40 feet, and the other SHOW-HOUSES are gay with our large collections of STOVE and GREENHOUSE FLOWERING and FOLIAGE PLANTS, which have figured at the LEADING SHOWS, both at home and abroad, for many years with uninterrupted success.

☞ *This Exhibition was admitted to be, by all who saw it during the last two years, the largest and most varied of the kind in London.*

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THE NEW LATE WHITE GRAPE,

"WHITE" GROS COLMAR (Roberts).

We have the honour to announce that the distribution of this *really grand, late* "White" Grape has been entrusted to us by the raiser, Mr. Roberts, of Charleville, and will commence next summer at One Guinea each; a few extra strong Canes at Two Guineas. The entire Stock is in our hands; but, as the supply will necessarily be limited, Early Orders are solicited, and will be booked for delivery in rotation.

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"NEWTON" NURSERIES, CHESTER.

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Baron FERDINAND DE ROTHSCHILD, M.P.	52	10
Lord REVELSTOKE	26	5
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GEORGE ANDERSON, Esq., Sydney	5	5
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Mr. A. C. BISHOP, Alresford	0	10
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to the Trade.

15,000 KENTIA BALMOREANA and FORSTERIANA, 45*s.* to 80*s.* per 100.
3,000 COCOS WEDDELLIANA, 45*s.* per 100.
4,000 EUTERPE EDULIS, 32*s.* per 100.
1,000 PHŒNIX RUPICOLA, in 48's, at £7 10*s.* per 100.
1,500 PHŒNIX RUPICOLA, thumbs, 60*s.* per 100.
ADIANTUM FARLEYENSE, at 40*s.* per 100.
ASPARAGUS PLUMOSUS NANUS, strong, at 72*s.* per dozen.
ASPARAGUS PLUMOSUS NANUS, in 60's, at £6 per 100.

A fine stock of DRACÆNA LINDENI, a few grand exhibition plants; also DRACÆNA LINEATA (true), plants from 4 to 7 feet, well feathered and perfect specimens. Also a few strong LAPAGERIA ALBA.

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Good strong plants.
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FUCHSIAS in twelve good named sorts, 8*s.* per 100.
PELARGONIUMS, Show and Decorative, from single pots, good, 20*s.* per 100, 3*s.* per dozen.

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BEAUTIFUL

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In Spring we have numerous applications for these, but hitherto have been unable to attend to such; now, however, since the naming and arranging of our extensive Collection of Daffodils has been completed, we are prepared to send, on application, during April and May, Cut Specimens, correctly named, and carefully packed, at a charge of 3*s.* 6*d.* per dozen flowers not less than one dozen). We estimate that this charge will cover all expense of postage, boxes, and labour, as we desire no profit in sending these flowers to the public, but are only desirous that these floral beauties should be more widely known. The flowers cannot be sent in bud, as this would prevent us proving our "Stocks," which is done annually; but they will be fresh, and packed so as to ensure their arriving in good condition.

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ABUTILONS, the finest, 3*s.* per dozen.
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ODONTOGLOSSUM HARRYANUM.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from Mr. F. SANDER to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, May 20, at half-past 12 o'Clock precisely,

A SUPERB IMPORTATION OF THIS MAGNIFICENT NEW ORCHID,

One of the finest Mr. Sander has ever been privileged to offer.

The greatest care having been bestowed upon the plants, both in packing and quick despatch, they have arrived in such grand order that when potted they will be nearly equal to established plants. The gigantic and numerous flower-spikes on the plants indicate that this species is extremely floriferous, apart from the wondrous beauty and indescribably rich and novel colouring of its large blossoms. It is evidently a free grower, having handsome ample arching foliage, with extremely diverse pseudo-bulbs, from which abundant variations and quite new forms may be expected. The brilliant and beautiful colouring of this novelty is unrivalled, and it must be considered one of the grandest introductions of the century, taking rank with the noble Vanda Sanderiana, being quite as sensational, and in many points unique.

COLLECTOR INFORMS US THAT EVERY PLANT HE COULD FIND HAS BEEN SENT.

It is fully described by Professor REICHENBACH, in the *Gardeners' Chronicle*, October 14, 1886, p. 486, where he says :—"This is a grand and most unexpected surprise. The dimensions of the bulbs and flowers are those of a good Odontoglossum luteo-purpureum. Sepals rather broad, brownish with hieroglyphical transverse greenish-yellow lines, which later on become intensely yellow. The petals projecting straight forward with yellow recurved points, which is quite characteristic. They are brown in the middle and have numerous mauve blotches and spots at the base on a white ground. The lip is rather similar in colour, white when newly expanded, afterwards turning to yellow, and marked with numerous mauve lines." A coloured drawing will be on view on day of Sale.

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CŒLOGYNE SANDERIANA.

Possibly the finest species of this magnificent genus. As many as twenty blossoms are produced on a spike, each individual flower being larger than the well-known Cœlogyne cristata, and of snowy whiteness, as in C. cristata alba. The plants are in grand order, and this is the best time of year for establishing them. Never before have such masses been offered, and they are full of dormant eyes.

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CŒLOGYNE FORSTERMANII.

This novelty is one of our most recent and beautiful introductions, producing twenty to thirty flowers on a spike of the purest white, except the lip, which is yellow striped with brown, forming a charming contrast. The flower-spikes are 1½ to 2 feet long, and plants received are all in the best order, amongst them being an enormous mass, the whole of which are in splendid health, very compact, and in extra fine condition for establishing.

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Rivers' Royal Ashleaf	Dalmahoy
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And other leading varieties. Prices upon application.
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GERANIUMS, Zonal, strong autumn-struck plants, from single pots—Vesuvius (scarlet), Jean Sisley, Dazzler (crimson), Master Christine, Madame Vaucher, Happy Thought, 2s. per dozen, 12s. per 100; Miss Tottie Hardy (rosy-salmon), Queen of Pinks (magenta), Stour Valley Beauty (peach), 3s. per dozen.

PELARGONIUMS, show and decorative, named, fine plants, from single pots, 3s. per dozen.

LOBELIA (true), from cuttings, Emperor William, 2s. 6d. per 100, 20s per 1000.

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FOR VINES, PLANTS IN POTS, VEGETABLES, &c.

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Prices: In tins, 3d., 1s., and 2s. 6d.; in bags, containing 28 lb., 7s. 6d.; ditto, 1 cwt., 25s. Sample tin, 6d., post-free.

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For use in Conservatories and on Plants in rooms. No disagreeable smell. A perfect plant food. In tins, 3d., 9d., and 2s.; in bags, containing 28 lb., 7s. Sample tin, post-free, 6d.

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Imparts permanent improvement to LAWNS, CRICKET GROUNDS, &c. 28 lb., 5s.; 56 lb., 8s. 6d.; 1 cwt,, 15s.

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For destroying insects and parasites on Plants and Trees, such as mealy-bug, scale, thrips, red spider, American blight, &c. In tins, 1s. 3d. and 2s. 6d; per gallon, 9s. Small tins make upwards of 14 gallons of wash.

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An unfailing remedy for mould and mildew on Roses, Vines, &c. In tins, 1s. and 2s.

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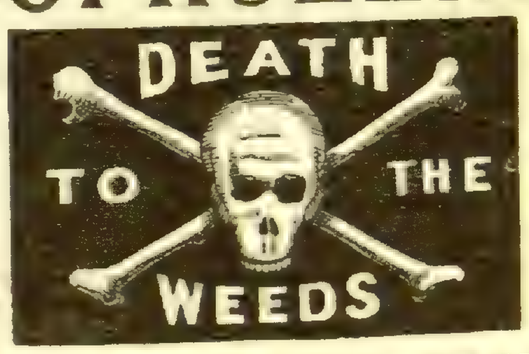

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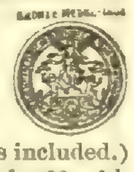

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CHUBB'S "PERFECT" FERTILISER, the Best Food for all kinds of Plants, Flowers, Fruits, Vegetables, &c. ...	1/6	3/-	5/-	8/-	14/-	22/-
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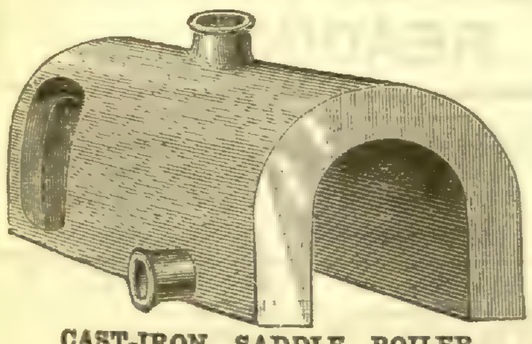

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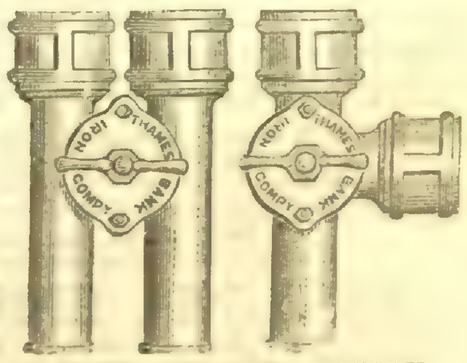

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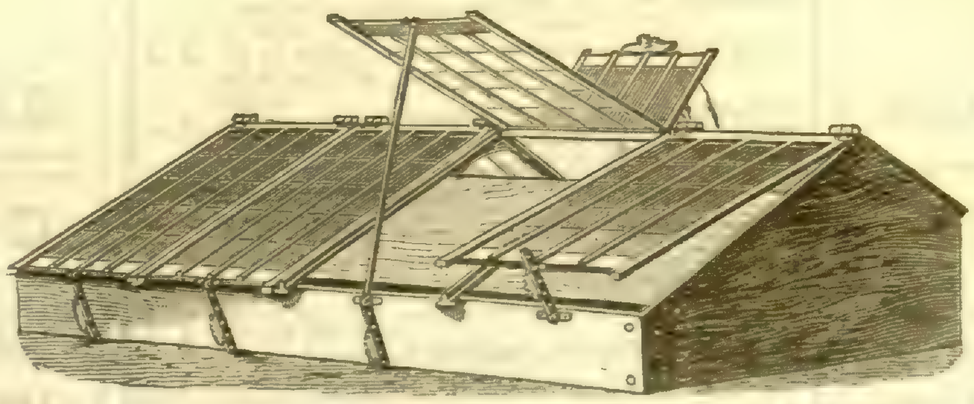

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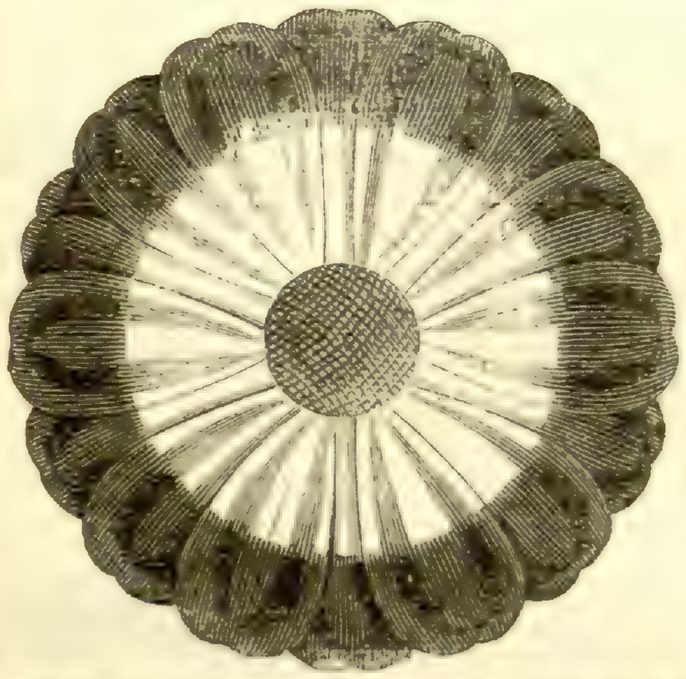

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CORYPHA AUSTRALIS,
in Lady Wilton's Garden, at Monte Carlo.

THE

Gardeners' Chronicle.

SATURDAY, MAY 14, 1887.

THE PRIMÆVAL FORESTS OF BRITISH GUIANA.

(Concluded from p. 575.)

NEXT morning my first business was to lay into the drying papers the specimens from my vasculum that I had gathered on the mountain. Besides the plants before mentioned I had obtained seeds of some shrubs that were growing on the top, and of a reddish prickly-fruited Bactris of slender stem, 3 or 4 feet high, that I had not seen before. These small Palms—pimplers, as the people call them, from their prickliness—are in great variety in the country and plentiful in the forest, but some of the species are difficult to distinguish unless they are in fruit. The operations of laying in the plants to dry, and tying up and packing those to be preserved alive to cultivate at the Gardens, kept us there till 8 o'clock. The heavy mist was just lifting, and we had another glimpse of the face of the great rock, again hanging in the clouds as first seen the day before, and then we started and began to file down the hill on our return journey.

Nothing but what I have described is known of the mountain range of which Mount Ray-wa is the strangely abrupt termination. Far to the right, as I have before noted, one sees a succession of three round dome-shaped mountains, and to the left another truncated rock like Mount Ray-wa; so that the range or ranges there must be very extensive. Its principal rock—that which forms the backbone of the range, is gneiss, speaking from memory, but the great interest in the gold deposits of the country* has developed since my visit, and from want of thought I bestowed no interest on its geology or mineralogy.

Now that we were on the way home I was at liberty to gather what plants or seeds I could find worthy of cultivation, and this caused some delay in our progress, but the men bearing the general *impedimenta* had pushed on before to the settlement. We reached there just before noon. As

* Unfortunately for our forests there is a very decided gold fever in Guiana as I write, and, barring the golden city, the Spanish invaders' and Sir Walter Raleigh's description of the country seems likely to be realised at last. Fifty pounds of gold a month is coming down from the diggings, and the quantity is fast increasing with the influx of diggers.

we entered a shower began to fall, and for the next few days we were hampered in our work and progress by rain. All my specimens required changing into dry paper, but showers kept falling, and I despaired of getting any drying done that day. However, at intervals during the afternoon it was accomplished, and I was free soon after 4 o'clock to give my attention to other matters.

The most pressing requirement was to have a bath, for we were unpleasantly conscious of the ticks we had acquired on the journey. Walking day after day through the bush we had become covered with these tiny parasitical bush ticks, which had fastened themselves on our bodies—so plentifully on some of us that one could hardly put one's finger in any part from head to foot between the inflamed bumps the bites had raised. We used the Indian remedies—a good wash and a subsequent thorough anointing with oil made from the fruit of the "Crab tree," Carapa guianensis; but several days elapsed before the itching and inflammation subsided. This oil has a somewhat offensive but evanescent smell, and is so thick that it effectually smothers the ticks, and at the same time allays the irritation. I have called it an Indian remedy, but the fact is that they more usually employ it as a preventive, by oiling their naked bodies before they go into the forest hunting, or on any other errand. All bush animals seem to be the prey of ticks. Even cold-blooded toads and snakes are almost invariably found infested, and the heads of the birds we shot were scarlet under the feathers with the microscopical red lice, called by colonists *bêtes rouges*.

At this settlement I got plants of the great grass, Arundo, from the flowering stems of which the Indians make their arrows, and seeds of a Gourd called Moroloko (Lagenaria vulgaris), the fruit of which, when the contents are cleaned out, form a most useful, and, if not roughly knocked about, durable bottle, holding from one to two gallons. Its body is a compressed sphere, from the centre of which rises a curved, or sometimes straight neck, where it was united to the stem, which forms the handle. Possibly it is the model from which the Carib potters first formed the water goblets they now make, which are exactly of the same shape. In the evening I sent one of the men to see if he could procure any game. He returned with two maam and a pair of warracabras, or trumpet birds. The latter go in flocks, often of a score or more birds together.

All night it rained. Our little house, which was not a permanent one, but only intended to shelter its owners on casual visits, and, therefore only thinly thatched, leaked a good deal into our hammocks, and from the ground outside the water ran in and wetted all the floor. The rain continued in the morning, and there seemed no prospect of our getting away that day. I turned over my collection of seeds and labelled them, and, by using my waterproof, went into the forest and got a few more, and a few plants as well. The head man of the place showed me a large lump of a felt-like substance he had taken from the stomach of a peccary that he had shot. On that occasion, he and another man slew over a dozen of these wild hogs together. It seemed to be an abnormal accumulation of the hair of some creature which the omnivorous animal had devoured.

About noon the rain stopped, and we hastily packed up, bade farewell to the Indians of the settlement, and started. The trees were still dripping, and the bush along the narrow path reached up to our waists, and soon saturated our lower garments. Here we were again in the deceptive Fern paradise I have before described.

In the course of our journey this day the roar of a fast travelling devastating storm was audible. Before we could speak or do more than exchange glances it had reached us in its full fury. Decayed trees crashed down on every hand, alarming every one by the danger, and by the awful noise occasioned by their crashing. The rain poured in torrents and the lightning flashed incessantly. We were afraid to proceed and afraid to stay. The centre and fury of the storm passed a little on one side of us, or it is probable we should not have escaped with the entire immunity which was happily our lot. The fearful uproar was short; the storm passed on in its fury, and we could hear it travelling onward in the distance from us as we had heard its approach. The forest was drenched, and we looked at each other with blank faces as we thought of the long walk

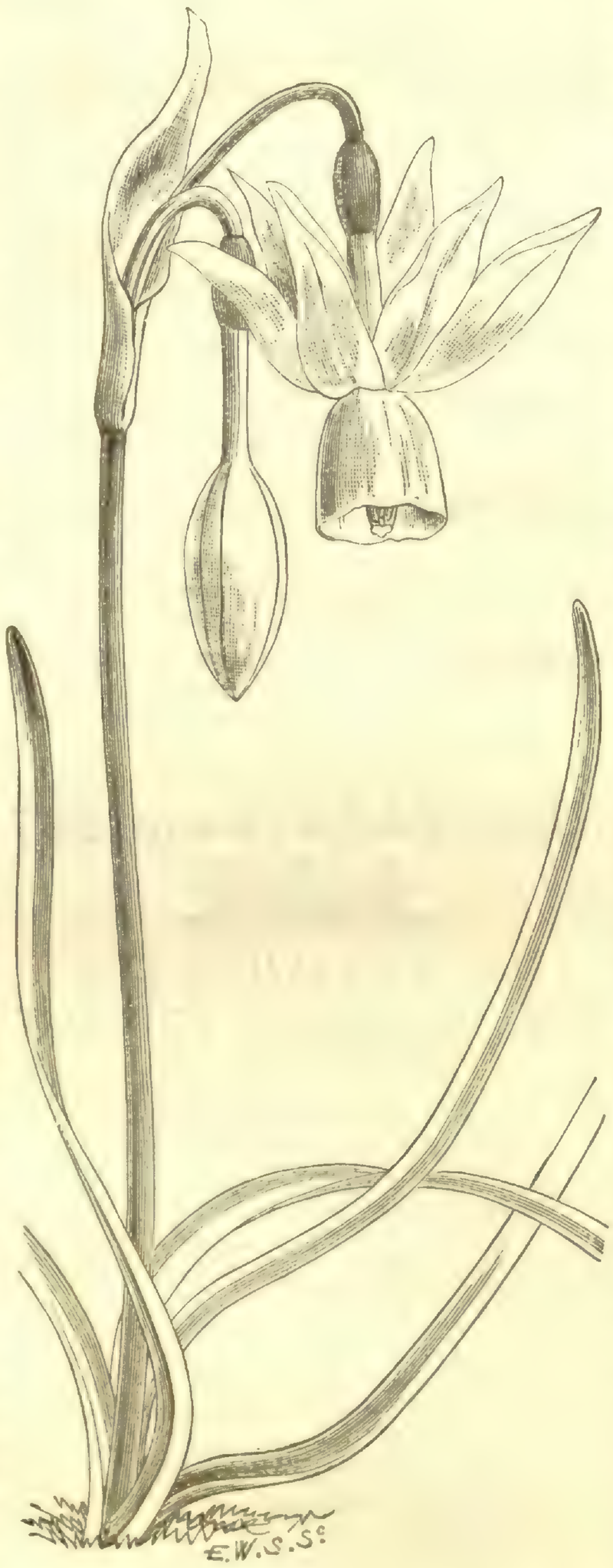

Fig. 119.—Narcissus triandrus, var. cernuus, from the "Botanical Magazine;" flowers pale yellow. (see p. 640.)

through it that was still before us, and the fear that we might not reach the next settlement before dark. Frequent pools now hid the path, and the stream beds that we had walked over dry on the way out were now running with turbid water, and had to be bridged for passage with lengths of wood. We had managed by sheltering under the lee of a big tree with umbrellas, cloaks, and coats to keep ourselves pretty well dry while the rain was descending, but now nothing could preserve us from the drenched undergrowth through which we had to walk.

Let me describe one of the commonest features presented to the traveller's eye. The foliage of the plants and the decaying leaves that cover the ground as we pass along are in places sprinkled with a meal-coloured powdery dust, dropped from above in little specks on the leaves. Looking aloft for the cause we observe a tree standing dead, its lifeless branches, bare of leaves, still spread as in life to heaven, but riddled through with countless weevils, the authors of the dust observed. As we stand there pieces of the branches fall, breaking away by their own weight. The first breeze will bring the lot down in a shower, or should none soon occur, they will fall, as the pieces just noticed fell, one by one. Then the trunk will stand for some time longer, till it is gradually brought to the ground by the termites (ants), those active abettors of arborescent decay, who, working in myriads, turn the most solid tree into a pulverised mass that crumbles at length by its own weight into a heap of dust. A few steps further on we see by the wayside such a heap, and we passed many, for the forest abounds with them, 10 or 15 feet high, a mass of brown *débris*, fine as dust, that might be shovelled away. Still, though it is in the last stages of decay, it shows in outline what were the deep buttresses of the once giant tree that in its day of strength was one of the glories of the forest, and which probably had its birth long before any European set foot in the land. Storms are rare, in fact, in Guiana; and all about these dead trees stand, having lived out their natural life, in various stages of decay, some crumbling rapidly under the agency of insect life, others more slowly by natural decay alone. Hardly an hour passes that one does not hear, near or distant, the spontaneous fall of such trees. There is life—abundant life—which in bright weather exercises the chief influence on the mind; but under a cloudy and dripping sky, or the downpour of a tropical rainfall it is not the life, now dull and clothed in sombre hues, but the apparently all-pervading decay, that arrests the imagination.

There is little that is bright and pleasing to the eye in the combination the under-forest affords. The roof of a forest is a garden of varied beauty, rich in colour, rich in form, displayed on a scale of hardly conceivable magnitude, diversified beyond our knowledge. The ground beneath is the nursery or manufactory where the garden is prepared, and like other nurseries and manufactories contains much that is not pleasant to behold. How untidy it generally—not to say always—is; how dark, dank, and miserable on such a day as this. What the roof of the forest (the garden) is like I formed an idea of, and have tried to describe in what I have said of the view from the top of Mount Ray-wa.

The sketch I have drawn is a characteristic feature of our deepest forests, but does not apply to all forests, even in these latitudes, and at this low elevation; certainly it does not in its more sombre or uninviting details apply to forests of high altitudes, where the trees are of short stature and the forest is full of light and dancing sunbeams, and every object and all surfaces from the ground to the highest branches are more or less clothed with moss or Fern; this dress shrouding and concealing all decay, and glistening with dewdrops in emerald sheen the greater part of the year.

We reached the settlement soon after five, the undergrowth wet all the way. We were glad to be in before dark, for these forest paths are difficult enough to travel with even the best of light. One is constantly tripping over roots or sticks headlong to the ground. Trees are, however, generally close enough to save one, though in grasping the nearest for the purpose it not unfrequently happens to be a pimpler, covered with thorn-like needles.

To one accustomed to walk little, and that little on the flat of Georgetown, the up and down hills of such a journey as this are more tiring than the distance traversed, as muscles that are, as a rule, little used, are brought into active play; and in the close forest, where the air rarely moves, it is much hotter on a dull day than in the breezy open. The uneven

ground adds to the labour, with frequent logs to step over, some of which are 2 or 3 feet thick, and formidable impediments when their frequency is regarded. The untravelled white man steps on every log he meets, but the Indian, better experienced, steps over them, thus saving the labour of lifting his body the height of each log. Perhaps the most trying ground of all we met in travelling was that made of rather dry half-decayed leaves, which, being many layers deep, springs to the tread, requiring much more exertion to every step than the more solid soil and wood. It would be worth the while of any future traveller to Mount Ray-wa to count the number of streams or stream beds crossed on the journey. I never saw so many on any other journey of the length. Most of them are spanned by logs that have fallen across them, over which one walks or creeps as best one can, often, if one is not very sure-footed, coming down with a ponderous jolt, or splash when water is running.

We made an early start next morning, and left at their home the guide and other Indians who had accompanied us to the mountain. I have spoken of the exertion, heat, and dirt experienced in getting through new Cassava fields. I am not sure that such excel in discomfort the old abandoned fields, one or two of which we to-day passed through; for the tangled growth of these, which one has often to half-creep under and through is made the more unpleasant, and not infrequently maddeningly painful, by the ants with which it swarms. A sense suddenly strikes one as if one's feet were on fire, and, looking down, one discovers they are covered with ants, red or black, as the case may be. These swarm in the decaying leaves that lie on the ground and hang in the entangled growth, and sting mercilessly. In passing by the place where it grew we picked up the plants of the tiny Palm I described in its place, and searched for an hour or more for others, but with little success. Two edible Solanums with yellow fruit—one globular and the other finger-shaped—I procured in the Cassava fields. We reached the Issororo, where we had left the boat, about mid-day. The upper unnavigable part of the river we had passed at different points two or three times on the journey. At the small Indian settlement last passed I stayed to dry my paper, but there was a Paiwari drink on, under the influence of which the people had become noisy and troublesome, so I hastened to the river. Owing to the heavy rain that had fallen in the interval the Issororo was much fuller of water than when we went up, and consequently the current ran down strongly, and where there were no impediments in the form of fallen trees to be cut or got over or under, we made rapid progress. The Pomeroon was reached in four hours from the start, and some hours later Maccaseema, Mr. Im Thurn's residence thereon, which he had kindly placed at my disposal. Here I spent a few days to finish drying my collections, sorting, labelling, and packing, preparatory to returning to town.

Looked at from the collector's point of view the journey was rather disappointing—no doubt largely due to the fact that it lay so much under high forest, in which flowering plants are uniformly rare. My principal object—viz, that of getting flowering specimens of the Touck-pong and other information regarding that tree, was fully obtained. There was one plant, too, that I missed. Mr. Im Thurn had previously presented me with the collection of dried specimens which he and Mr. Percival made on their journey. They travelled at a different season of the year, so that the two collections no doubt form a fairly accurate representation of the flora of the region; but among their plants was a remarkable new Polypodium—P. Percivalii—with a caudex 4 feet high, that I looked for vigilantly, as I desired to obtain further material of it, but without success. *G. S. Jenman, Government Botanist, British Guiana.*

Rose American Beauty.—Mr. F. Harnis, Eimsbüttel, Hamburgh, recognises in Madame Ferdinand Jamain, a Rose brought out by M. Ledechaux in 1875, the so-called American novelty, "American Beauty."

Plants New or Noteworthy.

FRITILLARIA ARMENA VAR. FUSCOLUTEA, *Baker.*

This plant was sent to me for determination from one of the recent meetings of the Scientific Committee of the Royal Horticultural Society. It is figured *Bot. Mag.*, t. 6365, as a variety of F. armena, and briefly noticed in the letterpress. It was found by Mr. Geo. Maw on the mountains round Smyrna, where he says it is plentiful. Smyrna is a long way from Armenia, but except in the colour of the flower there does not seem to be any character that may be regarded as of specific value to separate it.

Bulb as in F. Meleagris and its allies. Stem not more than 5—6 inches long. Leaves 4—6, green, ascending, all alternate, the lower ones lanceolate, about 2 inches long, the upper linear. Flower solitary, drooping, bright yellow inside, tinged with coppery-brown outside, campanulate, ⅝ inch long; segments oblong, obtuse, much imbricated, rather narrowed to the base, with an inconspicuous oblong green nectary at the base. Stamens rather shorter than the segments; filaments very pubescent, as long as the erect anther. Style clavate, ¼ inch long, obscurely 3-lobed at the tip. *J. G. Baker.*

Reliquiæ Mooreanæ.

Amongst the Ferns of the late much lamented Thomas Moore, which have been purchased for Kew, there is a small packet marked "new garden Ferns." These, no doubt, were intended to be published in the *Gardeners' Chronicle*, so before laying them away into their places I will go through them and report to you upon them.

1. *Alsophila atrovirens*, Presl, var. *Keriana*, Baker.—This was received from Messrs. R. P. Ker & Sons, of Liverpool, in February, 1884. There is no notice as to its native country, and Moore has merely marked upon the specimen its genus. I think it is a variety of the South Brazilian A. atrovirens, Presl, but the frond, though full of fructification, is only bipinnate and not more than half a foot broad. The following is a brief description:—Stipe, 6—8 inches long, scaleless, dull brown, muricated. Lamina oblong-lanceolate, bipinnate, 15—18 inches long, half a foot broad, firm and rather rigid in texture, green on both sides, pilose on the main veins beneath. Pinnæ lanceolate, the lower 3—4 inches long, ¾—1 inch broad, cut down to the rachis into oblong, crenate, obtuse pinnules: lowest pinnæ not dwarfed. Veins pinnate in the pinnules; veinlets 7—8-jugate, erecto-patent, deeply forked. Sori placed at the forking of the veins, midway between the midrib and edge of the pinnules. Receptacle densely pilose.

2. *Davallia* (*Stenoloma*) *ferruginea*, Desv.—Received from Messrs. Veitch in 1882. Gathered by Curtis in Madagascar. Marked by Moore "Davallia Melleri," which is Hooker's later name for the plant, A description will be found in our *Synopsis Filicum*, p. 102. It is a large sarmentose decompound species, with crowded small sessile, cuneate, final segments. It is one of the endemic forms of Central Madagascar, Our original specimens came from Dr. Lyall and Dr. Meller, and it has been sent home since by the Rev. R. Baron, Messrs. Pool, Kitching, and others.

3. *Asplenium* (*Darea*) *scandens*, J. Sm.—Received from Messrs. Veitch in 1885. Gathered in Sumatra by Curtis. Marked by Moore as new, with the name "Asplenium acinaciforme;" but I feel satisfied it is a conspecific with A. scandens, J. Sim., described *Synopsis Filicum*, p. 224. It is a beautiful small decompound species, with a wide scandent rhizome and sessile oblong-lanceolate decompound fronds a foot long, narrowed gradually from the middle to both base and apex. Of familiar types it is most like the well-known A. viviparum, Presl., but this has a long stipe and longer final segments, and here there is no disposition to produce those viviparous buds from which the Mauritian plant takes its name. *J. G. Baker.*

(*To be continued.*).

THE BULB MITE.

There is a good deal of similarity between animals and plants; they each have their diseases and their parasites. Amongst the rest is the so-called Eucharis or bulb mite. Some time ago I was asked by a horticulturist in the North to examine some bulbs with the microscope. He said that the greater part of his bulbs were purchased about eleven years ago, and that they continued in vigorous health for some three or four years. It seems that he then purchased an additional small stock. After this importation the whole of the plants gradually began to show signs of deterioration. It is now almost certain that the decay in these plants was caused by the bulb mite, though the owner was not aware of its existence at that time, in fact he bestowed much anxious care and attention in trying the usual methods of remedying the unhealthy condition of his plants. About a year ago his stock of about 4000 Eucharis bulbs were all planted out. Then began the worst possible state of affairs; the disease spread rapidly; about half the plants became denuded of leaves, and many even of bulbs and roots. In fact, this valuable lot of charming flowering plants was evidently being rapidly destroyed. It was at this juncture that he brought me some two or three specimens to examine. After considerable care I only found some organisms which appeared to me to be eggs. I requested that further samples should be brought me. In these the mites were easily found, both on the leaves and even on the flowers. They were pretty plentiful in the surface structure, and in some instances were detected in the centre of the bulb. I then ventured to suggest that he should subject the bulbs to various forms of treatment, such as would appear to him likely to destroy both mites and germs, and requested that duplicates should be kept of each of these doctored roots, so that they might be planted, and that the subsequent results might be verified. He duly forwarded to me specimens which had been treated by the following different processes:—No. 1 bulb was immersed in lime-water for twenty-four hours; No. 2 was put under a hand-glass filled with strong fumes of burning sulphur; No. 3 was immersed in a solution of carbolic acid and water for twenty-four hours; No. 4 was placed under a hand-glass, and exposed to fumes of sulphur: the latter was sprinkled on lime during the process of slacking; No. 5 was well soaked with burning Tobacco many times during the day; No. 6 was steeped for twenty-four hours in an insecticide called "Fir-tree oil;" No. 7 was well washed in clear water, then worked in the above "Fir-tree oil" for a few minutes, then washed over again in the same manner. No. 8 was treated by a solution of sulphide of potassium, as recommended by your correspondent Mr. E. Tonks. These investigations occupied much time and patience, and I received valuable assistance from the members of our Microscopical Society. It needs great care and not a little skill to conduct these delicate investigations satisfactorily. Every part of the bulb must be exhaustively examined. In almost all the doctored bulbs dead mites were found that had doubtless succumbed to the treatment. It is not sufficient to examine the roots cursorily. Conclusions drawn from a perfunctory scrutiny would be alike misleading and fallacious. A small party of us spent hours and hours with first-class microscopes and appliances, examining the tissues all through. Sometimes, after long and persistent hunting, a single living mite or organism was detected. We deemed this as conclusive. In fact, the exhaustive searching of these specimens thus treated had to be spread over some two or three weeks, for my professional engagements would not allow of my working night after night consecutively. But notwithstanding, as we gained experience and found out how to proceed in the minute investigation, it proved full of interest and instruction. Briefly put, the sum of our inquiries under the microscope was as follows:—No. 1 bulb

was found to contain, one dead and one live mite. No. 2 contained neither live nor dead mites. Query: Was this bulb diseased at all before being submitted to treatment? No. 3, contrary to what one might have expected, contained a plentiful stock of living specimens; No. 4 also was well stocked with samples lively enough. No. 5 contained one lying dead, and one alive, eating; No. 6, one or two dead and one busy feeding. No. 7 was a milder form of No. 6 way of treatment; as would be supposed, it had a good share of vigorous mites. No. 8 was rather anxiously scanned, hoping that the plan recommended by your sensible and attractively writing correspondent might prove more successful. The results recorded in this case were as remarkable as they were unexpected. The outer coats of the bulb, when examined with a pretty high power, under well arranged "top-light," by the aid of a large condenser, showed a most puzzling but nevertheless most brilliant and charming sight. The outer tissue was filled entirely with myriads and myriads of exceedingly minute organisms, like microscopic vinegar eels in appearance, only more metallic-looking. They had all the look of sparkling threads of silver. They were all in the most active motion, and although I have witnessed many attractive sights under the microscope, I have never at any time beheld anything more charming than the spectacle these polished silver-like organisms presented; the tissues undulated with all the glistening effect which a fine threaded silver cloth exhibits under the blaze of the electric lime-light. These strange organisms did not extend far into the meshes of the bulb. But a little further in we found any quantity of living mites! I am of opinion that the whole subject of these mites, and, indeed, of all plant parasites, should be very carefully studied. No slovenly or hurried observations are of any avail. If I can find time I hope to pursue the matter further. It is my opinion that the treatment hitherto adopted is unavailing. I have no wish to disparage my friend's intelligent efforts to cure his large and valuable stock of Eucharis bulbs; but it is evident that some other method more certain must be found out, and the sooner this is done the better it will be both for those who love flowers and for those who sell them. *C. S. Hall, M.R.C.S., President of the Carlisle Microscopical Society, 3, Crescent, Carlisle.* [The mite in question was described and figured by Mr. Michael at p. 440, April 4, 1885. Ed.].

PANSIES.

The proper time to sow the seed, according to Mr. Roemer, of Quedlinburg, a well-known raiser, is from the end of June to the end of August. The seed should be sown in broad shallow pots, pans, or boxes, and hese require shelter from hot sun and heavy rain. A spent hotbed with a frame over it is the best place for the raising of seedlings. Failing this, a spot in the open ground, partially in the shade, will be suitable. Use a rich sandy soil, and scatter the seed thinly, press it lightly into the soil, watering with a fine-rose pot, thereafter covering the seed with a very thin covering of finely sifted soil. Shade carefully from the sun until the seed has germinated, for should the soil on the surface become dry, the germination will be very poor, and may fail completely.

Until the young plants appear, which will be from eighteen to twenty days, the soil must be kept uniformly moist. From the beginning to the end of September the young plants will be large enough to handle, and must be pricked out at a distance of 4 inches apart on a well manured bed. Cow manure is found to be the best, the various salts found in other dungs favouring the early death or failure of the plants. When the Pansies are employed for carpet beds they may at once be placed in their positions in company with Bellis perennis, Silene, Myosotis, &c., and in this case they may be planted 4—5 inches apart.

It is only by planting in this way that a long-continued period of flowering can be assured, as the replanting in spring always causes a shortening of the flowering season; therefore purchasers of Pansies should see that their plants are obtained early in the autumn, and, if a place is not at once available for the seedlings in the beds, to have them pricked out in an open spot, at the distance apart above mentioned. The plants need no protection during the winter.

NARCISSUS REFLEXUS.

Mr. Baker has included N. calathinus under the Linnæan name triandrus, which now stands for the group, the Ganymedes of Haworth. The name calathinus is, however, so descriptive of the chalice form of the cup that I hope it may be retained. At the time of the Daffodil Conference it was a scarce flower in England, but since that time a great many bulbs of N. triandrus have been collected and sent to England by Mr. Tait, Mr. Maw, and Mr. Corder, so that it is now becoming better known. It is found that there is great variety in the size and the shape of the flowers, and we shall no doubt have several of these varieties named, when the forms become known as constant. N. calathinus differs from N. triandrus only in the size of the corona, which is much larger in the former. In Redouté's illustration the perianth segments are also much longer in N. calathinus, and it will be seen on comparing our illustration (fig. 120) with the woodcut at p. 34 of Burbidge's *Narcissus*, that it agrees exactly with Redouté's figure. The flowers may, therefore, be considered as examples of the true N. calathinus of Redouté. In this variety, as in N. triandrus, there are many differences in the size and shape of the chalice or corona. There are, however, many which are bell-shaped instead of chalice-shaped—one very beautiful example is given in our plate, and there are at least two others, which have been in bloom this season at Brockhurst, so that a distinctive name will have to be assigned for this group of bell-flowered or campanula-flowered varieties of N. calathinus.

The bulbs from which these flowers were produced were collected by Miss Stanley in Northern Portugal in the spring of last year, and forwarded to me by post. On arriving at Brockhurst the flowers had faded. The bulbs were allowed to ripen in sand, and they have mostly bloomed again this season. There were some hundreds of them, and they have furnished a very interesting series of examples of the triandrus and calathinus varieties. The flowers are of a creamy-white colour. *W. Brockbank, Brockhurst, Didsbury.*

Since writing the above Mr. Baker has given his opinion that this Portuguese form is the N. reflexus of Brotero, and it stands as a distinct species under this name in Nyman's *Conspectus*. It seems to connect, he remarks, "the Brittany calathinus with the Spanish triandrus, so that he now looks upon triandrus reflexus and calathinus as mere forms or varieties of a single species. *W. B.*

[In order to show the diversity in form and size we give, in addition to the illustration furnished by Mr. Brockbank, a series of woodcuts representing nearly allied forms. Many forms have been exhibited this season which lend support to the notion that N. calathinus, N. triandrus, N. cernuus, N. reflexus, N. pulchellus, are all derivatives from one stock. Brotero, however, describes the leaves of his reflexus as keeled, while those of calathinus, Linn., are flat. Brotero also notes the six-lobed cup of reflexus, but this is very variable. Ed.].

Fig. 120.—Narcissus triandrus var. reflexus: flowers creamy-white.

MYRSIPHYLLUM.

The cultivation of "Smilax" is exceedingly simple. It is not always seen in equally good condition, owing to causes which can easily be controlled.

The fact that it is not grown in England in the manner and quality that it is in America has always been an enigma to me. In Cannell's catalogue of 1880 (not having seen one lately, I cannot say whether there has been any change in it), this description of Smilax could be read:—"Myrsiphyllum asparagoides, a suitable plant for hanging

baskets." Our English brethren, though ahead in many respects, can certainly learn something this side of the water—one of these things being how to grow Smilax.

The seed should be sown rather early in the year; the month of March will do very well. When the seedlings have grown an inch or two they can be potted into 2½-inch pots. Place them upon any bench where they will receive a moderate amount of sunlight and a medium temperature, and, if attention is paid to watering, they will grow rapidly, soon being ready for a shift into 3-inch pots. In these they may stay until the time for planting them out in a well-prepared. This may be done in June or July. The bed may be made upon the ground, or a raised bench may be used, if preferred. The latter is not advised, for much more water is necessary to keep the soil in proper condition. The depth of the bed need not be more than 12 inches. Good loam, with a little manure for compost, will be found suitable. The plants may be placed about 6 inches apart in the rows and 12 inches between the rows. Stout wire should then be stretched fron one side of the bed to the other, alongside of each row. The same number of wires, fastened to the rafters by any device which will answer, should also be arranged about 6 or 7 feet above the plants, according to the height of the roof above the house. Green twine can then be tied from the lower wire to the upper, in position for each plant to cling to. As the plants grow, syringe frequently and keep the bed well watered.

During the hot days of summer some shading will be needed, but let it not be too heavy, for, in that case, thrips will surely be abundant. The Smilax will be fit for cutting by October; and this first crop should be disposed of, if possible, before November is past. By so doing, two and perhaps three more crops may be had before the ensuing summer. Many cast out their Smilax roots after Christmas, that room may be made for other things. This, in my judgment, is a mistake, for every year witnesses a scarcity of Smilax in the spring, and the prices then realised are often double those obtained in the previous autumn. Smilax needs plenty of sun and water through the winter; the temperature by day should be from 65° to 75°, and at night should not be lower than 55°. Some consider it advisable to replant every year, but if the old bed is well mulched it will produce good crops for two or three successive years. *American Florist, April* 1.

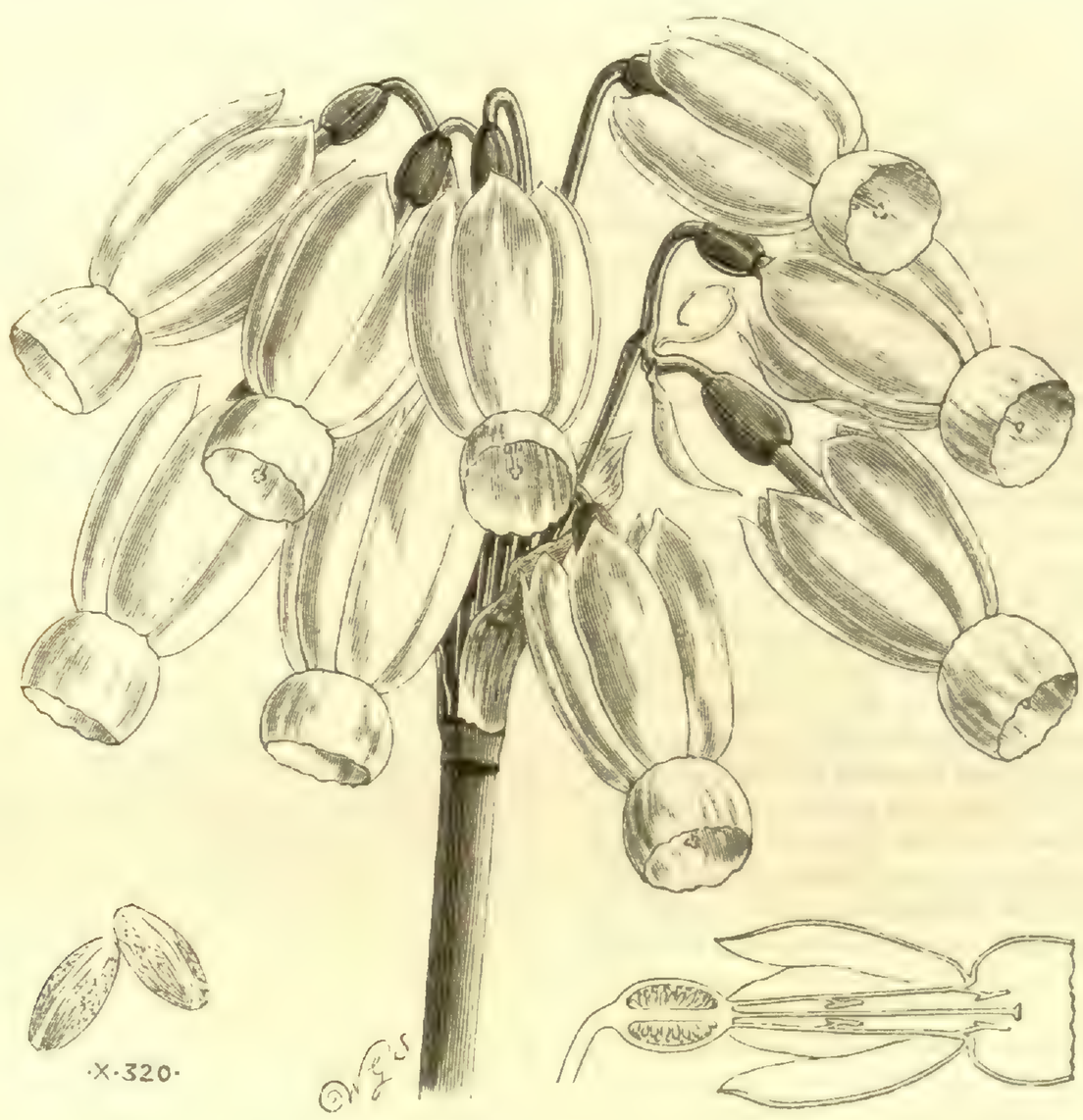

Fig. 121.—N. triandrus, var. fulchellus: corona white, segments yellow. (see p. 640.)

"THE BOTANICAL MAGAZINE."

(*Continued from p.* 514.)

Second Period: 1801 to 1826.—Dr. John Sims became editor of the *Botanical Magazine* soon after the death of William Curtis, though his name first appears on the title-page of vol. xv., 1801. He was a native of Canterbury, born in 1749; and the present Editor of the *Gardeners' Chronicle* is a lateral descendant of the same family. I have found no published biography of Sims, and only know him through his botanical works; but Sir Henry Pitman, of the Royal College of Physicians, has kindly supplied a few particulars of his life. He passed the session of 1773-4 at Leyden, and then returned to Edinburgh, where he took the degree of Doctor of Medicine in 1774. Subsequently he settled in London, was admitted a licentiate of the College of Physicians in 1779, and soon became a prominent member of his profession. He retired from the editorship of the *Botanical Magazine* in 1826, and died at Dorking in 1831, aged eighty-two. Sims was also co-editor with Kœnig of the *Annals of Botany**—a work of two volumes (1805-6), consisting largely of translations of botanical essays from various foreign languages. The first volume contains a portrait of Ray, and the second one of Dillenius.

In a short preface to his first volume of the *Botanical Magazine*, Sims explains that little use had latterly been made of the materials left by Curtis, for several reasons, "principally from a desire to preserve them as entire as possible for the service of the proprietors, in case of emergency, and a wish to indulge our botanical readers with a representation and description of some of the novel and curious plants which are annually introduced, particularly from the Cape of Good Hope." Mention is also made of assistance received from John Bellenden-Gawler, who afterwards changed his name to John Bellenden-Ker. He specially studied the Irideæ, and contributed largely to the magazine during Sim's editorship; and finally, in 1827, published separately at Brussels a paper entitled *Genera Iridearum*. R. A. Salisbury and Dean Herbert also paid great attention to this and the allied natural orders Liliaceæ and Amaryllidaceæ, which, as well as Heaths, were then so extensively cultivated and assiduously studied, that one might justly designate this as the period of bulbous plants and Heaths. Thus, for instance, upwards of two-thirds of the figures in the sixteenth volume represent the former class of plants.

Under the new editor the magazine revived and improved, and two important changes were soon made. I learn from some of the original wrappers, kindly lent me by Mr. Daydon Jackson, with the 173d number the price was raised to 1*s.* 6*d.*, and the plates increased from three to four in each part, and back numbers containing three plates were offered at 1*s.* 3*d.* This change augmented the number of plates in volume xv. to forty-four. Succeeding volumes up to the forty-second, contain forty-eight plates each, or the equivalent of this number in double plates. Singular to relate, through a misprint, no volume is dated 1802, while three are dated 1803, though only one of them correctly, for the only one finished in 1803 was the sixteenth. This and the succeeding volumes of this series were issued half-yearly, so that the number of plates now published annually had been increased from thirty-six to ninety-six, or nearly trebled; and each part, from part 188, contained eight plates.

I have gleaned some other interesting particulars from Mr. Jackson's old wrappers; and among them was the titlepage of the twelfth volume, which was wanting in the Kew set. I can only pause to mention the advertisement of William Curtis' treatise on *The Culture and Management of Seakale*, a vegetable that had been greatly neglected until he devised a proper system of culture.

The volumes of the period now under consideration comprise xv. to liii. Volume xx. contains general indexes to the plants contained in the first twenty volumes of the *Botanical Magazine*, comprehending an alphabetical Latin index, an alphabetical English index, an enumeration of the plants figured in the order of publication, with corrections and additional remarks; and an arrangement of the plants according to the Linnæan system. It is important to note the existence of these corrections and additions. A portrait of William Curtis was given with the nineteenth or twentieth volume, and repeated in the forty-first or forty-second—which I cannot say, because two volumes are bound in one, and the portrait is placed at the head; yet it is probable that in each case it was issued with the index volume. The first series of the magazine terminates with volume xlii., in which is an alphabetical index to the whole series, including many corrections and modifications.

Excluding the bulbous plants—and they are so numerous, and many of them so beautiful, that it is impossible to make a choice—there are few exceptionally noteworthy subjects in the early volumes of that period.* The handsome Sparmannia africana (pl. 516) commemorates one of the botanists of

* In a notice of the *Botanical Magazine* therein (i., p. 16) we learn that the price of the magazine was 3*s.* each part after the number of plates had been increased to eight plates. I may add, too, that Sir Joseph Hooker lent me a small volume of letters addressed to Dr. Sims, and chiefly relating to the magazine, though containing nothing of special interest. Among them is a characteristic letter from R. A. Salisbury, while he was still residing at Chapel Allerton.

* In order to avoid tiresome repetition, the volume and date will only be cited here and there as a guide to the reader, as the number of the plate is sufficient for all other purposes.

Cook's second voyage, who also made considerable collections in South Africa, and introduced the shrub in question into the Royal Garden at Kew. Phlox ovata (pl. 528) is one of the parents of the beautiful race of garden varieties of this genus. Plate 532 represents the gorgeously brilliant, though very evanescent, Tigridia Pavonia, a Mexican plant, which had been known to Europeans for nearly 150 years through the descriptions and figures in the works of Francisco Hernandez, but flowered for the first time, in this country at least, in the garden of Ellis Hodgson at Everton, near Liverpool, about 1796. It produced ripe seeds, and soon became widely dispersed.

Epidendrum cucullatum (Brassavola), pl. 543, flowered in the stove of Edward Woodford, of Vauxhall, adds one more to the still very small number of epiphytes successfully cultivated in this country. We are told that Mr. Watson, the gardener, "who paid great attention to the natural propensities of plants," recommended protecting the roots of Epidendrums with knobs of old tan, giving them shade and hot, damp air, but not much water to the roots." From the same garden came the singular Massonia muricata (pl. 559), introduced by the very successful collector of living plants whose name it bears. As already observed, two thirds of the figures in the sixteenth volume are of bulbous plants. In the four succeeding volumes they constitute about a half, and after this date (1804) their numerical proportion is smaller. Again Mr. Woodford contributes a novelty in Spathiphyllum cannæfolium (pl. 603), which he had received from Mr. Alexander Anderson, superintendent of the Botanic Garden in the island of St. Vincent. Then he follows with Epidendrum elongatum (pl. 611). Whitley & Brame, nurserymen, of Brompton, contribute Pterospermum acerifolium (pl. 620), and Woodford the beautiful Petrea volubilis (pl. 628). How little was known of Rhododendrons at the beginning of the century may be gathered from the fact that ordinary R. ponticum found a place in the same volume. Soon several species of Amaryllis appear; and the showy Pyrus japonica, introduced by Sir Joseph Banks in 1796, flowered in Woodford's garden in 1803.

The twentieth volume (1804) contains several Australian plants, including the beautiful Bauera rubioides and the Banksia ericæfolia (pl. 738). A very poor single variety of Dahlia coccinea (pl. 762) was imported from France and cultivated by Mr. Fraser, of Sloane Square. Knowltonia vesicatoria (pl. 775) reminds us of Sherard's successful gardener. In the same volume appears the first Oncidium (pl. 777) from Woodford's garden, and insectivorous plants are present in Sarracenia flava and Dionæa Muscipula. The first Epacris flowered by Colvill, of King's Road, Chelsea, appears at plate 844. *W. B. Hemsley.*

(To be continued.)

THE FLOWER GARDEN.

SOWING.

Successional sowings of Sweet Peas, Mignonette, and hardy annuals of any kind may be made; also of Wallflowers, Sweet Williams, Rockets, Lunaria biennis, as also perennials of all sorts. Let neat stakes be put to Carnations and Picotees, as they throw out their flower-stems. Reduce the number of shoots on Phloxes and other herbaceous plants to five or six, and if stock be wanted, the young shoots taken off may be pricked out in some good sharp soil where they will speedily emit roots. Let all plants have stakes put to them in good time, and keep the shoots and stems loosely fastened as growth proceeds.

Lawns and Walks.

Mowing and sweeping of grass will now require constant attention, for if the grass be allowed to grow high the mowing machine cannot be used; and in the event of a dry summer, browned lawns will be the result, and hosts of weeds will be scattered over walks and shrubberies, to detract from the good appearance of the garden. Walks should be seen to, either hand-picking them or dressing with Smith's weed-killer. This material does all that is claimed for it, destroying weeds, and their seeds, and rendering the gravel unsuited for their future growth. Care must be taken in applying it not to go near the verges or edgings when these consist of living plants; and persons must avoid passing from the walk while damp to the turf. Keep all paths in a smooth condition, pleasant to walk upon. Advantage should be taken of showery weather to run the Dutch hoe through the flower-beds, so soon as the soil gets in a workable state; this will prevent the surface from baking and keep the moisture in the soil. *W. M. Baillie, Luton Hoo.*

A NEW AROID.

Hydrosme Leopoldiana, *Mast., sp. n.**—There is a whole group of Aroids remarkable for producing from a thick tuber or rhizome one or more leaves, and at a different season the flowers, which are borne on a fleshy spadix surrounded by a conspicuous spathe. The leaves are very generally of large size and noble aspect, the spathe and spadix astonishing rather than beautiful, but having a character and individuality which commend them to the botanist and real plant-lover far more than the mere elegancies and formalities in which others delight. One drawback they have—they emit an atrocious odour; but then this is not persistent, and it serves to heighten the interest attaching to the flower when one learns that this is simply a device to attract insects, the said insects being, all unconsciously to themselves as we presume, made to play an indispensable part at the nuptials of the plant. We have at various times illustrated species of Amorphophallus, the gigantic tubers of which contain an abundance of starch, used for food in India, and some years since we gave woodcuts of a genus Corynophallus, nearly allied to that of which we are now to speak. Hydrosme Leopoldiana was sent to us by M. Linden, of the "Horticulture Internationale," with the intimation that it came from the Congo. As His Majesty the King of the Belgians has taken so noble a part in the civilisation of this region and in the development of its resources, and is moreover so devoted a patron of horticulture, we have ventured to call the new species after his name.

The general habit of the plant is, as is before stated. The petiole is about 2 feet in length, somewhat flattened, green, with minute purple spots near the base. The blade spreads horizontally, as shown in our figure (fig. 122), and measures nearly 3 feet across. It is palmately divided into three main segments, each dividing into two oblong partitions. The partitions are themselves irregularly and pinnately branched (bi-tri-pinnatisect), the ultimate segments narrow lanceolate-acuminate, continuous at the base (decurrent) along the sides of the midrib.

The appearance of the spathe and spadix may be best estimated by our engravings (figs. 122, 123). The spathe is shortly stalked, about 9 inches long, flattened above, the convolute portion forms a vase-shaped tube expanding in the middle into a broadly lanceolate limb prolonged into a long acumen, wavy at the margin, and of a velvetty texture and rich port-wine colour. The spathe surrounds a spadix 2 feet long and more, as thick as the thumb at the base, where it is covered with flowers, but gradually narrowing off into a very long tail destitute of flowers. This tail is so long that our artist has ingeniously contrived to coil it up out of the way in kindly consideration of our space.

The female flowers are below, the males above, without any intermediate or neutral organs between the two. The flowers have no perianth, the anthers are cushion-shaped, two-celled, opening by pores and (as observed by Mr. W. G. Smith) have relatively very large elliptical pollen grains. The ovaries are rounded with a cushion-like stigma. Each is one-celled or imperfectly two-celled, with a solitary erect anatropal ovule springing from the base of the cavity. *M. T. M.*

* *Hydrosme Leopoldiana*, Mast., sp. nov.—Folio unico e tubere proferente; petiolo circa 50 cm. alto, tereti compressiusculo glabro viridi impresso-punctulato maculis minimis violaceis basi consperso, lamina horizontaliter patente diametro 80—90 cm. trifariam palmatimque divisa, divisionibus cito bisectis, segmentis oblongo-lanceolatis laxe et irregulariter bi-tri-pinnatisectis, segmentis ultimis 3—6 cm. longis anguste lanceolatis acuminatis, basi costam utrinsecus continuis seu decurrentibus; spatha breviter pedunculata, basi convoluta ventricosa, versus medium in laminam ovali-lanceolatam longe acuminatam, margine undulatam, rubro-violaceam expansam; spadice 60—70 cm. long., ultra spatham longe producto, cylindrato, e basi spathæ libero superne nudo basi spatio 3—4 cm. floribus femineis obsito, floribus masculis, femineis superpositis spatium, 5—6 cm. obtegentibus; antheris bilocularibus loculis apice poro dehiscentibus; ovariis stigmate pulvinari majusculo superatis, 1-locularibus; ovulo solitario e basi erecto anatropo; floribus neutris deficientibus. Ex ditione Congoensi a cl. Linden importata planta admodum singularis et regi Belgarum humanissimo, sagaci, horticulturæ patrono subtili, summâ cum observantia dicata. *M. T. M.*

FORESTRY.

DEATH OF TREES.

In my last paper on this subject I endeavoured to show that the dead time of winter (that is to say, December and January) was the worst time of the year for planting forest trees, especially in clayey damp soils. In sandy or gravelly soils the case is somewhat different, but even in them the advantages are decidedly on the side of autumn, and next to that spring planting.

The next greatest evil arising from planting in cold, not to say wet soils (for nobody would think of planting wet ground) is that of planting the trees too deep. There is a fixed and determined depth at which all trees should be placed in replanting, and less or more than that depth is attended with very serious consequences, and very often terminates fatally the second or third year. There is a vital point in the structure of every tree situated at that particular part where the stem and root join, which may be termed the neck of the plant, and if the plant is put so deep into the ground that it cannot breathe nor its sap circulate freely disease and death are the inevitable results.

By an established law of Nature the seedling plant grows in exact conformity to these laws, and the neck of the plant in such circumstances is placed neither too deep nor too shallow. If too deep the bark of the stem rots, and the tree ultimately sickens and dies, no means having yet been found whereby to cure or arrest the disaster, for disease it can scarcely be called.

On the other hand, if the roots are not put sufficiently deep into the ground, the white part of the stem formerly under ground, being more tender than the other part, suffers correspondingly to a much greater extent. Of the two evils, over-deep and shallow planting, the latter is much to be preferred. One other additional cause of death from deep planting arises from the manner in which the planting is done. In the operation of making a pit for large trees, the soil at bottom is—or at least ought to be—stirred, and rendered loose and open, but in process of time the soil subsides, and carries the tree with it till below the general level of the ground. All large planted trees should be carefully examined during the first few years after planting in order to correct this evil, and if they are found to have sunk too deep, the necessary means of raising them to the desired height above the level of the ground should be adopted. All ornamental trees especially should be planted, so that the claws of the roots should stand clear above ground, and show themselves prominently. Besides cold soils, winter planting, and planting too deep, which are the principal causes of newly-transplanted trees dying, there are some others which, though of less magnitude, are yet too important to be overlooked. Beech trees, Pines, and Firs are very impatient of soils rich in manure. I have seen Beech hedges killed by means of the application of rich manures, and on one occasion I saw a considerable stretch of hedge entirely killed by applying Turnip-tops to it, intending them for plant food, but which unfortunately

proved plant poison. I know of no forest tree less patient of artificial treatment—and especially of manure—than the Beech. It likes a light, sandy, clean, dry soil free of manure, and usually degenerates in soils of a different and opposite description.

No forest tree can endure farmyard or liquid manure, and in laying down manure-heaps farmers should be warned by the foresters of the danger arising from the liquid flowing down, and being absorbed by the tree roots, and it is both surprising how far on the one hand the liquid runs, and how far on the other the roots extend from the tree. Many trees are killed from these causes without their being at all suspected. *C. Y. Michie, Cullen House, April 5.*

SEED TRADE.

Carrots.—In a seed list published seventy years ago I find but one variety of the Carrot mentioned—the common garden—but Miller a hundred years previously mentioned three as cultivated in gardens, viz., the dark red-rooted garden Carrot, probably the progenitor of that we now know as the Long Red Surrey; the orange-coloured, and the white Carrot; and he remarks that the first and second of these are "commonly cultivated in gardens for the kitchen, as is also the white, though not so common in England as the two former, nor would it be worth the gardener's while to propagate it (the white) for its pale colour would render it less acceptable in the markets, where the deepest coloured Carrots are always most esteemed, though for the table the white is always preferred as the sweetest." In France and other parts of the Continent there is a variety known as the transparent white Carrot that continues to be grown chiefly as a kitchen garden Carrot. [This is probably the Carotte Blanche des Vosges of Vilmorin's list, a soft watery unpleasant flavoured kind, deficient in sweetness, and grown in the Vosges as a field crop. Ed.] But the old taste in this country of preferring those of a good red colour for kitchen purposes prevails as strongly in the present day, and he would be a bold gardener indeed who would send into the kitchen white Carrots for table use. In this country they are now grown chiefly for cattle feeding, and they are more particularly used for horse food. It may be remarked on passing that, as an agricultural plant, it is only advisable to cultivate the Carrot on light, dry, rather rich soils, and on such as are a little peaty, which should be previously subjected to a very deep ploughing. In France, Germany, and some other parts of the Continent, the field culture of the Carrot is much more extensively practised than in Britain.

In 1842 a leading seed catalogue gives but three varieties of the Carrot—the Earliest Horn, the Long Orange, and the Altringham: ten years later the Long Red Surrey, the Studley, a fine high-coloured selection from the Long Orange, which originated at the village of Studley, Wilts, between Calne and Chippenham; James' New Scarlet, and the Short Orange had been added. There are now to be found in English seed lists some eight or nine distinct varieties, the most popular being the Short Horn, James' Scarlet Intermediate, the Long Red Surrey, and the Altringham; the last three being our leading market kinds—the Long Surrey being the most popular in the South and the Altringham in the North. The latter is also grown for cattle feeding. It is said that the seeds of the Carrot are employed in the manufacture of some kinds of liqueurs; and the juice of the Red varieties is used for colouring butter. Parkinson mentions that in the time of James the First the ladies adorned their head-dresses with Carrot leaves, the light feathery verdure of which caused them to be no contemptible substitute for the plumage of birds.

Among edible rooted plants the Carrot is a most important crop, and very extensively grown in soils suited to their culture; they should be light, warm, deeply trenched and well manured. The Scarlet Intermediate or James' Greentop, or Merriott Scarlet—which last is considered an old form under a new name—is probably the most popular and extensively grown Carrot of the day, and most cultivated for main crop purposes. In all probability this originated as a selection from the Early Horn, showing a green top. By some the Merriott Scarlet is regarded as an earlier Carrot, but larger and coarser. The St. Valery is a large and handsome French variety, not new, but grown for a long time in the locality in which it originated, and is now becoming better known; it is intermediate in size between the Long Red Surrey and James' Scarlet, but rather more slender than the latter, and has thick, sweet, and tender flesh. It is comparatively new to English seed lists. The Early Nantes or Improved Stump-rooted Horn is the best of all the Horn type, having no heart or core; and although distributed only a few years ago, it is becoming one of the most generally cultivated of the kitchen garden Carrots. Its roots are very clear in the skin, symmetrical in shape, are easily pulled out of the ground, and keep well. The French Horn is well known as an excellent early forcing variety, and also for sowing in the months of July and August, for pulling in the autumn; but a warm sunny border is needed to bring them to perfection. The roots partake somewhat of the shape of the Turnip-Radish.

An assumed new variety, known as the Shaftesbury Long Orange, appears to be the same as James' Intermediate, but of a more orange colour. The Long Red Surrey is grown much more in market than in private gardens, and a good strain of it should be destitute of a green top; but to have it in fine condition the land must be light, deeply tilled, and well manured. Unlike the Altringham, the root does not appear much above the soil when fully grown. The Altringham Carrot is the most popular in the North of England and in Scotland. It is easily distinguished by its roots, growing more above the ground, and having the whole of the part thus exposed green in colour. It is a very productive variety, and of excellent quality, and a sort that always does well where the soil suits it. It succeeds in a heavy soil if it is deep enough.

The white and yellow Belgian Carrots are, as already observed, grown for cattle purposes. The Wiltshire Giant is a very large and improved type of the white Belgian, now grown by many, and originally sent out by a Mr. Hall, of Worthing, and produces a great weight of crop, and the new Yellow Giant Intermediate is highly esteemed for cattle feeding; it produces roots more resembling a Mangel Wurzel, is extensively cultivated in the Eastern Counties, and is said to be most valuable as a cattle food when mixed with Swedes and Mangels.

The colour of Carrots depends very much on the character of the soil in which they are grown. Any one may have seed of a perfect stock, but the crop will lose in colour if the soil be unsuitable. On the light, boggy, reclaimed fenlands in Lincolnshire, hundreds of acres of Carrots are grown. One grower requires as much as 2 tons of seed—an enormous quantity in bulk, English-grown seeds being bearded and light; a portion of this quantity he sells, and sows the rest. Nearly all the English-saved Carrot seeds come from Essex, for not only is the soil suitable, but the growers understand when and how best to gather it, and making a clean and good sample. A great deal of Carrot seed is imported from France, especially of the Horn types. The French-saved seeds have no beard, as in the case of those saved in England, and it is said the atmosphere in France causes the beard to part freely from the seeds, consequently a given weight of seed is much smaller in bulk than the same weight of English saved.

Carrot seed is received from the growers in bales, and it is then sifted, mainly by the women engaged in the seed warehouse, and then weighed off into bags ready for executing orders.

Carrots are much grown for exhibition purposes, the leading varieties being the French Horn, Nantes, Intermediate Scarlet, and the Long Red Surrey. To these can be added the St. Valery. Carrots should be of good size, without blemish, thoroughly symmetrical, and the deeper, the brighter red the colour the better. *Pisum.*

PLANTS AND THEIR CULTURE.

SELAGINELLAS.

Although these collectively cannot be turned to such general use for decorative purposes as can Ferns, they are, nevertheless, a very beautiful and serviceable class of plants, and are valued particularly by ladies. Most of the species are easily increased either by division or cuttings, and young plants should be shifted into larger pots or pans as they require room, and early enough to get well rooted into the fresh soil before winter. Like their near allies, Ferns, they prefer a sandy peat soil, good drainage, with crushed bricks, and a little loam added. They need a shaded situation, a moderately close atmosphere, and cannot endure their roots to become dry; they are also benefited during their season of growth by being damped overhead morning and evening. The Selaginella is especially useful on rockwork in warm houses, and they afford a pleasing effect when judiciously placed in shaded niches and crannies, or upon the sides of waterfalls or tanks, where they can have the necessary amount of shade and moisture. The free-growing varieties are the best to use for this purpose. S. denticulata, S. umbrosa, and S. Mertensi, are very desirable edging plants for beds in conservatories where the occupants are planted out, and are suitable subjects to mix with Ferns, Panicum variegatum, or Tradescantia zebrina, &c., when they are used for the same purpose.

Pans are better than pots for the culture of specimen Selaginellas, and several young plants placed together in them and carefully treated quickly form fine masses, and develope more fully than they do in small pots. To form pyramids perfect drainage should be ensured, and slabs of peat be cut to the desired size and shape, the largest being put upon the drainage and covered with a thin layer of sandy soil in which the young plants or cuttings should be placed, thus each layer can be managed until the pyramid is completed, and to keep the whole firm a ring of copper wire may be fixed under the rim of the pan, to which other wires should be fixed and fastened over the pyramid. Some kinds of Selaginellas are well adapted for use in various forms of table decoration, and a supply of fresh young plants should be kept up by propagating several batches during the year, and growing them of various sizes to meet the different services to which they are to be put. Those of trailing habit, such as S. cæsia, are indispensable for draping over the sides of silver epergnes, or to be used in a cut state to mix with cut flowers in centre glasses, &c., while the compact growers are equally invaluable for covering the surfaces of vases containing table plants. S. denticulata, S. variegata, S. Poulteri, S. Emiliana, S. Mertensi, S. M. variegata, S. apoda, and S. cæsia are amongst those most suitable for dinner-table decoration. S. apoda needs a warm place in which to grow, and requires frequent replanting to keep it from dying out. *Thomas Coomber, The Hendre Gardens.*

A Remarkable Irish Insect.—In the *Brut y Tywysogion* (*Chronicle of the Princes*), a Welsh history, written by Caradog, who died in the middle of the twelfth century, the following entry appears under the date "Oed Crist 893" (A.D. 893):—"In the summer of that year vermin of a strange species were seen in Ireland, similar to moles, with two long teeth each; and they ate all the corn, all the pasture and the roots of grasses and hay ground, causing a famine in the country; and it is supposed the Pagans" (*i.e.*, Danes) "took them there, and wished likewise to introduce them into the island of Britain; but by prayer to God, alms to the poor, and righteous life, God sent a sharp frost during the summer weather, which destroyed those insects." *W. G. S.*

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APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

FRIDAY,	May 20	North of Scotland Horticultural Association: Meeting. Royal Botanic Society: Lecture.
SATURDAY,	May 21	Royal Botanic Society: General Meeting.

SHOWS.

WEDNESDAY,	May 18	Royal Botanic Society: First Summer Show.
SATURDAY,	May 21	Crystal Palace: Summer Show.

SALES.

MONDAY,	May 16	Established Orchids, at Protheroe & Morris' Rooms.
TUESDAY,	May 17	Established Orchids, at Protheroe & Morris' Rooms.
WEDNESDAY,	May 18	Collection of Orchids in Flower and Bud, at Stevens' Rooms. Stove and Greenhouse Plants, at Aries Court, by Protheroe & Morris. Greenhouse and Bedding Plants, &c., at Protheroe & Morris' Rooms.
THURSDAY,	May 19	Established and Imported Orchids, at Stevens' Rooms. Greenhouse Plants, Orchids, &c., at Dudley House, Nightingale Lane, Balham, by Protheroe & Morris.
FRIDAY,	May 20	Imported Orchids, at Protheroe & Morris' Rooms.
SATURDAY,	May 21	Nursery Stock, at the American Nursery, High Road, Leytonstone, by Protheroe & Morris.

Giant Asparagus.

The *Standard* lately regaled its readers with an account of a "new and splendid" variety of Asparagus discovered in the steppes of Akhal Tekiz, and the stalks of which "are affirmed to be nearly as thick as a man's arm, and to attain a height of 5 to 6 feet. One of them, indeed, is said to be large enough to supply ten Russian soldiers with a sufficient meal, and as the flavour is described as equal to that of the best European kinds, it is not unlikely that, for a time at least, the armies of the Czar may be asked to adopt a vegetarian regimen." Our contemporary did not cite his authority for these statements, but made them a peg whereon to hang a series of observations on vegetables in general, and their history in particular. Horticulturists and botanists will hardly be likely to rest satisfied with such statements, and hence we have taken steps to enquire into the matter so far as we were able.

In the first place, presuming that the plant was really an Asparagus, we had to ascertain whether any species of the genus was known in Siberia and Central Asia. This was soon set at rest by a reference to Mr. Baker's paper in the *Journal of the Linnean Society*, xiv., p. 601, where several species are described from these regions, one of which, A. verticillatus, was suggested by Mr. Baker as possibly the plant spoken of. The young shoots of Asparagus capitatus are, moreover, mentioned by Surgeon-Major Aitchison as being eaten in the Kuram Valley.

The last-named author (*Journal of the Linnean Society*, xviii., 1881, p. 25) mentions numerous plants as eaten by the natives. Thus Eremurus aurantiacus is spoken of as—

"The sole vegetable upon which the inhabitants of the Hariáb district depend for fully two months of the year. The leaves are simply cut off the root-stock as close to the ground as possible, leaving the stock intact, but for which the plant would long ago have been extirpated. This, as a vegetable, was considered very good by the army, and boys brought daily baskets full of leaves into camp for sale. It resembles in flavour no other vegetable I ever tasted, it being hard and crisp, without being either tough or fibrous, and it might prove under cultivation a welcome addition to our limited list of spring vegetables. The young shoots of Asparagus are collected and cooked, as are also the leaves of the cultivated Fig, of Carum bulbocastanum (not the tubers), and the rhizomes of Polygonatum verticillatum. Between Badishkhel and Thal the stems of Boucerosia Aucheri and the young flowering shoots of Chamærops Ritchieana are eaten raw, as are also the roots of the Turnip-rooted Nepeta. . . . The bark of this root is flavoured like Turnip, whereas the heart of the bulb (?) has the flavour of fresh Almonds. The leafstalks of both Rhubarbs, of wild Onions, the leaves of the common Clover, Trifolium resupinatum, and the stems of the young flowering shoots of an Orobanche, which is parasitic upon Artemisiæ, are eaten raw."

We quote this passage at full length in order to show the ill-founded character of the *Standard's* surmise, that the world has been so thoroughly ransacked that it is almost vain to expect many new varieties of hardy vegetables to be added to our present store, and that Asia, at any rate, is not the region from which a great deal is to be drafted.

On the contrary, we may safely adapt the old proverb about the supply of fish, and say that there are more vegetables to be had for the search than are at present in use. The difficulty is rather in overcoming the prejudice against new edibles, and in getting them cultivated, than in discovering them.

To return to the Central Asian Asparagus. Having noted what had been already published by him, we then applied direct to our friend, Surgeon-Major Aitchison, the botanist of the Affghan Boundary Expedition, for any further information he might be able to supply. In reply, Dr. Aitchison writes expressing his doubt as to the plant mentioned in the *Standard* being really a species of Asparagus. There are, however, he says, several Orobanches, the stems of which are from 2—3 feet in height, and not unfrequently two or three grow together, forming a mass as thick as a man's wrist. These are fleshy, crisp, destitute of fibre, and are eaten raw by the Affghans. Their general appearance before flowering might suggest the name of giant Asparagus. "I know of no other plant," continues Dr. Aitchison, "occurring in the district I went over that would in any way resemble the new Asparagus except the Orobanches." That Broomrapes, so familiar in our fields, should be worth eating will surprise many of our readers.

Fig. 122.—Blade of leaf, Hydrosme leopoldiana: 3 feet in diam. (see p. 642.)

Gardeners' Orphan Fund.—We are requested to urge upon gardeners the desirability of filling up and returning by Saturday, the 21st inst., to Mr. Barron, Chiswick, the forms relative to the above, in order to enable the committee to decide upon their future action in this important and interesting undertaking.

Anemone Fanninni.—This handsome herbaceous perennial is now, probably for the first time in Europe, in flower, planted out in a cool-house at Kew. The full-page illustration which appeared in these columns for April 3, 1886, does no more than justice to so remarkable a plant. Seedlings have at Kew withstood perfectly all the severities of the past winter in the open air, so that in all probability A. Fanninni will prove to be quite hardy under favourable conditions—in the South of England, at any rate. The white fragrant flowers are about 3 inches in diameter, and the numerous narrow petals form a

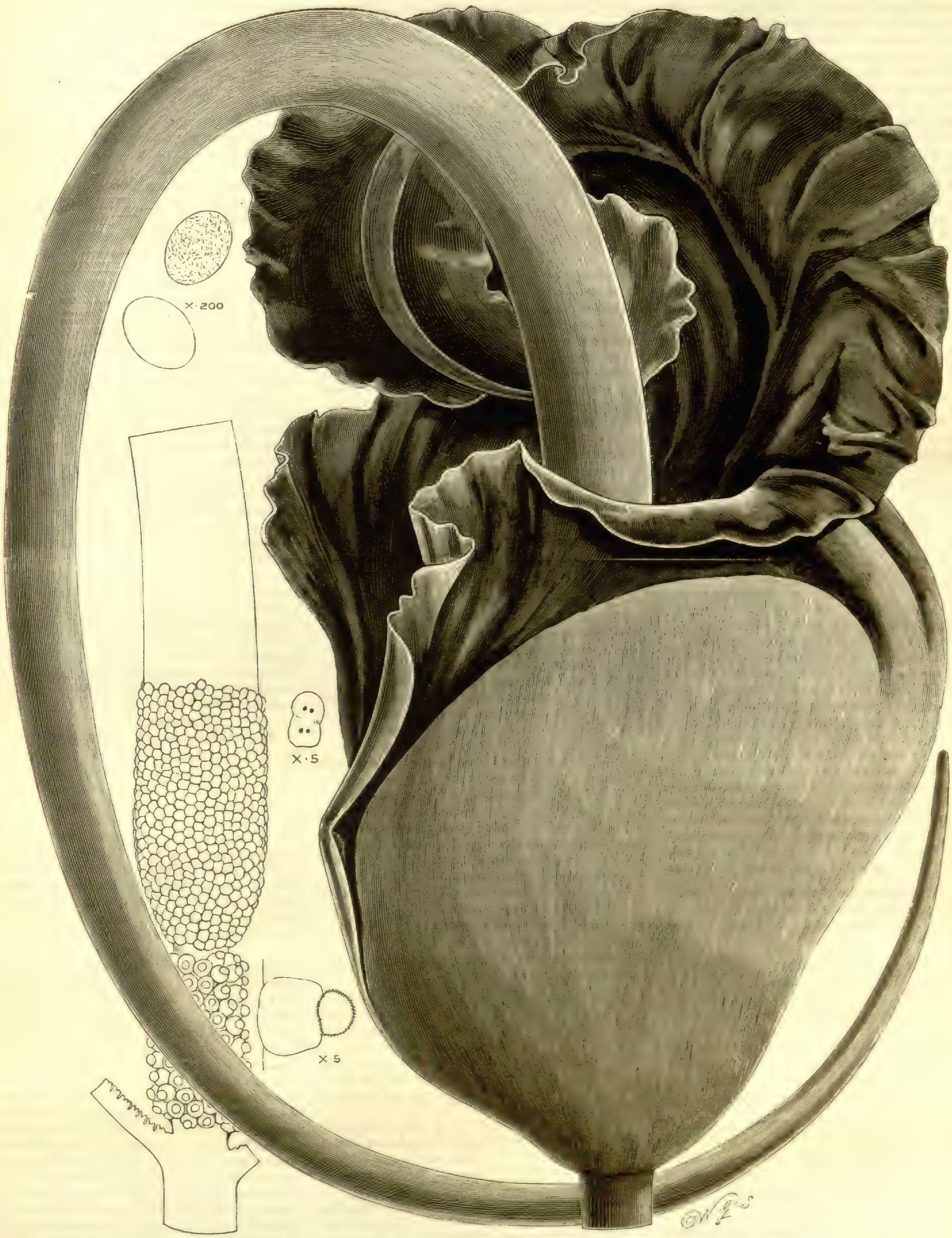

Fig. 123.—Hydrosme leopoldiana: spathe rich purple. (see p. 642.)

beautiful foil for the dense bush-like tuft of anthers with their yellow stamens. The species is a native of Natal, where it flourishes (flowering from September to December), in open, grassy places, at elevations of from 3600 to 4000 feet. Mr. Adlam's description of the locality in which he discovered the plant is here copied from his very interesting communication to the *Gardeners' Chronicle*, printed in the same number which contains the figure above quoted:—"Next morning I started alone across country in search of a much-talked-of plant. On such a morning how pure and fresh is the air on the grassy hills of Natal. The morning mists still float and sweep along the higher ground, alternately hiding and disclosing the cattle feeding on a thousand hills. My path led along a hillside, where Anemone Fanninni grew very strongly—flower-stems 5 feet high, leaves 2 feet in diameter, and flowers 2 inches across. Twenty years ago Harvey noted it as a noble plant, yet I am not aware of its being in cultivation at home." A figure has been prepared for publication in the *Botanical Magazine*.

Dresden International Horticultural Exhibition, May 7—15.—This important exhibition was opened by the King of Saxony in person on May 7 at 10 a.m., the Queen and a numerous *suite* being in attendance. The weather was not very propitious, nevertheless the ceremony passed off brilliantly, and the general opinion is, that the show will be a great success. The outdoor arrangements are very fine indeed, and the quality and quantity of the exhibits leave nothing to be desired; the arrangements likewise come in for general approval. The only prize coming to England that we are at present able to ascertain, beyond those we notify in another paragraph as having been made to Mr. B. S. Williams, is the Empress Augusta's prize for the best collection of Orchids, awarded to Mr. F. Sander, of St. Albans. Mrs. Sander was permitted to make the Queen of Saxony a present of a very handsome bouquet, which measured nearly a yard in height. The flowers composing the bouquet were entirely those of Orchids, from the gardens of the Duke of Marlborough, Baron Schroder, Baron Ferd. de Rothschild, Baroness William de Rothschild, Mr. C. Dorman, and from the nursery at St. Albans. These flowers had been 98 hours on the journey, but owing to the good packing were perfectly fresh-looking. They arrived in a loose state, and were arranged in the form of a bouquet by H. F. Daum, of Frankfort, a specialist in bouquet making. Of Conifers, a very fine collection was exhibited by Messrs. Peter Smith & Co., Hamburgh; other exhibitors from Dresden and the neighbourhood contributed in considerable numbers. Bouquet making, a special industry of the country, was well represented and formed one of the chief attractions. At one stand the nosegays were bound by means of a little machine driven by steam.

Postponement of Reigate Rose Show.—The Reigate Rose show will be held this year on Thursday, July 7, instead of on July 1, as previously stated.

College of Agriculture, Downton, Salisbury.—Mr. Walter J. Malden, of Cardington, Bedford, for upwards of six years manager of the Royal Agricultural Society's Experimental Farms at Woburn, has been appointed Assistant Professor in Agriculture to Prof. Wrightson in the College of Agriculture, Downton, near Salisbury. Mr. Malden and his family for many generations have been, and are, extensive occupiers of land at Cardington, Beds.

"Farm, Field, and Fireside," is the name of a new weekly journal, published at 1*d*., and whose objects are sufficiently shown by the alliterative title. If the subsequent numbers are as good as the two before us, the purchaser will get good value for his money.

Australian Acacias.—Baron Von Mueller has issued his second decade of lithographic figures and analytical details of various species of Acacia. Explanations of the plates are given, but the full details will be given separately.

Award to an English Firm at the Dresden Exhibition.—Mr. B. S. Williams has been awarded two Gold Medals and a Prize of Honour for a collection of Orchids, new and rare plants, Cyclamens, Amaryllis, Cliveas, books, &c., exhibited by him at the Dresden International Horticultural Show, which was opened on the 7th inst.

The Orchid Show at Mr. B. S. Williams' Nursery, Holloway.—On a recent visit to the above we found preparations were being made for a fine display of these plants, the show opening on Wednesday, the 11th inst., the many examples already in flower and bud promising to prolong it for several weeks. Vandas, Cattleyas, Miltonias, Odontoglossums, and Masdevallias, are advancing rapidly under the favouring influences of the weather.

A Dry Time in Ireland.—The dry weather which characterised the late winter and early spring in England had its counterpart in Ireland, The Rev. F. Tymons, writing from Drumcondra, co. Dublin, dwelling on the uncongenial spring, remarks:—"As for us, rain seems to have forgotten its ways in Ireland, as we have had uncommonly little since this time twelvemonths." This statement will probably come as a matter of great surprise to many of our English readers.

Madeira.—Here is what a plant lover says of it:—"I spent an hour or two at Madeira both going and coming. What a beautiful place it is! I never saw any place so lovely. Immense masses of Bougainvillea spectabilis in various shades of colour; Tecomas, Bignonias, Roses, Solanums, and other brilliant things, as it were, pulling the walls and houses down with their weight of bloom. Many tropical fruit trees, which at home drag on a miserable existence in our little stoves, were there in splendid health, and in many cases covered with fruit. Anonas, Loquats, Locusts, Oranges, Bananas, Dates, Psidiums, and lots of such-like, things were just as happy and fruitful there, as Apples and Cherries are with us. Pelargoniums, Lantanas, Adiantums, Heliotrope, Eupatorium, &c., are weeds, and occupy the same places as Nettles and Dandelions do here."

The Library of the late Professor Morren.—We understand that the Belgian Government has declined to accept the legacy of this splendid collection. The conditions were that the library should be valued and offered to the Government for one-half the valuation. The valuation, undertaken by some members of the Royal Academy of Sciences of Belgium, amounts to about £1600; but, as we have said, the Belgian Government declines to pay the moiety, and thus loses one of the richest botanical libraries in existence.

"Lindenia."—The plants figured in the last number of this publication are:—

Oncidium cucullatum, t. 81.—A species found at an elevation of more than 1200 feet on the mountains of Ecuador and Columbia, and first introduced by M. Linden. The plant extends over a wide range of country, and is proportionately variable. It requires a cool-house, where the temperature is from 2° to 10° C. (35° to 50° F.), much air, and constant moisture.

Odontoglossum Schillerianum, t. 82.—The special feature of this species is the large brown blotch which covers nearly the whole of the lip. It is a cool Orchid, requiring the same treatment as O. Alexandræ.

Saccolabium giganteum var. illustris, t. 83.—The variety differs from the species in its larger flowers; the coloured spots on the segments are of a deeper colour, as is also the lip. It is evidently a robust variety. It is a native of Cochin China. The plant requires to be kept at rest for two months after flowering.

Cypripedium Sallieri ×, t. 84.—The origin of this hybrid was not known for certain till Mr. Bowring proved that the current surmise was correct, and produced the present plant by crossing C. insigne and C. villosum.

Bigeneric Orchid Hybrids at the Linnean Society.—The results of hybridisation in this order have been so remarkable that it was not likely they would long escape attention from a scientific standpoint. A paper on the subject was read at the meeting of the Linnean Society on May 5, by Mr. R. A. Rolfe, A.L.S., of the Kew Herbarium. The author treated the subject chiefly with reference to its bearing upon classification, and with regard to hybrids generally came to the following conclusions:—1. Hybridisation may take place not only between distinct species, but also between distinct genera; or between plants so structurally different as to be usually regarded as such. 2. These hybrids are generally of artificial origin, or accidentally produced, and cannot be treated in the scheme of classification either as natural varieties, species or genera. 3. The possibility of hybridisation taking place between species hitherto considered distinct does not necessarily prove them to be merely forms of the same species. 4. The occurrence of a hybrid between two structurally different genera does not prove the necessity of uniting them in one; nor can such hybrids be arbitrarily referred to either of the two parent genera. 5. Species and genera, too, will always have to be dealt with in the scheme of classification according to their structural peculiarities and differences, without reference to the possibility of hybridisation taking place between them. After showing bigeneric hybrids to be always more or less intermediate between the two parents, the author recommended that the plan advocated in these columns (1872, p. 358), of compounding a name from that of the two parent genera, should always be adopted. He then proceeded to deal with existing bigeneric Orchid hybrids on these lines, proposing Phaiocalanthe, Anæctogoodyera, Læliocattleya, Sophrocattleya, and Zygocolax. The paper was illustrated by a number of interesting specimens from the nursery of Messrs. James Veitch & Sons, and from Kew.

Flowers in Season.—From Mr. F. W. Burbidge, Trinity College Gardens, Dublin, come the long arching sprays of Berberis stenophylla, the pretty hybrid between B. Darwini and B. empetrifolia—a fine plant for a group or to cover a low wall; yellow Oxlips, Polyanthuses, both single and double forms, the latter with petals of rich brown, golden margined; and double and single S. Brigid Anemones, very strong of growth and bright of colour. With these was Heuchera hispida—so valuable in the spring garden for its handsome foliage of bronzy-green, covered with soft hairs; H. Richardsoni is synonymous with it.

Linnean Society.—The following distinguished botanists have been elected Foreign Members of the Linnean Society:—Dr. George A. Schweinfurth, Professor of Botany, Cairo, Egypt, whose travels and botanical researches in Central Africa are widely known; Count H. Solms-Laubach, Professor of Botany, University of Göttingen: his observations on the Corallines, Gulf of Naples, investigations in plant anatomy, especially that of flowering parasites, &c., are acknowledged biological contributions of merit; Dr. Melchior Treub, Director of the Jardin Botanique, Buitenzorg, Java, whose studies among the Lycopods, Cycads, Lichens, &c., and whose labours in editing the *Annales du Jardin de Buitenzorg* are highly appreciated. The following gentlemen besides were elected Associates of the Society:—Mr. William H. Beeby and Mr. Adolphus H. Kent, of London, and Mr. J. Medley Wood, of Durban, Natal—all three worthy workers in the various departments of botany.

Royal Horticultural Society. — The Council of this Society has resolved not to hold the proposed Chrysanthemum Show and Conference which had been fixed for November 8 and 9 next.

Professor Reichenbach. — Professor Dr. Reichenbach was awarded a special Diploma of Honour in recognition of his botanical authorship, and Mr. Sander a Gold Medal for the *Reichenbachia*, at the International Horticultural Exhibition at Dresden.

M. Boussingault.—The death of this distinguished physiologist and agricultural chemist is announced.

The Amsterdam Food Exhibition.—Great preparations are being made in Amsterdam for the exhibition of articles of food and cookery, which is to be opened with considerable ceremony in that city in June next. The object of the Exhibition is to extend the knowledge of the various vegetable and animal kinds of nourishment provided by Nature for the benefit of man; to furnish by mutual comparison a stimulus to further improvement, both in the cultivation and preparation of these articles; and at the same time to disprove in the most convincing way the prejudices which too often prevent or hamper the general introduction of useful means of nourishment. The reason why there is at the moment so limited a hold on the Dutch market is that almost all goods imported reach the retailer through the hands of middlemen. There is little doubt that English wares are not of themselves too dear for Holland. With a view to encouraging the presence of British exhibits, not only has the cost of space been reduced, but the railway and steamer carriage rates have been greatly lowered. It has also been provided that no customs' duties shall be charged. Other considerable facilities are announced in addition. Part of the Exhibition grounds will be fitted up as a seventeenth century town-hall, market-place, fish-market, &c., and a large square will be set apart for concerts and entertainments of a varied character. The Exhibition will remain open from June to September. The catalogue of the classes of exhibits extends to over a score of large quarto pages. A separate catalogue is devoted to the exhibits coming under the head of agriculture and horticulture, including fruit and vegetables of all kinds according to season. There will be a series of competitions, for which gold medals and prizes of 500 francs are to be given; also a series of exhaustive lectures on cookery. Applications for space are to be sent in immediately to Mr. J. F. Brame, 53, Union Passage, Birmingham.

Economical Vegetable Products.—At the Linnean Society's meeting, April 21, Mr. E. M. Holmes exhibited specimens of several species of Shorea which yield vegetable fats in Borneo and Sumatra, and he directed attention to several species of Dichopsis affording guttapercha from the bark and fats from the seeds. He pointed out the importance of the cultivation of the more valuable D. oblongifolia and Ceratophorus Leerii, as the natives are rapidly destroying these trees, while it takes twenty years for them to arrive at productive maturity. The Dutch have already commenced their cultivation, and our planters in the colonies may hence take a lesson therefrom.

Professor C. von Naegeli.—The seventieth birthday of Professor C. von Naegeli was celebrated on March 30 last, on which occasion were present the officials and students of the Botanic Gardens at Munich. Herrn Inspector M. Kolb, in a short speech, alluded to the great services of the Professor in science and art; and Dr. Dingler, *Custos* of the Royal Herbarium, in an emphatic poem, recalled the services rendered by the aged Professor to Botany. A significant present was also made, the idea emanating from Herrn Kolb, of a basket filled with seventy different fruits, ornamented with seventy kinds of flowers, and surrounded by a garland composed of seventy plants, which belonged to as many different genera and species. Numerous telegrams and congratulations were received from previous pupils and admirers, from the Imperial and Royal Horticultural Society, and also from the Society of Natural History, St. Petersburg, of which, on the

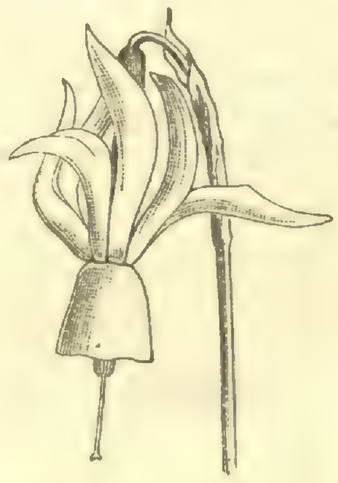

Fig. 124.—Narcissus triandrus var.

same day, Professor Naegeli was made an honorary member.

Hyacinth Exhibition in Reading.—We learn that Messrs. Oakshott & Millard, Royal Counties Seed Establishment, Reading, had an exhibition,

Fig. 125.—Narcissus triandrus var.

during the week ending May 7, of Hyacinths, probably one of the largest ever seen in the county. The Hyacinths were grown in the neighbourhood of Haarlem. The collection, numbering no less than seventy distinct varieties, was tastefully arranged

Fig. 126.—Narcissus triandrus var.

on some 60 feet of tabling, in Messrs. Oakshott & Millard's front premises in Blagrave Street.

Devices in Wire for Suspending Flower-stalks, &c.—Some ingenious little contrivances in brass and iron wire for the above purposes have been sent us by Messrs. Williams Bros. & Co., of Birmingham. These are of a variety of patterns for diverse purposes, and will be found useful in towns where sticks are not always obtainable, or for use by ladies in fastening up their plants in window or room. Being of simple construction and of ordinary material, they should be cheap.

Presentation.—On Monday evening between thirty and forty gardeners and tradesmen of Esher assembled at the "White Lion" inn in that village to take leave of Mr. George King, who for fifteen years was head gardener to the late Robert Few, Esq., Wolsey Grange. Mr. King was a very successful exhibitor at the local shows, especially of Chrysanthemums. He originated the Gardeners' Mutual Instruction Society for Esher and district, which institution has seen six years of useful existence. He was also one of the founders of the Esher Horticultural Society. To mark the appreciation in which he was held it was resolved to present Mr. King with a testimonial in the form of a barometer from the Gardeners' Society, and of handsome plated tea and coffee services and salver, in the purchase of which residents in the village joined. The presentations were made by Mr. Crump, head gardener at Sandown House, and by Mr. Child, of Claygate. Mr. King, who made a suitable acknowledgment, goes to take charge of the gardens at the country seat of W. McFarlane, Esq., proprietor of the *Sporting Life*.

Trade Notice.—It is announced that Messrs. Taber & Cullen, the well known seed growers of Rivenhall, Essex, are about to join the firm of Mr. Robert Cooper, of 90, Southwark Street, S.E., the amalgamation taking place on June 1 next.

Notices of Books.

Playing at Botany. By Phœbe Allen. (London: Hatchards.)

This book is intended to teach children a few facts about the classification and formation of plants. The authoress writes twelve of the great natural orders, and tries, by repetition and explanation, to induce children to remember some of the long compound terms employed in botany. There is a great deal of information compressed into a small volume and arranged as a series of dialogues or lectures. There is only one indifferently coloured plate which seems a pity, as all children are fond of pictures, and those who cannot get the flowers described would find their interest much heightened could their lessons be relieved by some correct and tasteful diagrams. The quotations at the heads of the chapters are well chosen and pretty. It is very doubtful, however, whether children will learn much from this way of teaching them. It would interest them more, we think, were a botanical lesson given first, and then a story told them without any double meaning in it. It should also be a foremost aim with a teacher to avoid, as far as is possible, teaching anything which the pupil will eventually have to unlearn. A diffuse and vague method of communicating facts, however, inevitably leads to inaccuracy and loose thought, which it is very difficult to overcome. We fear children will find this book little to their taste; but as this is a matter in which the criticism of those for whom the book is intended is of more value than that of those who have forgotten their own initial difficulties, we have submitted the book to a critic of this class, whose opinion coincides with our own, that the book is a well-intentioned "mistake."

Villa Gardening. By E. Hobday. (London: Macmillan & Co.)

This is a compilation from the pages of *Gardening*, of useful matter suitable for almost any gardener, although from the modesty of its title it might be inferred that it was addressed to those who own, or have

the care of small gardens only. The writer, who is an excellent cultivator himself of all kinds of plants, and in no sense a specialist, treats of hardy trees, shrubs, and flowers, giving their names where possible in the vernacular. All old-fashioned plants, epecially the sweet-scented ones that were once so common, and will be so again, are touched upon. A chapter is devoted to the kinds of trees and shrubs found best suited to seaside places, and the methods to be adopted to secure shelter there. The winter arrangement of the garden is succinctly afforded, the various trees and shrubs with coloured foliage being treated of. Florists' flowers have several chapters to themselves, as have fruits under glass and in the open; vegetable culture in the garden, and vegetable forcing, together with the management of the inmates of the greenhouse, intermediate, cool Orchid, and stove houses. A calendar for the garden, and an ample index, complete the furnishing of the volume.

We notice the American Blackberries are said to have a future before them, which we are inclined to doubt, seeing that no good results have been observed under the best treatment in even the warm South. It may likewise be the truth to say that where the Apple thrives the Pear will also succeed, but it is true only of the warmer parts of Britain, and not of any county north of the Humber, where the Pear, with a few exceptions, must be grown on walls.

THE ORCHID HOUSES.

As the general improvement of Orchids greatly depends on their treatment during the next three or four months, growers should make the best use of the intervening time. There is no doubt that many plants are less vigorous than they should be on account of their having been starved prematurely from want of water at the roots, and exposure to an atmosphere that was too dry. The section that requires heat should be encouraged to start early into growth, and it is better to use a little more fire-heat now than in the autumn. Plants that are grown with very little or no shading will dry up quickly, and it will be the best practice to water the very dry ones in the evening. Masdevallias, Odontoglossums, and East Indian-house subjects (if not fresh potted) should be watered before they become quite dry. Cattleyas and Lælias should be allowed to get tolerably dry before watering them. Any species which have their season of flowering in May, when the sun's heat is on the increase, will suffer much if exposed to a dry atmosphere, the juices of the plant itself being greatly exhausted if not replenished by moisture in the air. In houses where Cattleya Mossiæ, Lælia purpurata, or Odontoglossum vexillarium are flowering I would advise the damping of the floor and stages often on bright warm days, taking care not to let water fall on the flowers. Pleiones should be filling their pans with roots, and must be well supplied with water.

When potting Sobralias, it is best not to fill the pots to the rim, but space ought to be left, to allow of good soakings being afforded when necessary. Weak manure water given once a week will greatly assist these and Pleiones; a very weak solution of the same may be syringed round about plants of Dendrobiums that may have roots extending over the sides of pots and baskets. We find the syringe one of the most useful of implements for damping purposes during the hot weather; but it should not be used carelessly for syringing the Orchids themselves; for while there are some species that seem to enjoy a fine shower from the syringe overhead, there are others which are injured in their new growth, and such plants will dwindle instead of increasing in size. Most of the East Indian Cypripediums are kept in better health by allowing the pots to become filled with roots and then shifting them into larger pots; and I have discovered that C. Wallisii does best when kept somewhat pot-bound. *C. Woolford, Downside.*

TREES AND SHRUBS.

MAGNOLIA CAMPBELLII.

It is much to be regretted that there should exist two serious impediments to the successful cultivation of the above-named handsomest of all flowering trees known to temperate climates, as all must admit who have seen the splendid portrait of it given by Sir Joseph Hooker in his fine work on the trees and plants of the Sikkim Himalayan region. These impediments are, first, the extreme brittleness of its timber, which renders its main stem (even when of so considerable a size as between 40 and 50 feet in height) liable to be snapped in two by any violent gale of wind, even when in by no means a specially exposed situation, and when surrounded by high trees. This catastrophe happened this spring at Lakelands, near Cork, to Mr. Crawford's second largest specimen, when 36 feet of the main stem, carrying numerous flower-buds, was thus unfortunately broken off, to its owner's great grief. The second is, that from its time of flowering taking place at least six weeks too early for our uncertain climate, and before there is a vestige of foliage on the tree, the beautiful flowers, being unprotected by any calyx, are liable to get caught, and have their lovely roseate petals burned black by such late frosts, or a continuance of harsh easterly winds, as we have had this spring. I have recently been informed by Mr. Crawford that though his finest specimen has over 100 buds this spring, he fears that none of them will open for the above stated reasons. *W. E. Gumbleton.*

Fig. 127.—Narcissus triandrus var. cernuus. (p. 640.)

The Huntingdon Willow.

The timber of this tree we value highly, not only for its peculiar property of not splitting when put in use, but for the pretty wood graining and susceptibility of taking on a high polish. For bottoming stone-carts, barrows, sledges, &c., it has, we find, perhaps no equal in the range of British woods, the planks very rarely splitting off in flakes, or being affected by accidental shocks, but tearing or wearing away gradually and evenly. Not only is the timber valuable for its resistance to knocks and blows, but its lasting qualities, although rarely fully appreciated, are great indeed, and render it well fitted for the ordinary purposes of the builder. Again, the Huntingdon Willow is of the simplest culture, a bog or swamp, an unkindly loam, or a damp rilly gravel suiting it well; while as to rate of growth it must be admitted that during the first thirty years of its life few other trees can hold their own with it. Another advantage may be, perhaps, noticed; that is, that in planting the tree in question unrooted cuttings succeed admirably—indeed, in my own experience, they seem to succeed better, and grow more vigorously, during their early stages than do rooted plants. All that is necessary is to insert 6 feet long cuttings for 18 inches into the ground, and if the soil has been previously relieved of superabundant moisture, their growth will be rapid and strong. *A. D. Webster, Penrhyn Castle.*

FRUITS UNDER GLASS.

FIGS.

Trees bearing fruits that are ripe or nearly so should be ventilated freely during fine weather, and a warm drier atmosphere maintained, so as to ensure high flavour. As soon as the crop of fruit is gathered give the trees a good soaking of clear water at the roots, and a thorough syringing overhead with tepid water, keeping the house rather warmer and the atmosphere more moist, to encourage the succeeding crop to swell properly. The trees in succession-houses should have occasional waterings with tepid liquid manure at the roots if the soil be not rich enough; and should be syringed overhead morning and afternoon with tepid water. Pinch the points out of young shoots as soon as the latter have grown to about 18 inches long, so that the formation of young fruit may be encouraged, and the proper balance of growth maintained.

Peaches.

If it be desired, Peaches in the early house can be pushed on faster by closing the house early in the afternoon of bright sunny days, so as to run the temperature up to 90° or 95°, with plenty of atmospheric moisture, providing the trees are sufficiently moist at the roots, and that they are in a generally thriving state. The trees in succession-houses should also be syringed overhead morning and afternoon, and be kept well supplied with water at the roots. It will not be advisable to give liquid manure at the roots until the fruits have stoned, but after that critical period is over it may be applied copiously in a weak state, when water is considered necessary, with advantage to the trees. *H. W. Ward, Longford Castle.*

Wonderful Plants.—I recently came across the mention of two of these in an Arabic book (with an English version of the text as well as the original), printed in 1801, in which the following occurs:—1. A singular work by Ebu Tophail says: Our pious forefathers (may God reward them!) relate that there is an island among the islands of India which is under the equinoctial line; and this is an island in which there are born men without father and mother, and in which a tree bears women as fruit! 2. The fourth magician made a tree having branches of iron with hooks; and when a bad man approached it, these hooks seized him, and would not dismiss him till he confessed his crime.—I give you the English translation; the original is at your service for perusal. *N. E. D.*

PHILIP FROST.

Philip Frost, whose death on May 10, in his eighty-third year, it is our duty to chronicle, was, in more ways than one, a man of marked individuality. Physically, he was one of those "evergreens" that seemed almost to defy the assaults of time. Any time during the last quarter of a century he has been called "old Frost," but in some senses he seemed to us no older when we saw him last—only a few weeks since—than when we first made his acquaintance.

Robust in health, hearty in manner, as dogmatic in assertion as positive in his convictions, so devoted to his work and to the beloved trees he had planted, and over whose growth he had watched for so many years that he almost seemed part and parcel of them—Frost seemed as if he might have been "old Frost" for years to come. He was ever ready to pour out long stories of byegone days—ever eager to tell us what "my lady" said to him, and what he said to "my lady;" ever ready to detail the history of those noble trees for which Dropmore is so famous, and what means he adopted in planting them, and in subsequently caring for them. These trees can never be dissociated in the minds of the horticulturists from the name of Philip Frost. His career, as told in his own words, was uneventful enough; there was nothing thrilling or startling about it. By some men the life he led would be considered dull; but the strongly marked character of the man, and his intense love of his work, were quite incompatible with any feeling of monotony; and so to the last Frost maintained an amount of zeal and energy that a grandson might envy. We have mentioned the trees because they are the glory of Dropmore; but Frost was a good all-round gardener, taking justifiable pride in his kitchen garden, cultivating herbaceous plants well when other people had discarded them, and displaying characteristic originality in his selection and arrangement of bedding-plants in the flower garden.

Mr. Philip Frost, of Dropmore, was born at Moreton Hampstead, in Devonshire, on July 10, 1804. His father, who was a farmer's son, became in 1807-8 gamekeeper and park-keeper to Lord Grenville, at Boconnoc, in Cornwall, and about the year 1817 the son became employed, under the forester, Mr. William Pond, in the shrubberies, plantations, and nursery grounds, in the winter months planting on waste lands, in summer chiefly in the nursery, and in early autumn in the young plantations, clearing Brambles and removing superfluous leaders from young trees. What follows is from Frost's own pen:—

"On November 29, 1822," writes Mr. Frost, "I started from home for Dropmore, where I was first put in the flower garden, which was not then of so much note as it is now. I soon moved into the frame-ground, where I thought there was more to be learnt. In 1826 I left Dropmore and went to Colonel Howard's, Ashtead Park, near Epsom, under Mr. Hislop. Lady Grenville objected very much to my leaving, and desired me to write and state how I liked it. I found I was rated and treated as a common labourer, but I thought I deserved something better, and soon obeyed her ladyship's request, the result being an intimation to return to Dropmore immediately and resume my old place. In 1827 I was made foreman of the frame-ground, and at that time we had a vinery to force, which is still (1875) producing excellent crops. We had also Melon and Cucumber frames in very great extent, and it was a fight who should excel. The neighbourhood of Windsor stood prominent in Cucumber growing, and Gould, Weedon, Patrick, and many others strongly competed for the lead. In the year 1828 I wished to go, for improvement, into a kitchen garden, and accordingly left on March 20 for Caen Wood, making a sacrifice of 6s. per week by so doing. In a short time the foreman, John Milne (a nephew of Mr. Milne, of the Fulham Nurseries), left, and I was promoted to the position of foreman of Caen Wood garden. In June, 1829, I had the offer of a situation in Derbyshire, but went, in preference, to the Botanic Garden, Chelsea, as foreman under Mr. Anderson. I soon gained his confidence, and the improvement I made in the plants was noticed by Sweet, Haworth, and others, who were in the habit of visiting the garden. I raised a new stock from cuttings, which had not been done for years. In the autumn of 1832, Lord Grenville had reasons for dismissing Mr. Baillie, my old master, and told me that he would take me in preference to any one he knew. I must here add that Lord Grenville offered me a botanical work before I left in 1828, and accordingly gave me Sprengel's *System of Vegetables*, and Schultze's *Mantissa in Volumen Tertium, Sytematis Vegetabilium Caroli a Linnè*. I was much interested in English botany, and at that time knew most of the wild plants of this neighbourhood. Lord Grenville had each volume put in two parts, and bound, interleaved, with my name printed on the cover. I took charge of the garden here in January, 1833. In October, 1834, I planted the first trees here—fine Deodar Cedars. The largest is now 60 feet high, and measures in diameter of branches 52 feet, the girth of the trunk at

3 feet from the ground being 9 feet 7 inches. From a note of Lord Grenville's I learn that the seed of the finest Abies Douglasii was sent him in 1827, which settles a point I was not clear about. A gentleman from Whiteknights measured it a short time since and made it 106 feet high [124 feet in 1886]. The finest Araucaria is 60 feet high [63 feet in 1886]. There are three A. Douglasii plants from seed sent here from the Horticultural Society's garden; one has been cut down and there are now two growing, but the tree that had the most attention is a long way the finest—a proof the method of top-dressing I have adopted being beneficial. There has not been much glass erected since I have had charge—in fact only a range of Peach-houses, 150 feet long, which has produced magnificent fruit. There are two vineries, one here when I came, still going on, the other, planted in 1825, producing excellent fruit and splendid crops. The trees I have planted since 1833 will bear inspection, especially when the nature of the soil—a sterile gravel—is taken into account."

Our readers will remember that in December, 1872, the friends and admirers of Mr. Frost presented him with a handsome silver cup, of the value of £25, on which were engraved portraits of his two more remarkable nurselings—Araucaria imbricata and Abies Douglasii, together with an annuity purchased with the sum of about £200. [For an account of the Dropmore trees, see *Gardeners' Chronicle*, September 11, 1886. Ed.]

HOME CORRESPONDENCE.

CRINUM CAPENSE OR AMARYLLIS LONGIFLORA.—Although I am unable to agree with your correspondent, W. Nanscawen, who writes in such laudatory terms about the abovenamed Amaryllid on p. 554 of your last issue, as to either its beauty or desirableness—as I do not consider it worth either pot or house-room—I am at least able to partly answer the question he asks at the end of his communication, to the extent that this Crinum is one of the parents of the beautiful and free blooming hybrid raised by M. J. B. A. Deleuil, of Marseilles, France, and named by him C. revolutum, I fancy from its long twisted foliage, of which, unfortunately, the slugs are so fond that they will come almost from any distance to eat its leaves. *W. E. Gumbleton.*

RED-SPIDER ON VINES.—Mr. Douglas inquires at p. 620 if any correspondent can suggest a safe plan to destroy red-spider other than that he mentioned. In my opinion the sponging of the leaves with soft-soap and water is the most effectual and the safest way. The sponging should be carefully and thoroughly done, sponging the upper and lower surfaces of every Vine leaf in the vinery. All Beans and Strawberry plants should be removed from the vineries when such are grown there, as the dry atmosphere maintained whilst the Vines are flowering is almost certain to lead to the spread of spider from these to the Vines. The sponging process is somewhat tedious, but the result amply repays the labour thereby incurred. With regard to the practice of sulphuring the hot-water pipes Mr. Douglas says:—"It should be done when the temperature has been raised in the afternoon to 90°, and that the house ought to be shut up with this temperature, and that the pipes must be sufficiently heated to cause a slight mist in the house from the fumes." Is not afternoon a misprint for evening? I notice this because I fear that disastrous results would follow the action of the sun on the leaves and Grapes while in such an atmospheric temperature as that indicated above. Sulphur should be applied to the hot-water pipes in the evening only. No moisture should be distributed in the house that afternoon. The fire should be started early, so as to get the pipes well heated by the time the sun had gone completely off the houses, leaving air on till then, when the flowers of sulphur, at the thickness of paint, should be put on the heated pipes with a brush, keeping the temperature at between 85° and 90° for about three hours, at which time a little top air should be given, and the fire banked up. The house should be ventilated more freely than usual for two or three days afterwards However, I have a great objection to the red-spider "remedy" of painting the highly-heated hot-water pipes with flowers of sulphur, inasmuch as the fumes arising therefrom, in my opinion, destroys the freshness of both leaves and Grapes, and also leaves a musty, ungenial smell in the house for several weeks afterwards. *H. W. Ward.*

—— Your correspondent, Mr. Douglas, asks for remedies found serviceable in preventing the ravages of red-spider infesting Vines. I have found passing a soft dusting brush on the under side of the leaves with a little flowers of sulphur and water, to be efficacious — syringing the under sides of the leaves with clean, cold, soft water, taking care not to wet the Grapes, which can be easily done by a practised person using a syringe with a nozzle. The operation should be done about 6 o'clock in the evening, when it will act as a cold bath to the red-spider for the remainder of the night—a treatment which they dislike. When red-spider infest Vines badly it is the result of a dry ungenial atmosphere in the vinery. *R. Maher. Tattendon Court.*

A FROST REPORT.—The following figures show the amount of frost each month and the number of days on which frosts occurred. Commencing with November 8, 1886, there were seven occasions in that month with a total of 31°; in December there were twenty-two frosty days or nights, with a total of 201°; January figures with 183°, on twenty-one occasions; February with seventeen, and 134° of frost; March has the highest total, both as to the number of times that frost occurred and the aggregate of degrees being 204°, on twenty-five different days; in April there were fifteen frosts and 59°, and 9° on May 1. In spite of the length and severity of the winter and the prolongation of the cold season into the months usually recorded as spring, Apples, Pears

Plums, Strawberries, and bush fruits promise for an abundant crop. A fair crop of Apricots, Peaches, and Nectarines appears to be saved. In the vegetable garden Lettuce, Broccoli and Spinach suffered severely, the protection afforded by the snow for a long time being withdrawn plants were too tender to resist the subsequent cold winds and frosts. *J. Perkins, Thornham, Eye.*

SALE PRICES.—Many subscribers to the *Gardeners' Chronicle* besides myself look hopefully to your paper for some indications as to best disposal of garden produce, and naturally refer to the page of quotations of market values for guidance as to consignments. Here we get no satisfaction; English Asparagus is still quoted at 8*s.* a hundred. On the strength of these repeated quotations we consign to Covent Garden. Our agent returns us 2*s.* a hundred, and has never (in my case) returned more since the season commenced. Can you tell us by whom this 300 per cent. profit (difference between wholesale and retail price) is absorbed in Covent Garden Market? Must we patiently submit, without even a hope of our grievance being from time to time ventilated in our natural representative, the *Gardeners' Chronicle?* With Roses the case is even worse. Not a Maréchal Niel (so my friends say) is to be bought in the shops under 6*d.*, but our best return for fine buds is 1*s.* a dozen. *South-Eastern.*

RATING DEDUCTIONS.—"W. T." is informed that deductions of rates are made only in Local Board areas, and then only upon the sanitary or drainage rate. No deductions can be made in the case of poor's-rate, or of all rates collected by the overseers of a parish under the heading of poor's-rate, such as school-board, police, burial-board, free library, or even sanitary when outside of local board areas. In the latter case sanitary work means drainage for sewage purposes. In the case of local sanitary authorities, or, in other words, the guardians of the poor, the sanitary rate is applied solely for purposes of inspection, and dealing with cases of infectious diseases, &c. In local board areas drainage for sewage purposes is conducted for the benefit of buildings, hence open ground is exempt from the full charge, and is rated for such purposes, but for such solely, at one-fourth the ordinary, or poor's-rate assessment. In rural districts, viz., such as are outside of Local Board areas, assessment committees may materially relieve land by taking off 10, or even 20 per cent. from the assessment throughout the union, should they conclude that land is too highly burthened. *A. D.*

—— In answer to your correspondent's query *re* "Rating Case at Worthing" (see p. 621), this assessment does not relate to the poor-rates, but only to the sanitary rates under the Public Health Act of 1875. *H. B. P.*

AUBRIETIA DELTOIDES VIOLACEA.—This lovely plant is just now flowering in one of the cold pits at the Royal Horticultural Society's Garden, Chiswick. The large deep violet-purple blossoms with which the tufts are covered make a very effective and excellent subject for the rockery. *B.*

PROSPECTS IN THE FRUIT GARDENS ABOUT LONDON.—It is satisfactory to note that the severe winter through which we have passed has caused no damage to outside fruit, and that the outlook is promising. The bloom is of course late—quite a fortnight behind. Apples not yet out—plenty of bud. Pyramid Pears are beginning to get clothed with bloom, and present a pretty aspect in many gardens; Louise Bonne of Jersey is an especially early bloomer, and nearly always bears a full crop of fruit, quite, therefore, upsetting the notion which commonly prevails, that these early bloomers are liable to be materially affected by the "Frost King;" the explanation doubtless is, that the trees are in part furnished with foliage before harm by the frost can be done. Plums are fully in flower. The Peaches when in bloom were visited on one occasion by from 6° to 8° of frost." *Middlesex.*

HARDY BROCCOLI.—I am a little uncertain whether in his note on hardy Broccoli at Burghley (p. 616) Mr. Divers wishes to give the merit of being hardy to the kind referred to or to the mode of culture adopted. Seeing that vast quantities of white Broccoli in my own neighbourhood have stood well through the winter—and I may name Late White, Elletson's Mammoth, and Knight's Protecting, amongst others, as proving hardy—it does seem as if some other kinds besides "the Victoria, one of Mr. Gilbert's raising," were as worthy of culture. If ordinary kitchen garden soil is made too rich for Broccoli to withstand a hard winter, it is obvious that the fault may soon be cured without the aid of crowbars and Burghley cultivators, good enough in their way no doubt. Plant Broccolis to stand the winter a month later than usual, and in ground that is of moderate quality. Let the plants get well established and then tread the soil firmly; that will induce firmness of stem. It should be understood that the chief mischief was done to Broccoli by snow bearing down the large outer leaves, leaving the stems exposed where most tender to the frost, just above the snow line; the shorter the stems, therefore, the less the danger from frost. *A. D.*

DAFFODILS ROTTEN AND DECAYED: ITS CAUSE.—I am an ardent lover of Daffodils, and have been growing all the varieties for years, and in good quantity, and noticing what has been said about rot and decay in the bulbs before a recent meeting of the Narcissus Committee, I wish to give my experience. I attribute this decay and non-flowering to the injudicious selection of soil and high manuring, with bad drainage. Amateurs and others when they purchase new sorts of Potato often spoil them by over-kindness. It is just this kindness that destroys Daffodils—simply by the application of the wrong manure in overdose. All the sorts with me succeed and flower well under proper treatment. We must first study the habits of the bulbs prior to planting, and how they form their roots. Some varieties, as Trumpet, maximus, and the odorus section, all the Tazettas, have great fleshy roots, that get down deeply in the soil in search of nourishment, and the proportionate top-growth and size of bloom depend on whether at a great depth such roots are happy. I should say deep planting for maximus is best, provided the soil is equally so, and well drained. Mr. Burbidge, at Trinity College Gardens, Dublin, grows maximus to a great height, and plants deeply in rich well trenched soil; therefore the rule of deep planting depends on the habit of root formation, and the depth the roots can venture with safety. For instance, we have mountain Daffodils found at great altitudes, such as varieformis, pallidus præcox (the narrow-leaved form), nobilis, all the minor and nanus section; capax, if ever found wild, should be a mountain Daffodil, Rip van Winkle, &c.—all such are surface-feeders, or nearly so, putting out their thread-like roots horizontally from the base of the bulb, and naturally luxuriating in light gritty or turfy soil. To plant this section at more than 2 or 3 inches is certain death, particularly in heavy wet situations, and for the bulbs to come in contact with rank manure is sure destruction. Indeed, all wild collected Daffodils should be treated as infants, giving them milk at first, afterwards, by stages, weak solids, selecting such as prove fleshy root-formers for stronger soils, and treatment as to deeper planting. I attribute all this decay near London to the extreme cold of an English winter; the roots probably planted late, or the bulbs matured in a soil where rank cow manure may have been put out to enrich the crop the previous season. A great deal of the success in Daffodils depends on the locality from which you select your bulbs, and the amount of leaf-growth they make the season prior to your ordering them. I use nothing in conjunction with a trenched loamy field but some sea sand, and a slight top-dressing of fish potash manure applied in January, when the bulbs are above the soil; this gets washed down when the roots are active. It should be used in great moderation. *Cervantes.*

OXLIPS FROM CORK.—Mr. W. Baylor Hartland has just forwarded to me a box of trusses of scented Oxlips of excellent quality, that are fitted to take a high place among spring flowers. There are three yellow varieties; one, the deepest in colour, is called Hartland's William of Orange, which produces enormous heads of bloom of the richest golden-yellow, and most deliciously scented, and it is, no doubt, one of the largest and finest Oxlips in cultivation. Round the thrum-eye is a circle of deep orange-yellow. In point of quality this is a florist's Oxlip. Then there are two others, known as the Danesfort Golden Yellow and Sulphur Yellow; the former has the smallest flowers of the two; the colour pale yellow, with slight orange markings round the eye. It also is very sweetly perfumed and an early bloomer. The Danesfort Sulphur Yellow has large flowers of good form, but in common with those of the preceding they are pin-eyed, but they are produced in large bold trusses, and are exquisitely perfumed also. The fourth is a rich crimson variety, with a golden centre and lovely crimson flowers, stout, and of good form, but pin-eyed—still a very fine and striking variety. Were it not for the pin-eye it might be termed the crimson counterpart of William of Orange, as it is quite as finely perfumed. Mr. Hartland grows these Oxlips on a bank at Temple Hill, Cork, and he thinks that, fine as they are, they would be improved by the introduction of sea-sand and Irish manure. These fine Oxlips do not seed freely, but to make them more fertile than they naturally are it is necessary to fertilise the flowers with a brush. It is generally found that the hose-in-hose varieties of the Polyanthus and the Oxlip are very sparse seeders compared with the commoner types. *R. D.*

SOCIETIES.

ROYAL HORTICULTURAL.

May 10.—On this occasion the conservatory at South Kensington was gay with numerous Narcissi, Roses, Azalea mollis, Anemones, Tulips, species of Primula, beautifully flowered, and a variety of flowering plants from the open ground.

The most striking feature of the whole was that comprised in the collection of Cypripediums from the garden of Mr. Measures, Camberwell, who competed for the Veitch Memorial prize, a Gold Medal and £5.

In the fruit department the committee's labours were very light, a few samples of Grapes, a Melon or two, and varieties of Rhubarb from the Royal Horticultural Society's gardens at Chiswick, completing the exhibits.

Floral Committee.

Present: G. F. Wilson, Esq., F.R.S., in the chair; and Messrs. W. Wilks, J. Fraser, J. Douglas, A. Bennett, H. Herbst, J. Walker, A. Bradshaw, R. Dean, J. O'Brien, T. Baines, B. Wynne, C. Noble, J. Dominy, H. Ballantine, H. M. Pollett, C. Pilcher, A. F. Lendy, E. Hill, W. Holmes, G. Duffield, and Dr. M. T. Masters.

Veitch Memorial Prize.—For the best collection of Cypripediums only two competitors entered the lists, R. J, Measures. Esq., Cambridge Lodge, Flodden Road, Camberwell (gr. Mr. B. Simpson), and F. G. Tautz, Esq., Studley House, Shepherd's Bush. W. W. Measures' collection must be regarded as being a very large one for a private grower to exhibit, and exceedingly choice as regards the species and varieties. It was rich in varieties of C. barbatum, in improved forms of certain types, and in newly introduced species. A few of the plants were of specimen size, but the majority were small, as might be expected, from their rarity, Of C. barbatum were noted, nigrum, a strong plant—the rich red-purple of the lip well brought out—the sepals are green with a white edge, and suffused with pink; C. pulcherrimum is distinct from other forms of this section in being light coloured in all parts of the flower; C. giganteum is a larger variety, that retains the reddish lip of the type, but the stalk is 1½ foot in height. The C. insigne section was represented by C. i. sylhetensis. In this the lip is red-brown, dorsal sepals green, with brown spots and white tip: the flower-spike was small, like that of a weak or half-established plant. Many examples of C. niveum were observed, some few being quite destitute of spots. C. ciliolare was often repeated. C. Stonei was remarked as bearing a number of its well-developed singular flowers, the dorsal sepals being each of not less than 3 inches in length, the white ground sparsely striped with chocolate-brown. The petals were long, twisted, and narrow. C. Bullerianum was a small crippled looking flower, and the prevailing colour green, the flower-stalk dark brown and hairy. C. Dantieri has a glazed port-wine hue, and is mottled with a slightly darker one, only the dorsal sepal is edged with white. C. euryandrum has dark green foliage, a rich reddish-brown lip, the petals droop somewhat, and the dorsal sepals are white and green, striped with the lip colour. It is a distinct looking Cypripedium, and apparently of robust growth and continuous flowering habit. C. lævigatum was another species in which the petals droop and are narrow; the lip is yellowish-green, contrasting well with the chocolate-brown of the other parts. C. caudatum roseum has a pleasing light brown-coloured lip and sepals, the moustache-like petals falling to the length of 10 inches. A small plant of C. Argus was observed; and one of

C. A. Mossaicæ: in the latter the petals are longer, and tiped with rose, and the spotting of black-brown denser than in Argus. A fine plant of C. calurum superbum, with stout rosy-white flowers of the Sedeni form, was conspicuous by its colouring amongst the more sombre tints of the others: it is likewise of continuous flowering habit. A distinct effective form of C. Boxalli was seen in the variety atratum; the dorsal sepals having a rich black waxed appearance, and a wide margin of white, that is absent from C. Boxalli. C. c. Warscewiczi has dorsal sepals, together measuring 8 inches, of a pale fawn colour; the petals are 20 inches long, narrow, and brown in colour, as is also the lip, which has veins that are darker, and an interior of creamy-white. A small plant of C. Pearcei was distinct in foliage from all others, it being narrow and arching as in Pitcairnias; the lip is greenish outside and white within; the petals are narrow and the dorsal sepals 3 inches long. C. Curtisii has a dull brown lip, and pink points to the greenish petals. C. Harrisianum is a light brown-and-green-lipped variety, the dorsal sepals and petals white, with dark brown stripes; the whole flower has a varnished look. C. Robelini has a yellow lip, white dorsal sepals and twisted horizontally poised petals. A good many examples of C. Warneri were observed that seemed poor by comparison with the more modern hybrids and species. C. Haynaldianum is very distinct looking, the horizontally placed petals being oar-shaped, and at the tip for about an inch tinted with rosy-purple; C. Roezlii was shown as a large plant, or of several small ones placed together in a big pot. C. selligerum with rich coppery hues and remarkable waxiness of texture, as have also C. vernixum and C. Lowianum, which latter has much resemblance to Haynaldianum, complete our notices of the more marked examples observed. Small plants were there of C. Swanianum, C. Druryi, C. Hookeri, and C. supercilare.

F. G. Tautz, Esq., Studley House, Shepherd's Bush, competed with a small lot, including the beautiful C. Peteri given in our last issue; C. pubescens, and thirteen others, all of which are included in the list of Mr. Measures' plants.

De B. Crawshay, Esq., Rosefield, Sevenoaks (gr., Mr. Cooke), showed two plants of Odontoglossum crispum of great beauty, one of which was named Mrs. De B. Crawshay.

A beautiful yellow-flowered Odontoglossum Masereeli was shown by M. Masereel, Liège, the spike large, and flowers well-developed.

Messrs. Shuttleworth Carder & Co., 191, Park Road, Clapham, exhibited Odontoglossum Carderi, a plant with a spike of thirteen blossoms; colour pale yellow, the flower delicately fringed at the edges of the petals, and sparingly spotted with brown at the base.

Collections of Daffodils.—These occupied half the space available for the show, the largest group being that of Mr. T. S. Ware, Hale Farm Nurseries, Tottenham. Tulips, Anemones, and Fritillarias were interspersed throughout the Narcissi, of which some good varieties were shown, as N. incomparabilis Cynosure, Empress, poeticus in variety, especially N. p. poetarum, N. incomparabilis Bella, N. i. Glow, and N. Captain Nelson, a large trumpet yellow Daffodil, with twisted segments. Mr. Ware also contributed a group of miscellaneous plants in flower, including several varieties of Primula Sieboldi, P. farinosa, Ornithogalum arabicum, Darlingtonia californica, Amaryllis, Polemonium cœruleum Ranunculus amplexicaulis, Cypripedium montanum, &c. One Primula, viz., P. Sieboldi var. Ware's White, was very pretty, with its large pure white blooms; Fritillaria pallidiflora, with pale yellow flowers, was also well shown. (Silver-gilt Banksian Medal.)

Messrs. Barr & Son, King Street, Covent Garden, W.C., staged a large collection of Narcissi and Daffodils, each variety being represented by three bunches, and thus a good idea of the sort was given. The various forms of poeticus were well shown, and also N. incomparabilis Gloria Mundi, with full, flat, bright yellow segments, and wide corona of deep scarlet-orange; N. Captain Nelson, N. Bernardii, N. H. T. Buxton, N. incomparabilis, N. C. J. Backhouse, N. Barri conspicuus, N. Madame de Graaff, a large flower with white segments and pale yellow trumpet with reflexed margin, a hybrid from Emperor, the form of which it retains; from the same parent is N. Glory of Leyden, much the same colour as N. Emperor, but larger and more sturdy. (Silver Banksian.) An interesting group of these popular flowers also came from Messrs. Collins Bros. & Gabriel, 39, Waterloo Road, S.E.—N. Figaro, N. Empress, N. H. Irving, N. Orange Phœnix, N. Stella, &c., were specially observable. (Bronze Banksian.) Messrs. Krelage, of Haarlem, sent an interesting collection of Narcissi and Tulips.

Roses.—A great attraction in the show was the group of Roses from Messrs. W. Paul & Son, Waltham Cross, N., who sent some fifty plants of bush Roses in pots, and eight boxes of cut blooms. The plants were, in the majority of cases, well-flowered, and the individual blooms of good form. The following were the best:—M. Furtado, Celine Forestier, Magna Charta, Camoens, Maréchal Niel, Violette Bowyer, La France, Pride of Waltham, Duke of Albany, Madame Falcot, and Crown Prince. This exhibit fully merited its award of a Silver Banksian Medal. Four boxes of cut Roses were sent from Mr. W. Rumsey, Joynings Nursery, Waltham Cross, N., and several good varieties were successfully shown, all the blooms being excellent in form. Souvenir d'un Ami, Baroness Rothschild, Etienne Levet, were his best. (Bronze Banksian.)

Fig. 129.—Narcissus triandrus var. pulchellus. (see p. 640.)

Miscellaneous.—Several heavily flowered plants of Azalea pontica narcissiflora, a sort of hose-in-hose of pale lemon colour, and brilliantly coloured hybrids of A. mollis, were sent by Mr. Anthony Waterer, Knap Hill Nursery, Woking, Surrey. From this exhibitor came also plants of Cydonia japonica Simonii, which is very free in bearing its large crimson flowers. A chaste white spray of an improved Spiræa aruncus came from Mr. A. Moore, gr., Cranmore Hall, Shepton Mallet. Seedling Auriculas, abundantly flowered, and from the open air, were shown by Mr. G. Cragg, nurseryman, Crouch End. Some fine trusses of zonal Pelargoniums were sent from the Chilwell Nurseries by Messrs. Pearson & Sons; a good pink-coloured kind was observed in David Saunders. Mr. R. Dean contributed Polyanthuses and Primulas, the best being Polyanthus Buttercup, P. Crimson Beauty, that was certificated last year; P. Hose-in-Hose, and Primrose Golden Ball. Fine large Calceolaria blooms came from Mr. J. James, which gave one an idea of the beauty of the plants themselves. A new Regal Pelargonium, Pearl, a sport from Madame Thibaut, was shown by Mr. Miller, nurseryman, Shoreham and Brighton; it is free, and a pure white. Messrs. Todman & Son, nurserymen, Tooting, exhibited Rhododendron grandiflorum, a seedling from R. javanicum; the trusses, of six flowers each, were of a very rich golden-yellow, nicely contrasting with which are the scarlet anthers.

First-class Certificates.

To Mr. T. S. Ware, for Narcissus Captain Nelson.

To Mr. T. S. Ware, for Fritillaria pallidiflora.

To Mr. T. S. Ware, for Primula Sieboldi var. Ware's White.

To Messrs. Barr & Son, for Narcissus Captain Nelson.

To Messrs. Barr & Son, for Narcissus Gloria Mundi.

To Messrs. Barr & Son, for Narcissus Glory of Leyden.

To Messrs. Barr & Son, for Narcissus Madame De Graaf.

Fruit Committee.

Present: T. F. Rivers, Esq., in the chair; and Messrs. J. Lee, A. Sutton, T. B. Haywood, P. Crawley, W. Warren, G. T. Miles, J. Woodbridge, G. Norman, W. Paul, R. D. Blackmore, H. Veitch, J. Fitt, and J. Burnett.

The greatest interest here centered in the exhibit of Mr. Norman, Hatfield House Gardens, Herts, which consisted of a basket of Grapes, Lady Downes' Seedling, in excellent condition, not in the least shrivelled and retaining the bloom. It was stated that these bunches were thoroughly ripe in the last week of September, 1886. They had been kept wonderfully well. From W. F. Hume Dick, Esq., Thames Ditton House. Thames Ditton (gr., Mr. W. Palmer), came good bunches of Grape Black Hamburgh, in good condition, and also a seedling Melon. Mr. R. Parker, Impney Gardens, Droitwich, also sent a Melon.

Owing to pressure on our space the report of the meeting of the Scientific Committee of the Royal Horticultural Society is deferred till next week.

Narcissus Committee.

The last meeting of the committee for the season was held at South Kensington, on Tuesday, May 10. Among the specimens received were:—A seedling from Emperor, registered as Glory of Leyden; a seedling from Empress × Moschatus, registered as Madame de Graaff; and a variety of Tridymus, which the committee desired to see again—all from M. de Graaff; Tridymus, raised by Mr. Rawson, registered as A. Rawson; from Dr. Wallace a citron-coloured double form of Incomparabilis with the corona entirely suppressed, similar to what appears sometimes as a sport in Sulphureus plenus. It was doubted whether it would prove constant. In some cases only half the flower sports in this manner. Mr. Ware showed a flower somewhat similar to the above, together with a single form which had been cut from the same bulb of the variety known as Semi-partitus. Mr. Barr sent a flower, observed among collected bulbs of Moschatus, in which three of the anthers and stamens on one side were developed in the form of petal-like tubes.

A natural hybrid, a variety of Bernardi, was registered as H. P. Buxton, and Mr. Barr also showed a collection of Triandrus, illustrating the great variation in form. It was thought desirable to register the variety which had been known as Burbidgei conspicuus under the name Constance, in order to avoid the confusion which might arise between it and the variety of Barri called Conspicuous; as also, in order to carry out the principle of naming all garden forms and hybrids in the manner adopted by florists, and not in the manner adopted by botanists. *C. R. Scrase Dickens, Hon. Sec.*

BATH FLORAL FÊTE.

May 11.—The spring show—one promoted by the committee which carries out this series of exhibitions—was held on the above date in the Sydney Gardens, and it was said by competent authorities to be one of the best ever held in Bath. Orchids were a feature of great excellence. The Azaleas were a striking feature, recalling the "elephants," so called, of twenty years ago; and the stove and greenhouse plants were,

on the whole, fresh, and well grown, and flowered. The exhibits were distributed in four tents.

Orchids.—The best six specimens came from the Rev. E. Handley, Bath (gr., Mr. S. Kerslake), who had very fine and admirably grown and flowered specimens of Cattleya Mossiæ, with fifteen flowers; a very fine form of C. Skinneri, Aërides Fieldingii, with six spikes; Lælia purpurata, Miltonia vexillaria, and Vanda suavis. 2d, Messrs. Heath & Son, nurserymen, Cheltenham, who had made-up specimens of Odontoglossum Pescatorei, O. Roezlii, Lælia purpurata, Dendrobium nobile, Cattleya Mossiæ superba, and Oncidium sphaceolatum; 3d, Mr. James Cypher, Cheltenham. The Rev. W. Handley also had the best specimen, staging a fine Lælia purpurata; Mr. Cypher being 2d, with Cattleya intermedia. Mr. Handley had the best four in the amateur's division, showing Cattleya Mossiæ, Odontoglossum Roezli album, Cypripedium Lawrenceanum, and Vanda suavis; and the best specimens also in Oncidium ampliatum majus; Mr. Gouldsworth being 2d, with Aërides crispum. Prizes were also offered for a group of Orchids, and here the Rev. Mr. Handley was again 1st, Messrs. Heath & Son being 2d, and R. B. Cator, Esq., Bath (gr., Mr. F. W. Fisher), 3d. These made an excellent feature, being nice small plants, arranged with Ferns, &c.

Stove and Greenhouse Plants.—Here Mr. Cypher was to the fore with twelve specimens, very fresh and bright, consisting of several Ericas, Anthurium Scherzerianum, Dracophyllum gracile, Pimelea Hendersoni, Azaleas, Darwinia tulipifera, &c.; 2d, Mr. Henry James, Lower Norwood, with a very good lot. The best six came from E. E. Bryant, Esq., Lansdown (gr., Mr. W. J. Mould), a very fair group. Mr. Cypher had the best single specimen, staging a fine plant of Pimelea splendens rosea. Azaleas made a fine show. Mr. C. Gardiner had the best twelve, having very finely flowered specimens. Mrs. Turner was 2d, with plants of very fine bloom. The best four plants of Ericas came from Mr. J. Cypher, who had good examples of Cavendishiana, Victoria Regina, ventricosa coccinea minor, and aristata major: Mr. H. James coming in 2d.

Roses in pots.—These are always a good feature at Bath, and here the Rev. E. Handley scored a further triumph, being 1st with nine good plants of leading varieties. R. P. Cator, Esq., being 2d; S. P. Budd, Esq., a well known Bath amateur, was 1st with six plants; F. J. Walker, Esq. (Mr. A. Southgate, gr.), being 2d.

Pelargoniums were on the whole well shown, as it has been a trying time for exhibitors, the daily changes of temperature having been so great. Mr. Tucker had the best nine plants; Mr. W. F. Biggs being 2d. With six plants, even, fresh, and nicely flowered, Mr. J. Cypher was 1st, and Mr. A. A. Walters, nurseryman, Bath, 2d. Lady Isabel, a pretty pale purple variety, should be noted as an excellent exhibition specimen.

As might be expected, Calceolarias and Cinerarias made charming patches of colour. Mr. Robinson, gr. to Lord Justice Lopes, Westbury, had the best nine of the former; Mr. Marchat, gr. to the Mayor of Bath, being 2d. W. Pumphrey, Esq., Bath (gr., Mr. J. T. Tate), had the best six Cinerarias; and was followed by S. Tredwell, Esq. (gr., Mr. W. Cole).

Foliage Plants.—Groups of fifteen ornamental foliaged plants were an imposing feature, Mr. Cypher and Mr. James showing in fine form. Mr. Cypher was 1st with large and well-developed specimens of Kentia Fosteriana, K. australis, Seaforthia elegans, Cycas Normanbyana, a very striking plant; Encephalartos villosus, and Crotons. Mr. James had Areca frutescens, Latania borbonica, Thrinax argentea, Kentia Sanderiana, Cycas revoluta, &c.

Miscellaneous Collections.—Foremost among these were a group of Orchids and other plants, and some splendid blooms of Maréchal Niel Roses, from Messrs. G. Cooling & Son, nurserymen, Bath; a group of Orchids from Mr. J. Cypher; a charming collection of Japanese Maples and other choice plants, from Mr. R. T. Veitch, nurseryman, Exeter; and a pretty group also from Mr. A. A. Walters. All these were awarded Certificates of Merit.

Cut Flowers.—These included some excellent Roses, and in the large class for twenty-four blooms Messrs. George Cooling & Sons, Bath, were 1st, with a very fine lot; Mr. W. H. Kettewell being 2d. With twelve blooms Mr. S. P. Budd was 1st; he also had the best six. Pansies were a fine feature, the rich fancy varieties being seen to the best advantage. Mr. W. Meddick, a noted Bath grower, was 1st, with twenty-four and twelve blooms also. The best twenty-four bunches of cut flowers came from H. C. Miles, Esq. (gr., Mr. F. Perry), who had a very fine lot, Orchids being a leading feature. There was but one bouquet, and the only exhibitor of an epergne was Mr. J. Cypher, whose exhibit was good. Mr. E. J. Lowe, Swansea, was awarded a Certificate of Merit for hybrid Primroses.

Fruit.—This consisted of Strawberries in pots, and also as single dishes, James Veitch figuring well in the latter class. Apples were in a capital state of preservation; and Mr. J. Haylor's dish of Beurré Rance Pear had been admirably kept.

Vegetables were largely shown, and of excellent quality. The best collection of nine varieties came from Mr. Thos. Every, Batheaston. Mr. George Garraway, Bath, had the best six dishes. Cucumbers, Mushrooms, French Beans, &c., together with the cottagers' vegetables, were extremely good.

THE HARDY FRUIT GARDEN.

GENERAL REMARKS.

The heavy rainfall experienced of late has been beneficial in starting all fruit trees into active growth. The sharp frosts we have in this part experienced at night have not, I find, on careful examination, done any large amount of damage to blossoms of fruit trees on walls. There will now be no further necessity for watering fruit trees for at least another month, the ground having now had a thorough soaking of rain. Advantage should be taken of the moist condition of the ground to throw out and finish any of the alleys, dividing the fruit tree border from the vegetable quarter, which will assist to give the garden a neat appearance.

Strawberries.

Those plants that have had old lights placed over them for an early supply, should either receive an occasional watering, or, better still, have the lights removed when rain seems imminent, so that the plants can receive the benefit of the same; and the lights be again replaced before nightfall. Forced plants of Strawberries, if desired, may still be preserved for later fruiting, and with a little attention in hardening off and watering may be kept in good health till planted out, if planting cannot be done at once. These forced plants will prove more satisfactory for autumn fruiting than younger plants, which seldom fruit well the next season after planting. Where Strawberries have been mulched early in the season, as previously advised, an improved appearance will now be observed, growth being very active and bloom-spikes showing strongly. *E. Ward, Hewell Grange.*

LAW NOTES.

MRS. FLORA CAMPBELL *v.* THE CALEDONIAN RAILWAY COMPANY.

This has been a rather complicated and generally interesting case. The late husband of Flora Campbell leased from Mr. Duncan Darroch about 9 acres of ground, the first lease of which expired at Martinmas, 1874. A second lease was drafted for nineteen years from that date, but was not executed—that is, it was not signed by either of the parties. It was, however, in a sense acted upon, and was not disputed until the Caledonian Railway Company obtained an Act of Parliament acquiring the necessary lands for extending their railway from Greenock to Gourock. In the course of their line they cut through the market garden of Mrs. Flora Campbell, taking 1 acre 3 roods 14 poles, and it came to be a question whether they were liable to pay from the date of taking over the ground for one year's crop and profits or for the termination of the drafted but unexecuted lease. It was agreed by both parties to submit the legal part of the question to the arbitrament of Professor Roberton, of Glasgow, who pronounced his decree arbitral on February 25 last, as follows:—That "the claimant was entitled to possess the subjects contained in the said notice to treat as at the date thereof as a lessee holding under a nineteen years' lease, as from Martinmas, 1874, subject to certain powers of resumption by the landlord, which powers, however, have not been exercised in so far as the ground taken from the claimant by the railway company in virtue of their statutory powers in terms of said notice to treat."

Then came the question as to the claim itself, and it was resolved that Mr. James Anderson, Meadowbank, should be arbiter for the Caledonian Railway Company, and Mr. John Williamson, Bishopton, for the claimant, with Professor Roberton practically as oversman in the reference. Under the resumption clauses the proprietor had power "to convey to public companies or feu ground at any time" under the currency of the lease without other compensation than a nominal advance on the rebate of rent. The question which had to be settled therefore before the arbiters could proceed was whether the railway company were entitled to assume the power of the landlord, and step, as it were, into his shoes so far as the resumption clauses were concerned. After a lengthened debate from the agents of both parties Professor Roberton held the company were not so entitled, founding his decision upon what he considered a less strong case in the Solway Railway (Solway Railway Company *v.* Jackson, March, 1874) passing through a clay field, where the Judges of Court of Session unanimously pronounced against the railway company. The ground being thus cleared. The arbiters proceeded with the question of compensation. The claim was roughly as follows:—

	£	s.	d.
1. As to value of plants in the ground taken and for tenant's profits, for damage by severance and general readjustment	1450	0	0
2. Value of buildings used as a store	45	0	0
3. Value of manure	18	0	0
4. Claim for connecting ground by bridge	175	0	0
5. Loss for want of fencing while operations were going on	5	0	0
6. Loss through well being drained by cutting operations...	20	0	0
7. Loss of shrubs, &c., outside of ground taken ...	45	5	0
In all...	£1758	5	0

The arbiters, after taking evidence of witnesses, decided as follows:—

	£	s.	d.
To compensation for plants taken	189	16	0
,, Tenant's profits for nine years—remainder of lease	283	10	0
,, Value of buildings as store	17	10	0
,, Value of manure	6	0	0
,, Severance damage	75	0	0
,, Readjustment of roads	45	0	0
,, Damage for want of fencing	2	0	0
,, Loss of well	10	0	0
,, Loss of plants through cutting operations ...	16	10	0
,, Unexhausted manure	5	0	0
In all	£650	6	0

These proposed findings having been submitted to the parties, their agents claim to be heard orally before the arbiters prior to the award being declared final, and a day has been fixed for that purpose. *J. A.*

THE WEATHER.

THE PAST WEEK.

The following summary record of the weather for the week ending May 9, is furnished from the Meteorological Office:—

"The *weather* continued cold and rather unsettled during the earlier part of the period, but subsequently the conditions improved, and fine, bright weather prevailed in nearly all parts of the kingdom.

"The *temperature* has been 1° above the mean in 'Scotland, W.,' but in other districts it has varied from 1° to 3° below, or just equalled its normal value. The highest of the maxima, which were recorded on the 8th, ranged from 60° to 67° in Scotland, 66° to 67° in Ireland, and from 67° to 73° in England. In the Channel Islands the highest reading was only 59°. The lowest of the minima, which were recorded on irregular dates, varied from

29° in 'Scotland, N.' and 'Scotland, E.,' to 38° in 'England, E.,' and the 'Channel Islands,' and 40° in 'England, S.' Several ground frosts occurred at stations inland.

"The *rainfall* has been rather more than the mean in 'Scotland, N.' and 'England, E.,' but less in all other districts.

"*Bright sunshine* has been less prevalent generally than it was last week, the percentage of the possible amount of duration ranging from 19 to 34 in 'England,' from 31 to 37 in 'Scotland,' and 39 to 43 in 'Ireland;' in the 'Channel Islands' 48 per cent. was recorded.

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 32° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature.				
		Accumulated.			
	Above or below the Mean for the week ending May 9.	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 4, 1887.	Below 42° difference from Mean since Jan. 4, 1887.
Principal Wheat-producing Districts.		Day-deg.	Day-deg.	Day-deg.	Day-deg.
0. Scotland, N. ...	0 (aver.)	38	7	+ 39	+ 45
1. Scotland, E. ...	0 (aver.)	50	11	+ 56	+ 46
2. England, N.E. ...	1 below	40	2	— 3	+ 89
3. England, E. ...	2 below	50	1	— 88	+ 168
4. Midland Cos. ...	2 below	50	2	— 78	+ 173
5. England, S. ...	1 below	60	0	— 83	+ 155
Principal Grazing, &c., Districts.					
6. Scotland, W. ...	1 above	48	1	— 20	+ 51
7. England, N.W. ...	3 below	42	2	— 67	+ 121
8. England, S.W. ...	3 below	46	0	— 91	+ 175
9. Ireland, N. ...	0 (aver).	53	0	+ 9	+ 27
10. Ireland, S. ...	1 below	57	0	— 29	+ 101
— Channel Islands	2 below	53	0	— 151	+ 77

Districts.	Rainfall.			Bright Sunshine.	
	More or less than the Mean for the Week.	No. of Rainy Days since Jan. 4, 1887.	Total Fall since Jan. 4, 1887.	Percentage of possible duration for the Week.	Percentage of possible Duration since Jan. 4, 1887.
Principal Wheat-producing Districts.	Tenths of Inch.		Ins.		
0. Scotland, N. ...	1 more	79	14.9	31	23
1. Scotland, E. ...	4 less	57	6.9	37	32
2. England, N.E. ...	4 less	55	4.9	19	32
3. England, E. ...	3 more	50	5.6	26	36
4. Midland Cos. ...	2 less	47	5.6	27	31
5. England, S. ...	1 less	49	6.0	33	33
Principal Grazing, &c., Districts.					
6. Scotland, W. ...	5 less	63	12.7	34	32
7. England, N.W. ...	3 less	51	7.3	34	33
8. England, S.W. ...	3 less	53	7.4	34	41
9. Ireland, N. ...	3 less	60	9.1	39	33
10. Ireland, S. ...	3 less	53	9.4	43	41
— Channel Islands	2 less	59	6.6	48	46

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING MAY 21. (AVERAGE OF THIRTY-THREE YEARS.)

May 15	54°.3	May 19	55°.4
,, 16	54°.6	,, 20	55°.5
,, 17	54°.8	,, 21	55°.9
,, 18	55°.1	Mean for the week ...	55°.1

Notices to Correspondents.

*** Correspondents will greatly oblige by sending early intelligence of local events likely to be of interest to our readers, or which it is desirable to bring under the notice of horticulturists.

Intelligent Readers, do please Note *that letters relating to* Advertisements, *or to the supply of the Paper, should be addressed to the* Publisher, and that all communications intended for publication should be addressed to the Editor. Such communications should be *written on one side only of the paper*, and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Box Diseased: *S. F.* It is a fungus, Puccinia buxi, described and figured in *Gardeners' Chronicle*, April 21, 1883, p. 509.

Correction.—In our last issue, p. 614, second col., first par., for green maccroides read gum accroides.

Chrysanthemum: *J. H.* A species of leaf-miner. Cut off all foliage attacked and burn it.

Crickets and Woodlice in Melon Pits: *A. H. C.* Boiling water poured into all chinks and crevices will destroy them if persevered in. Crickets, like ants, are fond of treacle, and may be lured into it, when they then become unable to run away, and may be caught easily. For the other pests, place about the pit, pots stuffed with hay; into these the insects will run in the daytime, or when disturbed at night. Burn the hay daily in the boiler fire and replenish. Keep a number of toads in the pits; they are useful in keeping woodlice in check.

Cucumber: *Houndswood.* The trouble lies at the root of the plants, there are no insects on the foliage sent, but the plants from which it was taken are suffering from "gumming." Clear all out of the pit and make a fresh start.

Diseased Tomatos: *G. M.* Your plants have the ordinary disease of the Tomato, Peronospora infestans, identical with that which attacks the Potato. As the germs of disease are within the plants themselves, you can do nothing to cure it. Destroy by burning all the plants.

Grapes: *A. M.* The bunches are badly shanked. There is no known cure for it, but it is rarely seen on Vines under good management; so that it would seem to point to a weakness in the plants attacked by it. When the Vines carry thick, large foliage, and the wood and roots grow in unison, and the former ripens thoroughly, there is rarely any shanking found, unless it be induced by too much thinning of the shoots and foliage, or a too heavy crop. The berries sent were much rusted. pointing to careless ventilation, or the abuse of sulphur.

Names of Plants: *J. Spall.* Fourcroya Bedinghausii—we think this the first time of flowering in England. Yucca Parmentieri is a synonym. —*H. H. d'O.* Tulipa Eichleri, Regel, *Bot. Mag.*, t. 6191, native of Caucasus.—*J. R.* The much branched spike is Odontoglossum Andersonianum. The two varieties of O. triumphans are both good. 3, O. odoratum, not gloriosum.—*E. A.* A double form of Narcissus incomparabilis, commonly called Butter-and-eggs.—*W. P.* Fritillaria Meleagris. Is it a wild plant in your neighbourhood? — *J. B. R.* Hovea Celsi.—*J. W. S.* 1, Probably Cymbidium pendulum; 2, probably C. aloefolia; 3, Habenaria, sp.; 4, insufficient specimen.—*J. R. P. & S.* Odontoglossum triumphans.—*G. K. G.* Amelanchier canadensis (the snowy Medlar-planted, not British).

Narcissus: *H. Elliott.* N. tazetta very like N. Panizzianus of the South of France.

Peaches with Minute Brown Spots on Fruit and Foliage: *A. B.* The roots are healthy, and possess plenty of fibrils; there is nothing in them that will account for the appearances noticed, which are those often observed where scalding of leaves and fruit is occasioned by errors in ventilating whilst these are wet from syringing. Your management seems to be quite correct in other respects.

Seedling Potato × Scotch Champion and Magnum Bonum: *T. Laxton.* This variety with careful boiling cooked mealy, and was good flavoured, the flesh being pale yellow in colour. It would probably steam best.

Vines: *A. W.* Your leaves are covered with warts generally, the result of insufficient ventilation and too close an atmosphere.—*A. B.* The leaves sent have been attacked by thrips or red-spider, or both.

CATALOGUES RECEIVED.

J. Carter & Co., 237 and 238, High Holborn, London, W.C.—Supplementary Catalogue.

Thos. Kennedy & Co., Dumfries, N.B.—Florists' Flowers, &c.

Clark Brothers & Co., 65, Scotch Street, Carlisle —Florists' Flowers, &c.

Communications Received.—D. M.—J. T. B.—J. N.—A. H. S.—E. M.—M. Cornu.—T. McP.—G. T. M. (with thanks).—P. H. G.—H. T.—D. F. G. I.—Professor Henriques. —F. S.—Our Dresden Correspondent.—Linnean Society.—F. W. B.—Dr. Bonavia.—D. M. (with many thanks).—J. T. B.—J. R.—J. M., New Jersey.—A. S.—J. W.—E. W.—W. E.—W. C.—A. D.—J. D.—R. D.—N. E. B.—W. G. S.—F. S.—H. W. W.—J. G. B.—J. W. T.—A. L. L.—E. J.—Shirley Hibberd.—Sutton & Sons,—Clark Bros.—W. B.—W. C. & S.—C. M. O.—C. T. (next week).—D. H. (next week).

Markets.

COVENT GARDEN, May 12.

[The subjoined reports are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list weekly, and are responsible for the quotations. It must be remembered that these quotations are averages for the week preceding the date of our report. The prices fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the prices at any particular date, still less can they be taken as guides to the price in the coming week. Ed.]

The late fine weather has brought large supplies of indoor produce to our market, and prices are lower all round. Large quantities of Strawberries, morning gathered, are now to hand from the neighbourhood, consequently samples from a distance meet with little demand. Business steady. *James Webber, Wholesale Apple Market.*

Fruit.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Apple, ½-sieve	1 6– 5 0	Peaches, dozen ...	15 0–21 0
— Nova Scotia, brl.	8 0–12 0	Pears, per dozen ...	2 0– 4 0
Grapes, new, per lb.	4 0– 6 0	Pine-apples, Eng., lb.	1 0– 1 6
Kent Cobs, 100 lb. ...	60 0– ...	— St. Michael. each	1 6– 6 0
Lemons, per case ...	12 0–21 0	Strawberries, per lb.	3 0– 6 0
Melons, each ...	5 0– 6 0		

Vegetables—Average Retail Prices.

	s. d. s. d.		s. d. s. d.
Artichokes, per doz. ...	4 0– ...	Lettuce, Cos., Fr., each ...	0 6– ...
Asparagus, French, per bundle ...	2 0– 6 0	Mushrooms, punnet	1 6– 2 0
— English, per 100	5 0– ...	Mustard and Cress, punnet ...	0 4– ...
Beans, Kidney, lb. ...	2 0– ...	Onions, per bushel ...	4 0– ...
Beet, red, per dozen	1 0– 2 0	Parsley, per bunch ...	0 6– ...
Carrots, per bunch ...	0 6– ...	Peas, per quart ...	4 0– ...
Cauliflowers, per dozen ...	3 0– ...	Potatos, per cwt. ...	4 0– 5 0
Celery, per bundle ...	1 6– 2 0	,, kidney, per cwt.	4 0– 5 0
Cucumbers, each ...	0 6– 1 0	Rhubarb, per bundle	0 6– ...
Endive, per dozen ...	3 0– ...	Seakale, per punnet	2 6– ...
Green Mint, bunch ...	0 6– ...	Shallots, per lb. ...	0 3– ...
Herbs, per bunch ...	0 4– ...	Spinach, per bushel ...	4 0– ...
Leeks, per bunch ...	0 3– ...	Sprue, bundle ...	1 0– ...
Lettuce, per dozen ...	1 6– 2 0	Tomatos, per lb. ...	2 6– ...
		Turnips, new, bunch	1 0– ...

Potatos.—Markets very heavy, at the following prices:—Regents, 90*s.* to 110*s.*; Magnums, 80*s.* to 120*s.* per ton.

Plants in Pots.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz.	6 0–18 0	Foliage plants, various, each ...	2 0–10 0
Arum Lilies, dozen ...	9 0–12 0	Fuchsias, doz. ...	6 0–12 0
Azaleas, per dozen ...	24 0–42 0	Genistas, per doz. ...	6 0– 9 0
Cinerarias, per doz. ...	6 0– 9 0	Hydrangeas, doz. ...	9 0–12 0
Cyclamens, dozen ...	9 0–12 0	Lilium longiflorum, per dozen ...	24 0–36 0
Cyperus, per dozen .	4 0–12 0	Lily-of-Val., 12 pots	12 0–18 0
Dracæna terminalis, per dozen ...	30 0–60 0	Marguerite Daisy, per dozen ...	6 0–12 0
— viridis, per doz.	9 0–24 0	Mignonette, doz. ...	6 0– 9 0
Erica, various, per dozen ...	18 0–42 0	Myrtles, per dozen ...	6 0–12 0
Euonymus, in var., per dozen ...	6 0–18 0	Palms, in var., each	2 6–21 0
Evergreens, in var., per dozen ...	6 0–24 0	Pelargoniums, dozen	9 0–18 0
Fairy Roses, doz. ...	8 0–12 0	— scarlet, per doz.	4 0– 8 0
Ferns, in variety, per dozen ...	4 0–18 0	Rhodanthe, dozen ...	6 0– 9 0
Ficus elastica, each .	1 6– 7 0	Roses, various, doz. ...	18 0–30 0
		Solanums, per dozen	9 0–12 0
		Spiræa, per dozen ...	9 0–12 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Abutilons, 12 bun ...	2 0– 4 0	Marguerites, per 12 bunches	3 0– 6 0
Anemone, 12 bun. ...	2 0– 4 0	Mignonette, 12 bun.	3 0– 6 0
Arum Lilies, 12 blms.	3 0– 5 0	Pelargoniums, scarlet, 12 sprays ...	0 4– 0 9
Azaleas, 12 sprays ...	0 6– 0 9	Primroses, 12 bun....	0 6– 1 0
Bouvardias, per bun.	0 6– 1 0	Primulas, double, 12 sprays	0 9– 1 0
Camellias, 12 blooms	1 0– 3 0	Roses, Tea, per doz.	1 0– 2 0
Carnations, 12 blms.	1 0– 3 0	— coloured, dozen.	3 0– 6 0
Cyclamen, 12 blooms	0 4– 0 6	— red, French, doz.	1 6– 2 0
Daffodils, single, 12 bunches	1 0– 2 0	— Saffrano, dozen...	1 0– 1 6
— double, 12 bun.	1 6– 3 0	Spiræa, 12 bunches..	6 0– 9 0
Eucharis, per dozen	4 0– 6 0	Tropæolums, 12 bun.	1 0– 2 0
Gardenias. 12 blooms	1 6– 3 0	Tulips, 12 bunches ...	4 0– 6 0
Heliotropes, 12 spr.	0 6– 1 0	Tuberoses, 12 blms....	1 0– ...
Hyacinths (in boxes from Holland), box	0 9– 2 0	Violets, 12 bunches...	0 4– 0 9
Jasmine, white, bun.	0 6– 0 9	— Parme, French, per bunch	2 0– 3 0
Lilies of the Valley, 12 sprays	0 6– 1 6	— Czar, Fr., bunch	0 9– ...
Lilium longiflorum, 12 blooms	4 0– 6 0	Wallflowers, 12 bun.	3 0– 6 0

SEEDS.

LONDON: *May* 11.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., report to-day's market thinly attended with not much business doing. Occasional orders for Clover seeds, &c., still come to hand, but the season must now be considered as over. All round quotations remain at a remarkably low level. For red Clover seed there is some inquiry for holding over, the article having become scarcer. Hemp seed is now abnormally cheap. The sale for Tares is diminishing. More attention is now devoted to blue Peas. Rape seed well sustains the late advance. There is an increasing demand for Mustard. Feeding Linseed is steady.

CORN.

Averages.—Official statement showing the average price of British corn, imperial measure, in the week ended May 7:—Wheat, 33*s.* 2*d.*; Barley, 23*s.* 2*d.*; Oats, 16*s.* 6*d.* For the corresponding week in 1886:—Wheat, 31*s.* 5*d.*; Barley, 25*s.* 10*d.*; Oats, 23*s.* 2*d.*

FRUIT AND VEGETABLES.

COLUMBIA (EAST LONDON): *May* 11.—Good supplies of all kinds of vegetables, Potatos, &c., with a moderate demand. Fruit trade languid. Quotations:—Apples, 12*s.* to 24*s.* per barrel; Cabbages, 5*s.* to 7*s.* per tally; Cauliflowers, 5*s.* to 9*s.* do.; Spinach, 2*s.* 6*d.* to 3*s.* per sieve; Sprouting Broccoli, 2*s.* to 2*s.* 6*d.* do.; Turnip-tops, 2*s.* 6*d.* to 3*s.* 6*d.* per sack; Greens, 2*s.* 6*d.* to 3*s.* per dozen bunches; spring Onions, 2*s.* 6*d.* to 3*s.* 6*d.* per dozen bunches; Rhubarb, 1*s.* 6*d.* to 2*s.* per dozen bundles; Onions (English), 5*s.* to 6*s.* per cwt.; foreign do., 3*s.* 6*d.* to 4*s.* 6*d.* per bag.; Carrots, 16*s.* to 24*s.* per ton; Mangels, 10*s.* to 12*s.* 6*d.* do.

STRATFORD: *May* 10.—Supplies have been good, and a fair trade was transacted at the following prices:—Cauliflowers, 1*s.* to 1*s.* 6*d.* per dozen; Carrots, household, 24*s.* to 30*s.* per ton; do., cattle feeding, 18*s.* to 20*s.* do.; Parsnips, 6*d.* to 9*d.* per score; mangels, 11*s.* to 16*s.* 6*d.* per ton; Onions, English, 100*s.* to 120*s.* per ton; do., Dutch, 3*s.* to 4*s.* per bag; do. do., 3*s.* to 4*s.* per dozen bundles; Watercress, 6*d.* per dozen; Rhubarb, 1*s.* to 1*s.* 6*d.* per dozen bundles; Spinach, 2*s.* 3*d.* to 2*s.* 6*d.* per bushel.

POTATOS.

BOROUGH AND SPITALFIELDS: *May* 10.—Supplies are decreasing, and the market is generally firm. Quotations:—Regents, 80*s.* to 120*s.*; Magnum Bonums, 75*s.* to 140*s.*; Champions, 70*s.* to 90*s.* per ton.

COLUMBIA (EAST LONDON): *May* 11.—Quotations: Scotch Regents, 75*s.* to 120*s.*; do. Magnums, 60*s.* to 130*s.*; do. Victorias, 80*s.* to 90*s.*; do. Champions, 55*s.* to 70*s.*; York and Lincoln Regents, 60*s.* to 80*s.*; do. Magnums, 60*s.* to 80*s.*; do. Champions, 65*s.* to 85*s.*; Kent and Surrey Regents, 65*s.* to 80*s.*; do. Magnums, 60*s.* to 70*s.*; do. Champions, 65*s.* to 85*s.*; Cambridgeshire Regents, 55*s.* to 75*s.*; do. Magnums, 60*s.* to 80*s.*; do. Champions, 55*s.* to 70*s.* per ton.

HAY.

Averages.—The following are the averages of the prices obtained at the various Metropolitan markets during the past week:—Clover, prime, 88*s.* to 100*s.*; inferior, 70*s.* to 84*s.*; hay, prime, 70*s.* to 92*s.* 6*d.*; inferior, 45*s.* to 80*s.*; and straw, 30*s.* to 45*s.* per load.

STANDEN'S MANURE

Established 20 *Years.*

THIS OLD-ESTABLISHED MANURE is acknowledged by the leading practical Gardeners in the United Kingdom and the Colonies to exceed all others in general fertilising properties and staying powers. It promotes a rapid, healthy, and robust growth to plants generally. *For Vines* it cannot be too highly recommended, and this fact is fully sustained from the result obtained by its use in the hands of some of the most successful Grape growers. It is a clean and dry Powder, with very little smell, which renders it particularly adaptable for ladies interested in plant culture.

The highly fertilising properties of this Manure render its money value in comparison with other manures at least double; and users will find that very small quantities will produce favourable results.

Sold in new and enlarged Tins, 1/-, 2/6, 5/6, 10/6, and 21/- each; and in Kegs at reduced prices—28 lb., 12/6; 56 lb., 23/-; 112 lb., 42/- each.

May be obtained from Nurserymen and Seedsmen in the United Kingdom and the Colonies.

Sole Manufacturers,

CORRY, SOPER, FOWLER & CO., LTD.,
London, E.C.

ELLIOTT'S IMPROVED

"SUMMER CLOUD" SHADING

For Glass Structures that require Shading.

It combines EFFICACY with APPEARANCE, CONVENIENCE with ECONOMY, and its effects are LASTING.

Sold in packets, 1*s.* each, with full directions for use, and in bags, 7 lb., 12*s.*; 14 lb., 22*s.*; may be obtained from all Seedsmen and Nurserymen.

Sole Manufacturers and Proprietors,

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FOWLER'S LAWN SAND.

Many years' experience has proved this article the most certain and efficacious remedy for the destruction of Daisies and Weeds on Lawns. If used according to the directions, it cannot fail to produce a healthy and luxuriant growth of grass in one application; and to enable the article to be in more general use it is now offered at the following

REDUCED PRICES,
viz.,
Tins, **1s., 2s. 6d., 5s.**; and in Kegs, ¼-cwt., **8s.**; ½-cwt. **16s.**; 1-cwt. **30s.**

Sold by all Nurserymen and Seedsmen.

Sole Manufacturers,

CORRY, SOPER, FOWLER & CO., LTD.,
London, E.C.

SEE THAT YOU OBTAIN

FOWLER'S LAWN SAND,

All Packages having the name plainly attached.

PEAT, LOAM, SAND, &c.—Splendid Brown Fibrous PEAT (full of fibre), 9*s.* per yard; Yellow Fibrous LOAM (best in England), 10*s.* per ton; SILVER SAND (coarse and fine), 10*s.* per ton. Each in truckloads. COCOA-NUT FIBRE REFUSE, 20*s.* per large truckload. Send for List.
BRINKWORTH AND SONS, Reading.

Orchid Peat—a Specialty!

W. WOOD AND SON are now cutting from THE NEW ESTATE (the only estate celebrated for its special quality of ORCHID PEAT).
Send for Sample. Special Quotations.
Wood Green, London, N.

GISHURST COMPOUND, used by leading Gardeners since 1859 against Red Spider, Mildew, Thrips, Green Fly, and other Blight. 1 to 2 ounces to the gallon of soft water; 4 to 16 ounces as winter dressing for Vines and Orchard-house Trees; and in lather from the cake against American Blight. Has outlived many preparations intended to supersede it. Boxes, 1*s.*, 3*s.*, and 10*s.* 6*d.*

GISHURSTINE keeps Boots dry and soft on wet ground. Boxes, 6*d.* and 1*s.*, from the Trade. Wholesale from PRICE'S PATENT CANDLE COMPANY (Limited), London.

GARDEN SHADINGS, NETTING, TIFFANY, SCRIM, HESSIAN,
RUSSIA MATS, RAFFIA, PEAT,
SAND, COCOA FIBRE REFUSE, &c.,
At very Lowest Prices.
CATALOGUE on APPLICATION,

JAMES T. ANDERSON,
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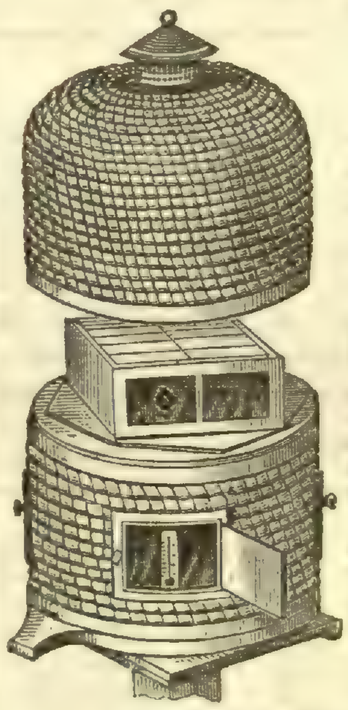
CONSERVATORY, 16 feet 6 inches by 20 feet 6 inches, FOR SALE, including Tesselated Tile Floor, large Stand, Fern Baskets, Staging round same, 100 yards of 4-inch Pipe and Boiler. Price complete, £30. Apply to FOREMAN, Thornbury, King's Road, Clapham Park, S.W.

"Gather Honey from Your Flowers."

NEIGHBOUR'S CELEBRATED

BEE-HIVES



For taking Honey without the Destruction of the Bees.

Philadelphia Exhibition, 1876.
Paris Exhibition, 1878.

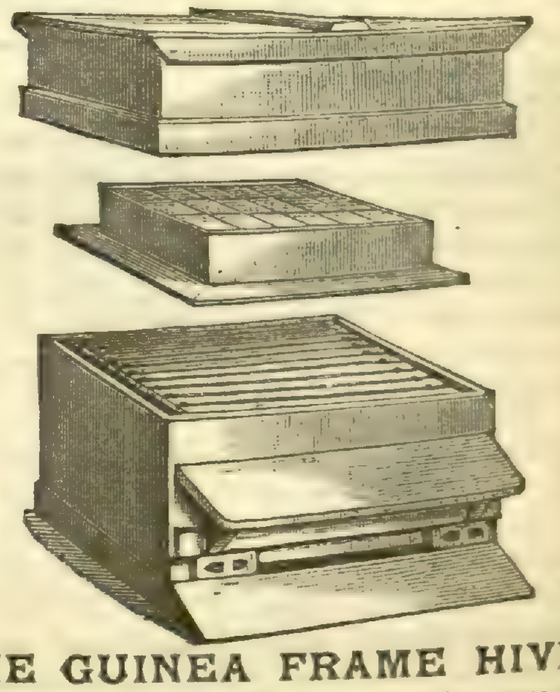
Three Silver Medals and several others awarded to
GEO. NEIGHBOUR & SONS
FOR THEIR IMPROVED

COTTAGE BEEHIVE,

as originally introduced by them, working three bell-glasses or tray of sectional supers, is neatly and strongly made of straw; it has three windows in the lower Hive.

This Hive will be found to possess many practical advantages, and is more easy of management than any other that has been introduced.

Price, complete, £1 15 0
Stand for ditto 0 10 6



THE GUINEA FRAME HIVE,

With metal ends to Standard Frames, and extra space at the sides to admit of chaff or other packing; also a double quilt for the cover and a case of 1 lb. Sections with cover are included.
Price, *unpainted,* **21s.**

CATALOGUE of Improved HIVES and APPLIANCES, with Drawings and Prices.

GEO. NEIGHBOUR & SONS,
127, HIGH HOLBORN, LONDON, W.C.,
and 149, REGENT STREET, LONDON, W.
Established 1815.

"ARCHIMEDEAN"

AMERICAN LAWN MOWERS.

AWARDED

HIGHEST PRIZE

AT THE

Paris Exhibition, 1878;

and the JURY, in their REPORT, say:—

"The 'ARCHIMEDEAN' did the BEST WORK of any Lawn Mower exhibited."

ALSO AT

Sydney Exhibition, 1879-80

AND AT

Melbourne Exhibition, '80-1

Opinions of the Press:

"Far superior to any of ours."—Vide *The Field*.

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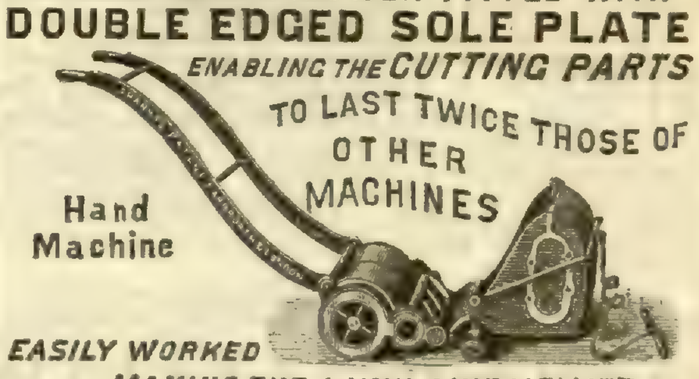

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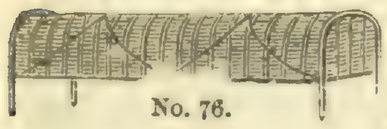
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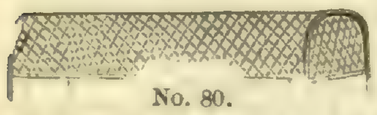
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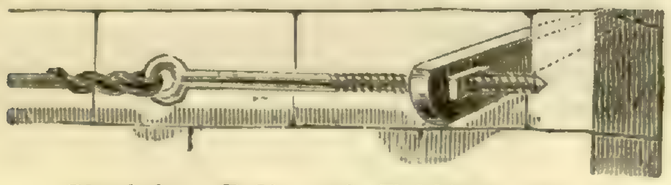

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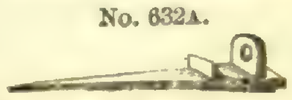

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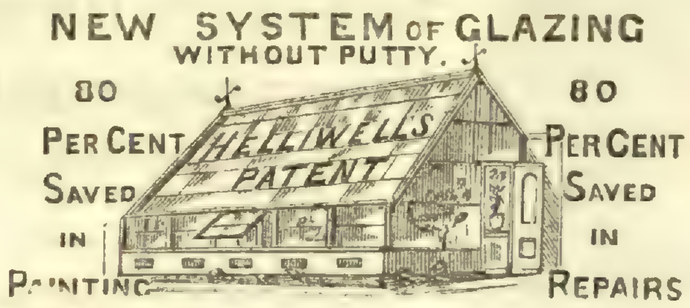

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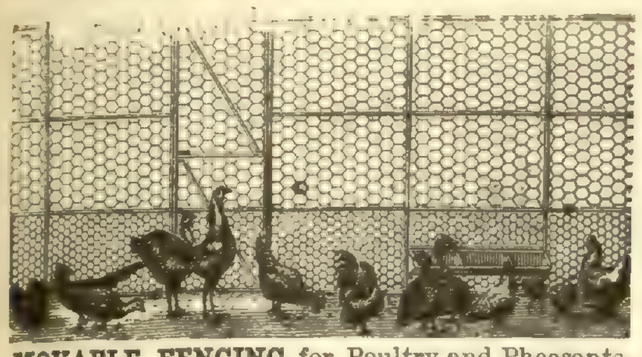

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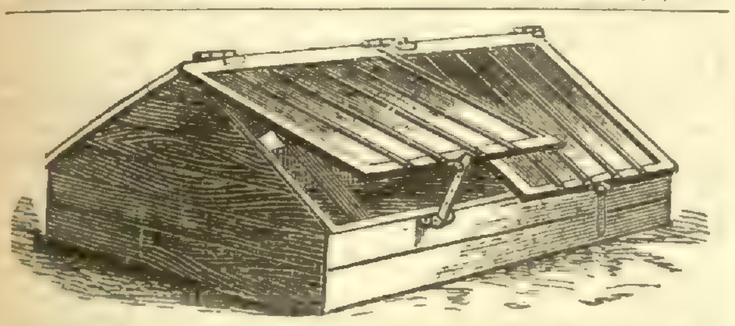

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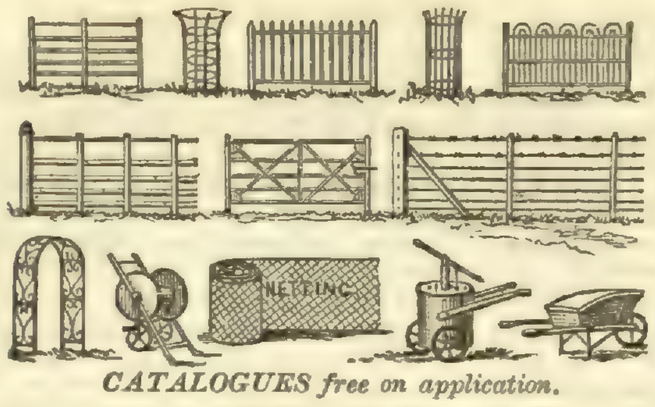

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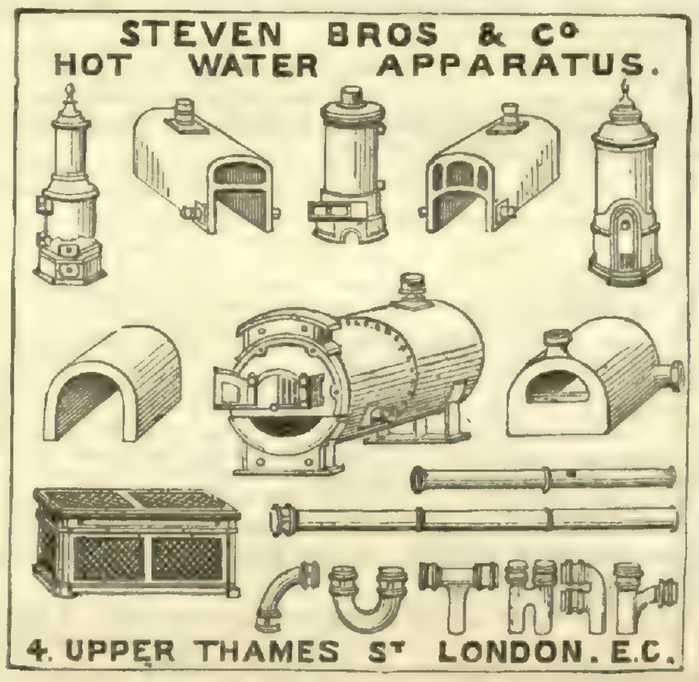

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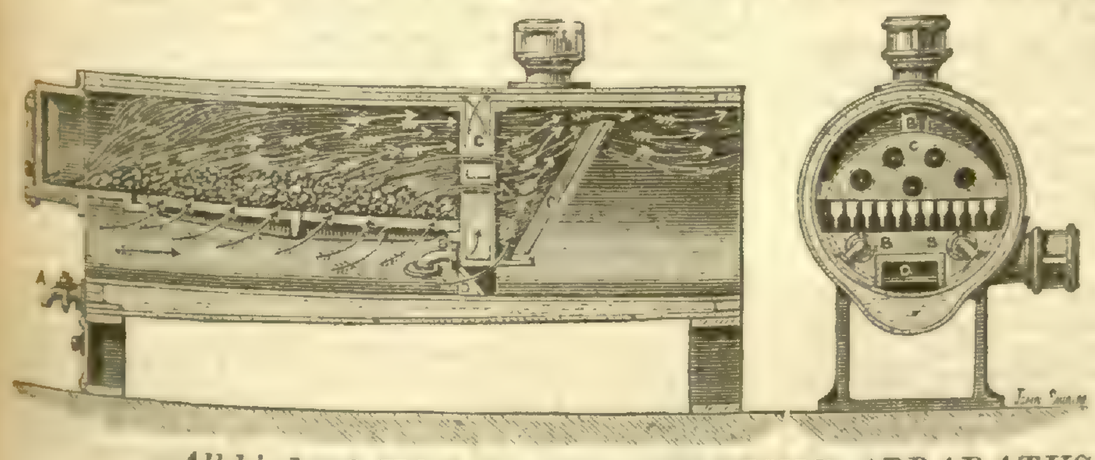

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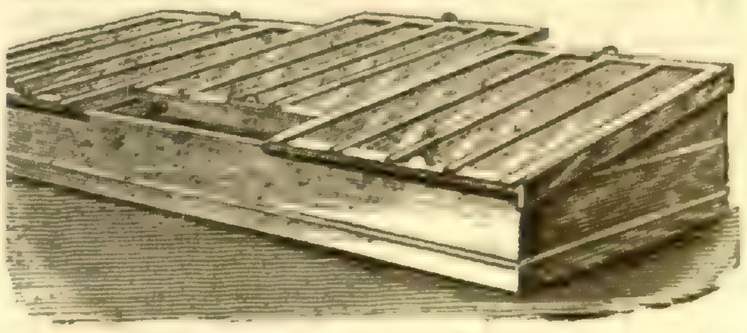

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WANTED, AT ONCE, a Man as PROPAGATOR, and to MANAGE Four Small Houses. Must be experienced in Growing Cut Bloom, Tomatos, and Bedding Plants. State age, references, and salary required.—W. CROWDER AND SONS, Thimbleby Nurseries, Horncastle.

WANTED, a young married MAN, used to Fern Growing in a Market Nursery.—Apply personally o J. WILLIAMS, 33A, Turner Road, Lee, Blackheath, S.E.

WANTED, a JOURNEYMAN, for Inside. A good Grape Hand essential. No other need apply.—State terms and address, WM. WATSON, The Gardens, Polegate, Sussex.

WANTED, a respectable young MAN, used to the Propagation and Growing of Soft-wooded Plants for Market, Tomatos, Cucumbers, &c. Must be quick at his work. An abstainer preferred.—W. W. JOHNSON AND SON, Seed Merchants and Nurserymen, Boston.

WANTED, a single MAN, who thoroughly understands Growing of Maidenhair Ferns and Grapes for Covent Garden Market.—Apply stating wages, age, and references, to C. B. MANSFIELD, Llysowen Gardens, St. Clears, Carmarthenshire, South Wales.

WANTED AT ONCE, an active, steady, married MAN (without family preferred), age 30 to 40, to Grow Cut Flowers and Plants for Market, also to Assist in Fruit and Vegetable Packing. Only those that have worked in the Trade need apply. Wages, 18s. per week, with good cottage, coals, and vegetables.—PARROTT BROTHERS, Normandy, Guildford.

WANTED, a young MAN, of first-rate experience in Fruit Growing, for an establishment in France.—Apply, stating terms, to F. E. F., 16, Rue du Hâvre, Ste. Adresse, près Hâvre, France.

WANTED, a MAN, who understands Gardening and is willing to make himself generally useful.—Apply, by letter only, stating age, terms, &c., G. S., 8, Great St. Helens, E.C.

WANTED, several active young MEN for the Orchid Houses. Personal application preferred.—SANDER, St. Albans.

WANTED, a few good JOBBING HANDS.—Regular employment to good hands. Wages 24s. per week.—G. STRUDWICK, Florist, Bayswater Road, R.

WANTED, a YOUTH, in a Small Nursery.—Must understnd Potting and Watering. Good wages.—ROBERT GREEN, Floral Establishment, Crawford Street, Bryanston Square, W.

WANTED, TWO respectable steady Young MEN, used to Nursery Work.—Apply any morning between 9 and 10 o'Clock to Messrs. WIMSETT AND SON, King's Road, Chelsea, S.W.

WANTED, a SHOPMAN, near London, with good knowledge of Plants of all kinds, and well versed in Seed and Bulb Trade. Active, good Salesman, reliable character.—State age and full particulars of antecedents to W. H., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

Clerk.

WANTED, for Agricultural Seed Business, CLERK who has knowledge of Book-keeping and Correspondence. Must be a good Penman, accurate and painstaking, and with good personal character.—Apply by letter, giving particulars of experience and capabilities, references, and salary expected, to JAMES HUNTER, Agricultural Seed Merchant, Chester.

WANTED, at once, a thorough good all-round young lady FLORIST. Must be thoroughly competent.—BILLINGS, Florist, Lower North Street, Poplar, E.

WANT PLACES.

SCOTCH GARDENERS.—JOHN DOWNIE, Seedsman, 144, Princes Street, Edinburgh, has at present on his List a number of SCOTCH GARDENERS, waiting re-engagements. He will be pleased to supply full particulars to any Lady, Nobleman, or Gentleman requiring a trustworthy and competent Gardener.

B. S. WILLIAMS begs to intimate that he has at present in the Nursery and upon his Register some excellent Men, competent either to fill the situation of HEAD GARDENER, BAILIFF, FOREMAN, or JOURNEYMAN. Ladies and Gentlemen requiring any of the above will please send full particulars, when the best selections for the different capacities will be made.—Holloway, N.

Gardeners, Under Gardeners, Bailiffs, &c.

WM. CUTBUSH AND SON have at the present time on their List MEN whose characters will bear strict investigation, and such as from their personal knowledge can recommend as to abilities, &c.—Ladies and Gentlemen requiring either of the above can be suited with reliable, first-class men by applying to Wm. Cutbush & Son, Highgate Nurseries, N.

Situations Wanted.

JOHN LAING AND CO., having filled many important places, can RECOMMEND with every confidence, energetic and practical MEN of tested ability and first-rate character. Ladies and Gentlemen in want of Gardeners and Bailiffs, or Gardeners for firsr-rate Establishments, or Single-handed situations, can be suited, and have full particulars by applying to us. No fee charged.—JOHN LAING AND CO., The Nurseries, Forest Hill, S.E.

Gardeners.

THOMAS KENNEDY AND CO. have on their Register a number of first-class GARDENERS, FORESTERS, &c., wishing engagement, and will be glad to furnish particulars to any one in want of same.—THOMAS KENNEDY AND CO., 108, High Street, Dumfries, N.B.

RICHARD SMITH AND CO. beg to announce that they are constantly receiving applications from Gardeners, seeking situations, and that they will be able to supply any Lady or Gentleman with particulars &c.—St. John's Nurseries, Worcester.

THE LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, The Vineyard and Nurseries, Garston, near Liverpool, are at present in a position to recommend a competent man of excellent character as HEAD GARDENER, and also another MAN, who, in addition to being a good General Gardener, has had great experience as an Orchid Grower Both men are capable of Managing Large Establishments

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GARDENER (HEAD).—G. BEDDOES, six years Head Gardener and Orchid Grower to the late R. P. Percival, Esq., of Clevelands, Birkdale, Southport, is open to an engagement with any Lady or Gentleman requiring the services of a thoroughly practical man.—Address as above.

GARDENER (HEAD), where four or more are kept.—Age 26; understands Pines, Melons, Cucumbers, Grapes, Peaches, Stove and Greenhouse Plants. Ten years' experience.—C. E. H., Mr. Ward, Royal Nurseries, Slough.

GARDENER (HEAD); age 41, married, no family.—Mr. CLARKE, Gardener to the Earl of Lonsdale, Lowther Castle, can recommend a man who would be an acquisition to any Lady or Gentleman requiring a thoroughly practical and reliable man, well versed in all matters of Horticulture. Undeniable character.

GARDENER (HEAD).—Lady DE ROTHSCHILD is anxious to recommend as Head Gardener a man who for nearly five years acted as Foreman to her Gardener. He thoroughly understands his business, and is very honest and sober.—Lady DE ROTHSCHILD, Aston Clinton, Tring.

GARDENER (HEAD); age 29, married.—A. YOUNG, Gardener to J. G. Williams, Esq., Pendley Manor, Tring, Herts, can with confidence recommend Charles Murray to any Lady or Gentleman requiring a practical Gardener. A thoroughly experienced man with twelve years excellent character from present situation.

GARDENER (HEAD).—ARTHUR BARKER, Gardener to the Dowager Lady Hindlip, Hindlip Hall, Worcester, will be pleased to recommend a good man as Head Gardener. He has been Foreman in the Gardens here upwards of six years, for the last two and a half years has had entire Management. He is competent to take charge of a large establishment. Lady Hindlip and myself will be pleased to answer any further inquiries.

GARDENER (HEAD); age 31. Sixteen years' experience.—Mr. BENNETT, Gardener to the Right Hon. Lord Burton, Rangemore Hall, Burton-on-Trent, can with confidence recommend his Foreman, Thomas Hobday, who has been with him nine and a half years, five and a half as above, and has given great satisfaction, to any Lady or Gentleman requiring the services of a thoroughly practical Gardener in all branches; a steady, sober, industrious, and trustworthy man

GARDENER (HEAD), or ORCHID GROWER.—Age 30, married, two children; ten years' excellent knowledge of Orchid Growing; fond of Hybridising; also practical knowledge of Gardening in all other branches. Two years' excellent character as Head, and several good testimonials from leading gardens.—PHALÆNOPSIS, Park Road, Teddington, S.W.

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GARDENER (HEAD WORKING).—Age 39, married, no family; thoroughly experienced in all branches of the profession. Good character.—G. M., 38, Cecil Street, Ashbourne Road, Derby.

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GARDENER (HEAD WORKING).—Age 30, single; fourteen years' experience with Vines, Peaches, Cucumbers, Stove and Greenhouse Plants, Flower and Kitchen Gardens. At liberty about midsummer. Well recommended.—W. KING, Foxley Gardens, Hereford.

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GARDENER (Single-handed, or with help).—Age 24; four years Foreman in present situation. Thoroughly understands his work. Character of the highest order.—F. CLARKE, Ousefleet Hall Gardens, Goole.

GARDENER (Single-handed), or with help.—Age 35; married, no family; understands all branches. Good character.—A. HOLGATE, Fir Tree Cottage, Camden Wood, Chislehurst, Kent.

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GARDENER (Single-handed, or Second), where two or three are kept, or in Nursery.—Age 27, single; four years' good character.—G. P., 11, Grove, Eltham, Kent.

GARDENER (Single-handed, or Second).—Age 25, single; understands Vines, Peaches, Melon, Cucumbers, Stove and Greenhouse, Flower and Kitchen Garden. Good character. J. W., 50, Fleet Road, Hampstead.

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GARDENER (Second), or JOURNEYMAN in the Houses; been used to Inside and Out.—Age 24; four years' experience. Good character. Bothy preferred.—A. T., Mr. Wilkins, Layhames, West Wickham, Kent.

GARDERER (Under, or Single-handed).—Age 24; seven years' experience. Inside and Out. Two years' excellent character.—H. C., 3, Norfolk Street, Worthing, Sussex.

GARDENER (Under), large or small place.—Age 22; good character; four years' experience. Bothy no objection.—G. A. WELCH, 3, Totteridge Lane, Whetstone.

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GARDENER (Under).—Age 21; three and a half years' good character.—M. TAYLOR, Bradshott Hall, Alton, Hants.

GARDENER (Under).—Age 19; good character.—W. FOX, Ambury Cottage, Ashton's Lane, Huntingdon.

GARDENER (Under).—Age 23; four and a half years' good character.—T. CARTER, Rovindene, Rye, Sussex.

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To Nurserymen.

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FOREMAN, in the Houses.—Age 24; nine years' experience in the Cultivation of Stove and Greenhouse Plants, Vines, Peaches, Melons, &c. Good character.—C. LINK, Everingham, York.

FOREMAN, in a good establishment.—Age 25; over ten years' experience in good places. Highest references as to character and ability.—H. COWAN, 14, Charles Street, Bishopsfield, Chester.

FOREMAN; age 28.—Mr. Lee, Powis Castle Gardens, Welshpool, can with confidence recommend J. Voss, his Foreman, to any one requiring a trustworthy and thoroughly practical man. Has been with me two years.—J. VOSS, 16, Charles Street, Bishopsfield, Chester.

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PROPAGATOR and GROWER, for Market.—Aged 30; well up in all branches of the Cut Flower and Plant trade.—A. B. C., Messrs. Fletcher, Son & Co., Westfield Nurseries, Chesterfield.

JOURNEYMAN (First), in a good establishment.—Age 25; ten years' experience; over two in present situation. Bothy preferred.—C. McGREGOR, Doneraile Gardens, Cork, Ireland.

JOURNEYMAN; age 22.—Mr. Hallmark, Castle Head Gardens, Grange-over-Sands, will be pleased to recommend a steady man as above. Has been with him six years.

JOURNEYMAN, in Nobleman's or Gentleman's establishment.—Age 19; six and a half years' experience Inside and Out.—C. BOWYER, The Gardens, Hills Road, Cambridge.

JOURNEYMAN, in the Houses, or Inside and Out, in a Gentleman's establishment.—Age 20; four years' experience.—G. BIRCH, The Gardens, Wingham Lodge, Minster, Thanet.

JOURNEYMAN, or SECOND.—Age 22; thorough good character; accustomed to Vines, Peaches, Cucumbers, Melons; also Stove and Greenhouse Plants.—A. B., 59, Castle Street, Hertford, Herts.

JOURNEYMAN, or IMPROVER, in the Houses, under a Foreman.—Age 18; good experience.—Bothy preferred.—E. W.—The Gardens, Buckhurst, Wokingham, Berks.

IMPROVER, in a Nobleman's or Gentleman's Garden.—Age 19; first-class references.—F. J. HATCH, Cleve Lodge, Downend, near Bristol.

IMPROVER.—Young; good knowledge of Practical Gardening, Botany, and Principles of Agriculture.—C. H. HARTLEY, 134, Walton-le-Dale, Preston.

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To Gardeners.

IMPROVER.—Age 24; good references.—J. GRAY, The Lodge, Wellington House, Leyland, near Preston.

IMPROVER, in the Houses, or Inside and Out.—Age 19; five years in present situation. Good character. Total abstainer.—T. HOOKER, Warsash Gardens near Fareham, Hants.

IMPROVER, in a Gentleman's garden.—Age 18; two years in last place. Good character. Bothy preferred.—ERNEST LETHBRIDGE, Princes Road, Norbiton, Kingston-on-Thames.

IMPROVER, under good Gardener, in the Houses preferred.—Age 19. Five years' character.—R. BURNS, 15, Strode Villas, Holmesdale Road, South Norwood, Surrey.

TO NURSERYMEN and SEEDSMEN.—Situation desired by Advertiser, who has had the Management of Nursery and Seed Business for his mother, deceased; has a good knowledge of Soft-wooded Propagation and the Work of a Market Nursery; considerable experience in Waiting on Customers.—J. G. COOK, Manor House, Bishopstoke, Hants.

TO NURSERYMEN.—Advertiser seeks a situation in Nursery; well up in Propagating and Growing generally; also Roses, Tomatos, &c.; quick at Watering, Potting, &c. Good character,—A., 24, Hollard Street, Accrington.

TO MARKET GROWERS, FLORISTS, &c.—Wanted by an energetic and active young man (age 30), a situation as Assistant. Would invest £100 in a genuine business. Has had considerable experience in Fruit, Plant, and Vegetable Growing. First-class references.—W. K., 41, Wellington Street, Strand, W.C.

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TO NURSERYMEN.—Wanted, by a youth (age 18), a situation in a Nursery. Three years' good character from present situation.—A. MAJOR, Staines Road, Hounslow, Middlesex.

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To Nurserymen.

KNIFEMAN, Outdoor Nursery.—Age 28; Budding and Grafting Fruits and Roses, Training, and Stool-ground Work; fourteen years' experience. Good reference.—S. J. NICHOLS, Newby, Scarborough, Yorkshire.

MANAGER, or SHOPMAN (Head).—Advertiser (age 29), having had the Management of a Large Provincial Seed Business, seeks re-engagement as above. Thirteen years' experience with some of the leading London and Provincial Houses. Unexceptional references.—C. R. CLARK, 8, George Street, Huntingdon.

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TRAVELLER, or SALESMAN, in any Business connected with Horticulture.—Age 27. Has a large connection amongst Private Gardeners and the principal Nurserymen throughout the kingdom. Can be well recommended.—A. B. 77, Lavender Road, Battersea, S.W.

TO NURSERYMEN.—A young man (age 31) who has held the position of Order Clerk in several of the leading Nurseries is desirous of obtaining a situation. Willing to make himself useful. Has a practical knowledge of the trade.—B., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

TO NURSERYMEN, &c.—WANTED, a situation in a Nursery or Shop. Age 18, up in the general routine of a Market Nursery. Total abstainer. Good references.—H., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

HANDYMAN.—The Rev. W. A. Duckworth can recommend a Man who is experienced in the Management of Cows, Pigs, and Poultry, in Garden Labour, and Hedging and Ditching.—Orchardleigh, Frome.

TO GENTLEMEN, GARDENERS, &c.—Wanted, by married man, situation in Gentleman's Garden. Can Paint, Glaze, look after Horse, &c. Good character.—RALPH SANKEY, Holmes Chapel, near Crewe.

PAINTER and GLAZIER, Nursery or Private Establishment.—Willing to fill up spare time in other work; excellent character; very moderate wage.—Apply, stating particulars, to ABSTAINER, W. Fermough, Front Street, Arnold, Notts.

HOLLOWAY'S PILLS.—When inclement weather checks to a considerable extent the action of the skin, an alterative is required to compensate the body by means of other channels. Holloway's Pills can be confidently recommended as the easiest, surest, and safest means of attaining this desirable end without weakening the most delicate or incommoding the most feeble. When from frequent recurring chills or the inhalation of impure air the blood becomes foul and the secretions vitiated, these Pills present a ready and efficient means of cleansing the former and correcting the latter. By this salutary proceeding disease is arrested at its outset, its pains and inconveniences averted, and the nervous structures saved from the depressing effects entailed upon them by an illness.

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HER MOST GRACIOUS MAJESTY THE QUEEN on many occasions,
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Royal Horticultural Society's Show, South Kensington, London, June 3 to 7. 1881. The "*Journal of Horticulture,*" *of June* 9, *says:*—"MOWING MACHINES.—After a critical examination the Silver Medal was granted to the old firm of world-wide fame, Messrs. T. GREEN & SON, of Leeds and London. As the Machines are known in all lands where good lawns are cherished, it is quite unnecessary to give any description of them."

Upwards of 135.000 of these Machines have been Sold since they were first introduced in the year 1856,
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SILENS MESSOR MOWER,
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SINGLE-HANDED LAWN MOWER.

	Price.
To cut 6 in., can be worked by a Lady ...	£1 15 0
To cut 8 in., do. do.	2 10 0
To cut 10 in., do. by a strong youth	3 10 0
To cut 12 in., do. by a man ...	4 10 0
To cut 14 in., do. do.	5 10 0

DOUBLE-HANDED LAWN MOWER.

To cut 16 inches can be worked by one man on even lawn ...	£6 10 0
To cut 18 inches, do. man and boy...	7 10 0
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Prices of Donkey, Pony, and Horse Machines, including Patent Self Delivery Box, or Side Delivery, with Cross-stay complete, suitable for attaching to Ordinary Chaise Traces or Gig Harness:—

DONKEY and PONY MACHINES.

To cut 26 inches	£14 0 0
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Leather Boots for Donkey	1 0 0
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To cut 30 inches	£22 0 0
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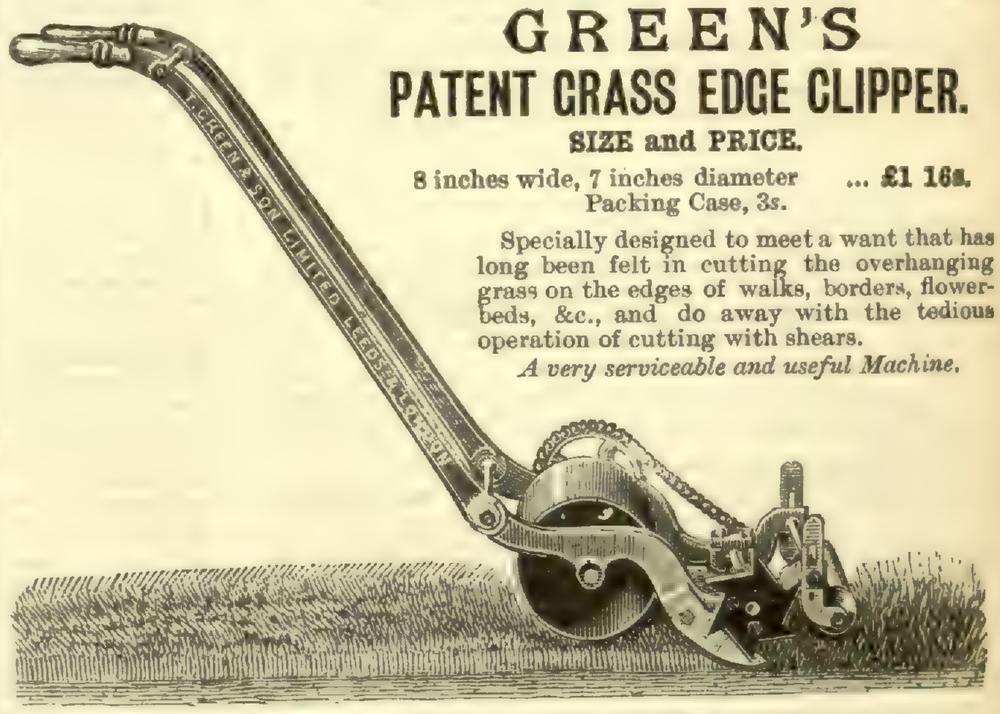
The 26 and 28 inches can easily be worked by a Donkey, the 30 inches by a Pony, and the larger sizes by a horse; and as the Machine makes little noise in working, the most spirited animal can be employed without fear of it running away, or in any way damaging the machine. Packing Cases as per List, except when for export.



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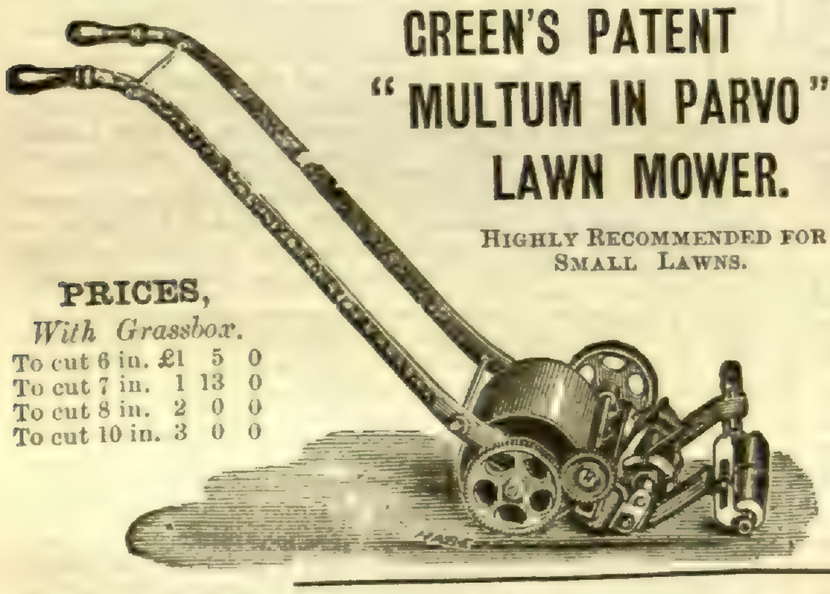
8 inches wide, 7 inches diameter ... **£1 16s.**
Packing Case, 3*s*.

Specially designed to meet a want that has long been felt in cutting the overhanging grass on the edges of walks, borders, flower-beds, &c., and do away with the tedious operation of cutting with shears.

A very serviceable and useful Machine.

GREEN'S PATENT "MULTUM IN PARVO" LAWN MOWER.

HIGHLY RECOMMENDED FOR SMALL LAWNS.



PRICES,
With Grassbox.

To cut 6 in.	£1 5 0
To cut 7 in.	1 13 0
To cut 8 in.	2 0 0
To cut 10 in.	3 0 0

GREEN'S PATENT LAWN TENNIS COURT MARKER.

No. 2412.
The Best Marker made.
Size with 1 wheel for Ordinary Courts, price 14*s*.
Do. do., with 3 wheels, 17*s*.
Size for Clubs and Large Grounds, price £1.

Small Bag of Marking Composition, 9*d*.

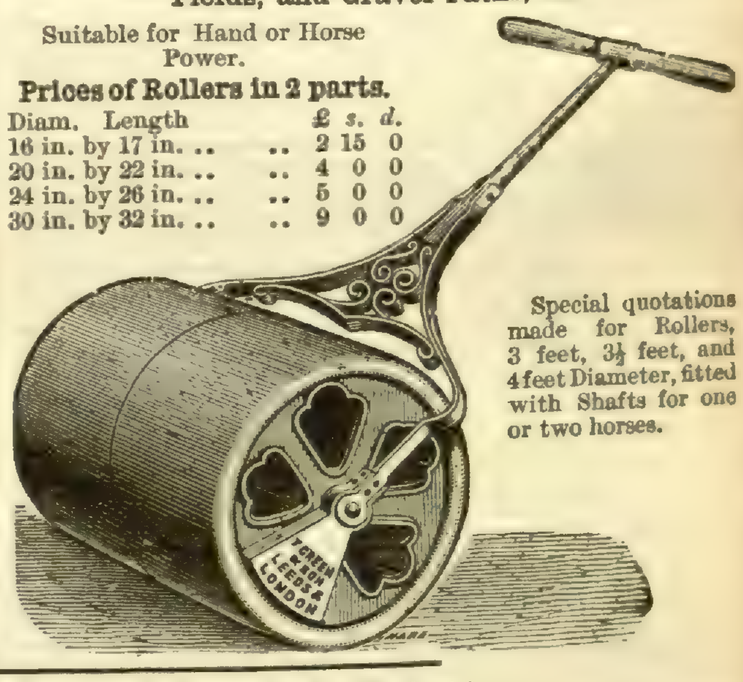
GREEN'S Patent ROLLERS,

For Lawns, Drives, Bowling Greens, Cricket Fields, and Gravel Paths, &c.

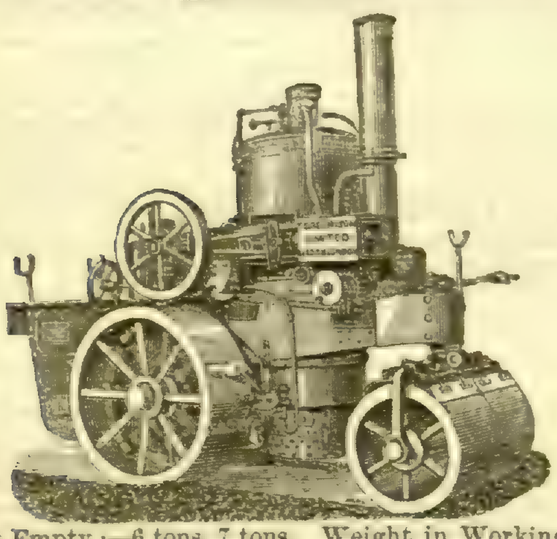
Suitable for Hand or Horse Power.

Prices of Rollers in 2 parts.

Diam. Length	£ s. d.
16 in. by 17 in.	2 15 0
20 in. by 22 in.	4 0 0
24 in. by 26 in.	5 0 0
30 in. by 32 in.	9 0 0



Special quotations made for Rollers, 3 feet, 3½ feet, and 4 feet Diameter, fitted with Shafts for one or two horses.



Weight Empty:—6 tons, 7 tons. Weight in Working Trim with Water and Fuel:—7 tons, 8 tons.

GREEN'S PATENT STEAM ROAD ROLLERS
and TRACTION ENGINES COMBINED.

Which are made in sizes of 6. 10, 12½, 15, and 20 Tons weight, and both the Driving and Steering of them are under the easy control of ONE Man.

As supplied to Her Majesty for the Royal Grounds, Frogmore, Windsor, and can be seen on application to Mr. Jones, Superintendent of the Gardens.

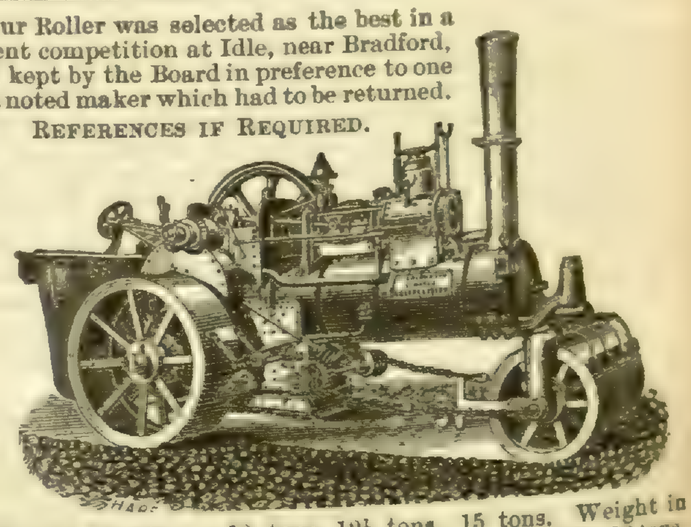
They are suitable for Rolling Carriage Drives, Park Roads, Walks, Streets, Highways, and for General Road Making; Rolling Lawns, Cricket Flats, Parks, &c. They can also be used as Stationary Engines for Stone Breaking, Wood Sawing, Pumping, Farm Purposes, and other various work.

They are specially recommended to Noblemen, Gentlemen, Borough and Road Surveyors, Corporations, Local Boards, Highway Trustees, Contractors, Road Makers, and others.

Specifications, with Prices and Testimonials, furnished on application.

Our Roller was selected as the best in a recent competition at Idle, near Bradford, and kept by the Board in preference to one of a noted maker which had to be returned.

REFERENCES IF REQUIRED.



Weight Empty:—10 tons, 12½ tons, 15 tons. Weight in Working Trim with Water and Fuel:—12½ tons, 15 tons, 18 tons.

Delivered Carriage Free at all the principal Railway Stations and Shipping Ports in England, Scotland, and Ireland.

The largest stock of Mowers kept by any manufacturer is to be found at our London Establishment, SURREY WORKS, BLACKFRIARS ROAD, where Purchasers can make selection out of several hundred Machines of Hand, Pony, and Horse Power, and have their Orders supplied the same day as they are received.

The above Machines are Warranted to give entire Satisfaction, otherwise they may be returned AT ONCE, Free of Cost to the Purchaser.

N.B.—Those who have Lawn Mowers which require repairing should send them to either our Leeds or London Establishment, where they will have prompt attention, as an Efficient Staff of Workmen is kept at both places.

GARDEN SEATS AND CHAIRS, AND HORTICULTURAL IMPLEMENTS OF EVERY DESCRIPTION, WIRE NETTING, &c., &c.

Descriptive Illustrated PRICE LISTS Free on application to

THOMAS GREEN & SON, LIMITED, SMITHFIELD IRONWORKS, LEEDS; AND SURREY WORKS, BLACKFRIARS ROAD, LONDON;

or they can also be had of any Ironmonger, Seedsman, Merchant, or Factor in the United Kingdom.

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CONTENTS.

Anemone, meaning of ... 682
Auricula, origin of the edged 678
Auriculas, double ... 623
Books:—
American Florists' Directory 680
Fire Protection of Mansions 680
Gardens of Light and Shade 660
Geology of England and Wales 680
Naturlichen Pflanzen-Familien 680
Botanical Magazine ... 671
Boussingault, J. B., the late M. 676
Cabbage show 677
Dendrobium undulatum . 671
Douglas Fir at Penrhyn Castle 672
Florists' Flowers... ... 674
Flower garden, the ... 675
Fruit crops in Yorkshire 682
Fruits under glass ... 675
Gardening appointments 690
Ghent "Chambre Syndicale" 677
Hardy fruit garden ... 681
Irises, some new... ... 672
Honey, summer drinks from 682
Kew, British fernery at . 677
,, plants in flower at 679
Kitchen garden, the ... 683
Livistonia australis ... 676
May's nursery 680
Mentha arvensis 682
Oncidium Brunleesianum 672
Orchid notes and gleanings 670
Orchids at the Wild West 676
,, hardy American ... 682
Phalænopsis, a new hybrid 677
Plants and their culture 675
Pogonia Fordii 670
Potato culture 679
Rating 676
Roses, a forecast 669
Self-help scheme... ... 682
Societies:—
Edinburgh Botanical... 685
Royal Botanic 684
Royal Horticultural ... 683
Tillandsia vestita ... 670
Ursinia pulchra 670
Veitch's nursery 679
Vines, red-spider on ... 677
Williams' nursery ... 678
Weather 685

ILLUSTRATIONS.

...aria brasiliensis 680
...s Fir at Penrhyn Castle... 672
...onia australis. (See Supplement.)
...dium Brunleesianum 673
...clephas 681

ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W.
NOTICE!—COMMITTEE MEETINGS: Scientific, at 1 P.M., in the Lindley Library; Fruit and Floral, at 11 A.M., in the Conservatory, on TUESDAY NEXT, May 24. Admission free by Shows at 12 o'Clock; and to the Public at 1 o'Clock, upon payment of 1s.
N.B.—Entrances, N.E. Orchard House, Exhibition Road; and Exhibitors' Entrance, east side of Royal Albert Hall.

ALEXANDRA PALACE, London, N.
GREAT ROSE SHOW, JULY 14, 15, and 16. Entries close July 7, 1887. For Schedules and full particulars, apply to J. S. COOKE, Secretary of the Show, Alexandra Palace, N.

ROYAL BOTANICAL and HORTICULTURAL SOCIETY of MANCHESTER.
The ANNUAL WHITSUNTIDE HORTICULTURAL EXHIBITION will open at Manchester on FRIDAY, the 27th inst. For particulars apply to the undersigned, BRUCE FINDLAY. Royal Botanic Gardens, Manchester.

BATH and WEST of ENGLAND SOCIETY (Established 1777) and SOUTHERN COUNTIES ASSOCIATION, DORCHESTER MEETING, 1887. Commencing MONDAY, May 30; terminating FRIDAY, June 3.
A Cup or Money will be given, value £10, for the best Group of Orchids; £5 ditto for the best Specimen Orchid in the Show. £3 and £2 for best Collection of Fruit, if not less than three exhibitors. £3 and £2 ditto for best Collection of Vegetables. £2 and £1 for the best dish of 30 Strawberries. For particulars apply J. TOWNSHEND BOSCAWEN, Show Yard, Dorchester.

RICHMOND (Surrey) HORTICULTURAL SOCIETY.
The THIRTEENTH ANNUAL SUMMER EXHIBITION will be held in the Old Deer Park, on WEDNESDAY, June 29. The Committee beg to inform Exhibitors that there are 68 open Classes, and in addition to large Money Prizes, Eight Silver Gilt Medals, value £2 each, will be given for the most meritorious Exhibits in each division.
The SURREY BEEKEEPERS' ASSOCIATION will hold a SHOW of BEES, APPLIANCES, and HONEY on this occasion. Practical Illustrations and Lectures will be given at intervals.
The AUTUMN SHOW will be held on NOVEMBER 2 and 3. For Schedules apply to 22, George Street, Richmond. Mr. J. H. FORD, Hon. Sec.

BRIGHTON and SUSSEX FLORICULTURAL and HORTICULTURAL ASSOCIATION.
GRAND SUMMER EXHIBITION, JULY 6 and 7, at the Royal Pavilion. 1st prize for 10 Stove and Greenhouse Plants, £10. 1st prize for 8 Orchids, £5. 1st prize for 12 Foliaged Plants, £5. 1st prize for 48 Roses, £5. 1st prize for Collection of Fruit, £5. Schedules of prizes ready.
EDWARD CARPENTER, Secretary.
Secretary's Office: 96, St. James' Street, Brighton, March 28, 1887.

NATIONAL ROSE SOCIETY OF ENGLAND.
GRAND EXHIBITION will be held in the WAVERLEY MARKET, EDINBURGH, ON WEDNESDAY, July 13, 1887; In connection with the SUMMER SHOW of the ROYAL CALEDONIAN HORTICULTURAL SOCIETY.
For Schedules, &c., apply to SECRETARY, Royal Caledonian Horticultural Society, 18, Waverley Market, Edinburgh.

SHROPSHIRE HORTICULTURAL SOCIETY.
SUMMER SHOW (open to all), AUGUST 17 and 18. Twenty Plants, £25, £20, £15. Collection of Fruit, £10, £6, £3. For Grapes, £44. Collection of Vegetables, 8 sorts, £5, £3, £2, £1. Schedules and full particulars from Messrs. ADNITT AND NAUNTON, Shrewsbury, Hon. Secs.

HARDY RHODODENDRONS and AZALEAS.—The most extensive stock in the Kingdom of the finest hardy varieties known.
☞ The Rhododendrons in Rotten Row and the Botanic Gardens, Regent's Park, are supplied by ANTHONY WATERER, Knap Hill Nursery, Woking, Surrey.

CHEAP PICEA NORDMANNIANA, 1½ to 2 feet, 10s. per dozen; 2 to 2½ feet, 15s. per dozen; 2½ to 3 feet, 24s. per dozen; 3 to 3½ feet, 30s. per dozen. All EVERGREENS and FRUIT TREES cheap; CURRANTS and GOOSEBERRIES from 7s. 6d. per 100. 25 per cent. discount allowed for cash to clear. For LIST apply T. L. MAYOS, Highfield Nurseries, Hereford.

G. HUMPHRIES' New Fancy DAHLIAS for 1887 are now ready for delivery; they are of first-class quality, and quite distinct from anything yet sent out. Awarded First-class Certificate Royal Horticultural Society. Descriptive CATALOGUE of Dahlias on application. The Trade supplied on liberal terms.
The Nursery, Kington Langley, Chippenham.

ASPARAGUS.—This delicious vegetable does not require half the expense often incurred. Strong roots, 2s. 6d. per 100; extra strong ditto, two years old, 3s. 6d. per 100; three years, 5s. per 100.
RICHARD SMITH AND CO., Worcester.

PEACHES — PEACHES.— Highest Market Prices guaranteed for really good and well-packed FRUIT of the above.—WISE AND RIDES, Covent Garden, W.C.

SQUELCH AND BARNHAM, North Row, Covent Garden, W.C., are OPEN TO DISPOSE OF any quantity of MUSCATS and BLACK GRAPES, TOMATOS, CUCUMBERS, FRENCH BEANS, STRAWBERRIES, CHOICE FLOWERS, &c. Highest Market Prices obtained. Account Sales daily; Cheques weekly or as preferred by Sender. Baskets and Labels supplied. References given.

MESSRS. GREGORY AND EVANS, NURSERYMEN, Sidcup, and 285, 286, 287, 288, Flower Market, Covent Garden, W.C., are open to RECEIVE CONSIGNMENTS of Choice CUT FLOWERS in any quantity for their Commission Department. Boxes and Labels supplied. Telegraph Address—"COMMISSION, SIDCUP."

Cœlogyne cristata.
WANTED, Large White well-grown AZALEAS, indica, alba, Fielder's White, and Flag of Truce, in EXCHANGE for grand pairs of CŒLOGYNE CRISTATA, equal to the Chatsworth variety.
TURNER BROS., Green Hill Nursery, Allerton, Liverpool.

A Few Large Healthy
PALMS, 3 to 5 feet high for immediate disposal — Latania borbonica, Seaforthia elegans, Chamærops excelsa, and Phœnix reclinata—from 10s. per pair.
GARDENER, Holly Lodge, Stamford Hill, London, N.

TROPÆOLUM SPECIOSUM. — The well-known hardy Scarlet Climber. Extra strong plants out of pots, each, 1s.; half-dozen, 5s.; dozen, 9s.; post-free.
HOWDEN AND CO., The Nurseries, Inverness.

FOR SALE, CHEAP, 18 large pots EUCHARIS, prepared for blooming. GERANIUMS, Henri Jacoby, 10s. per 100; Waltham Abbey Seedling, 10s. per 100. Choice Border CARNATIONS, 15s. per 100: all strong plants.
W. JACKSON, Blakedown, Kidderminster.

FLOWER SEEDS for NATURALISATION. —Hardy Perennials, Biennials, and Annuals in great variety, mixed, for beautifying wastes, &c., 6d. per oz., post-free.
J. MARSHALL, Seedsman, Montrose.

HENDER'S BEDDING PLANTS, grown in single pots, 3 inch, and well hardened. Their descriptive CATALOGUE will be sent post-free, which gives particulars of their Collections of Bedding Plants. 14 dozen for 30s., including half Geraniums; also 14 dozen for 23s. Carriage paid per Goods Train.
HENDER AND SONS, Nursery, Plymouth.

CREEPERS FOR WALLS, in Pots, can be moved at any time.—By planting what is suitable, an ugly object may easily and rapidly be made beautiful. Descriptive LIST and advice free.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

HOLLYHOCKS.—We are again in a position to offer finest named varieties, strong, healthy plants, at 18s., 24s., and 30s. per dozen. Early orders solicited. Our CATALOGUE of Florists' Flowers for 1887 is now issued. It is admitted by all to be the Premier Scotch List. Send for a copy.
R. B. LAIRD AND SONS (late Downie & Laird), Nurserymen, Edinburgh.

EIGHTY THOUSAND CLEMATIS, in Pots, of all the finest Double and Single Varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants; extra strong plants repotted into 5½-inch pots, 2s. 6d. each. Descriptive LIST on application.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

BEGONIAS, superb and cheap.—"The strain of Begonias was equal to any we have seen elsewhere..." *Vide Journal of Horticulture*, August 26, 1886. Varieties for pot culture, from 6s. per dozen; for bedding, from 4s. per dozen. Descriptive LIST of sorts free. Extra choice SEED, single and double, 1s. and 2s. 6d. per packet. Special offer to the Trade. Bedding Plants. Trade LIST on application.
B. R. DAVIS, Yeovil Nurseries, Somerset.

To the Seed Trade.
MALDEN AND SON have a few hundredweight of their Prize Greentop KOHL RABI SEED to dispose of. It grows medium top, with first-class large bulbs, and is, both for quality and quantity, the best known variety in cultivation. For price, apply to
MALDEN AND SON, Market Square, Biggleswade, Beds.

Mangel Wurzel and Turnip Seeds.
H. AND F. SHARPE are now prepared to make special offers of home-grown MANGEL WURZEL and TURNIP SEEDS, raised in 1886 from specially selected Bulbs. The quality is excellent and the prices are very low.
Seed Growing Establishment, Wisbech.

FIELD AND HEARSON'S NICOTYL VAPORISER. For the Destruction of Aphis, &c., WITHOUT SMOKE. CATALOGUE post-free.
BENJAMIN FIELD, F.R.B.S., 75A, Queen Victoria Street, E.C.; Depôt, Swan Place, Old Kent Road, S.E.

HORTICULTURAL COMPANY, Midhurst, Sussex, conducted by W. Short.—The best Bedfordshire and Sussex SILVER SANDS, PEATS, LOAMS, &c., at moderate quotations.

SALES BY AUCTION.

Sale this Day.—Leytonstone.

ANNUAL SALE of 15,000 BEDDING PLANTS, exceedingly well grown, 5000 Geraniums of the best named sorts, thousands of Lobelias, Calceolarias, &c., choice Azalea indica, Pelargoniums, Rhododendrons, Coleus, Roses in Pots, and a variety of other Greenhouse Plants.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, on the Premises, the American Nurseries, High Road, Leytonstone, near the Station, THIS DAY, SATURDAY, at 1 o'Clock.

On view the day prior and morning of Sale. Catalogues of the Auctioneers, 67 and 68, Cheapside, E.C.

Monday Next.

ORCHIDS in FLOWER. SPECIAL SALE.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on MONDAY NEXT, May 23, at half-past 12 o'Clock precisely, 400 lots of ORCHIDS in FLOWER, from various collections, including numerous fine varieties of different species of Odontoglossums, Masdevallias, Cattleyas, Phalænopsis, Oncidiums, Cœlogyne Massangeana, Epidendrums, Dendrobiums, Cypripediums, Vanda Parishii Marriottiana, &c.

On view morning of Sale, and Catalogues had.

Monday Next.—Richmond, Surrey.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the premises, the St. Marys' Grove Nursery, Marshgate, Richmond, five minutes' walk from Richmond Station, on MONDAY NEXT, May 23, at 2 o'Clock precisely, by order of Mr. W. Brown, 20,000 well-grown BEDDING PLANTS.

Now on view. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Tuesday Next.

400 CATTLEYA DOWIANA.
250 C. AMETHYSTOGLOSSA.
200 C. ACKLANDIÆ.

Importations received direct for Unreserved Sale.

MESSRS. PROTHEROE AND MORRIS desire to call attention to the above ORCHIDS which are included in their Sale on TUESDAY NEXT, May 24. They have arrived in very fine condition.

On view morning of Sale, and Catalogues had.

Tuesday Next.

EXTENSIVE IMPORTATION of ORCHIDS.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Shuttleworth, Carder & Co. to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY NEXT, May 24, at half-past 12 o'Clock precisely, a grand Importation of CATTLEYA MENDELII, in very fine masses and splendid condition, including one of the largest masses ever imported, with over 200 Bulbs, very compact, and measuring 4 feet through; an extra fine importation of ODONTOGLOSSUM ALEXANDRÆ of the best type, O. GRANDE, LYCASTE SKINNERI, &c.

The Sale will also include 400 CATTLEYA DOWIANA, 250 C. AMETHYSTOGLOSSA, 200 C. ACKLANDIÆ, and other ORCHIDS received direct for unreserved Sale.

On view morning of Sale, and Catalogues had.

Wednesday Next, May 25.

GREENHOUSE and BEDDING PLANTS in variety. 10,000 Seeds of COCOS WEDDELLIANA, 3000 Double African TUBEROSES, LILIES, IRIS, BEGONIAS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Auction Rooms, 67 and 68, Cheapside, E.C., on WEDNESDAY NEXT, May 25, at Half-past 12 o'Clock precisely.

On view morning of Sale, and Catalogues had.

Friday Next.

CATTLEYA LABIATA.
LÆLIA PRÆSTANS, true.

MESSRS. PROTHEROE AND MORRIS will include in their SALE of ORCHIDS, on FRIDAY NEXT, May 27, a small importation of the above, received direct, in fine condition. Also two cases of Burmese ORCHIDS.

On view morning of Sale, and Catalogues had.

Friday Next.

ODONTOGLOSSUM HASTILABIUM
ANGRÆCUM SCOTTIANUM
VANDA CŒRULESCENS

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander, to SELL by AUCTION, at their Cental Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, May 27, at half-past 12 o'clock precisely.

A grand importation of ODONTOGLOSSUM HASTILABUM with bulbs of enormous size, and very distinct in appearance, the branching spikes on the plants will convey some idea as to the free flowering character of this magnificent Orchid. It produces a beautiful panicle of fragrant blooms, some 3 inches in diameter, sepals and petals very strikingly barred with purple lines, lip broad, white and purple, lasting a long time in perfection. At the same time will be offered a splendid well rooted lot of ANGRÆCUM SCOTTIANUM, several with flower-spikes; BATEMANNIA SPECIES, probably quite new from a hitherto unsearched district. A large importation of VANDA CŒRULESCENS, NANODES MEDUSÆ, VANDA DENISONIANA, TRICHOSMA SPECIES, CŒLOGYNE SPECIES, TRICHOPILIA SPECIES, and many other ORCHIDS of value.

On view morning of Sale, and Catalogues had.

Poyle Manor, Colnbrook.

MR. J. C. STEVENS will SELL by AUCTION, on the Premises as above, on WEDNESDAY, June 1, at half-past 12 o'Clock precisely, by Order of the Executors of the late Dr. Meadows, the Collection of ESTABLISHED ORCHIDS, comprising splendid specimens and rare species; also a fine lot of CROTONS, DRACÆNAS, PALMS, STEPHANOTIS, FERNS, EUCHARIS, AZALEAS, and other STOVE and GREENHOUSE PLANTS; No. 1 PULSOMETER or PUMPING ENGINE, &c.

On view the day prior to and morning of Sale, and Catalogues had on the Premises, and of Mr. J. C. STEVENS, Auctioneer and Valuer, 38, King Street, Covent Garden, London, W.C.

Thursday Next.—(Sale No. 7421.)

VALUABLE IMPORTATIONS of ORCHIDS.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, May 26, at half-past 12 o'Clock precisely, a superb lot of CATTLEYA SKINNERI, just received in fine order, comprising masses full of leaf, and very compact. This beautiful species is extremely floriferous, and specially adapted for exhibition purposes, its bright rosy-red flowers being very attractive and durable. At the same time will be offered a healthy importation of CATTLEYA GIGAS, with large broad and sound leaves, and eyes at perfect rest.

CŒLOGYNE SANDERIANA, possibly the finest of this magnificent genus; as many as twenty blossoms are produced on a spike, each individual flower being larger than the well-known C. cristata, and of snowy whiteness, as in C. cristata alba.

CŒLOGYNE FORSTERMANNI.—This novelty is one of our most beautiful introductions, producing twenty to thirty flowers on a spike, of the purest white, except the lip, which is yellow, striped with brown, forming a charming contrast. MASDEVALLIA SPECIES, CYPRIPEDIUM BOXALLI, LÆLIA DAYANA, ONCIDIUM MARSHALLIANUM, O. CUCTLLATUM MACROCHILUM, CYPRIPEDIUM SPECIES, CATTLEYA GASKELLIANA, and other valuable ORCHIDS.

On view morning of Sale, and Catalogues had.

Collection of Established Orchids without the least reserve.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, June 2, at half-past 12 o'Clock precisely, by order of Geo. F. Wilson, Esq., of Weybridge, in consequence of his hardy and half-hardy plants now requiring all his available time, his Collection of ESTABLISHED ORCHIDS, comprising Odontoglossums (amongst the O. Alexandræ will be found many grand and distinct varieties), Masdevallias, Ada aurantiaca, Cypripedium insigne Maulei, Cœlogynes, Pilumnas, &c.

On view morning of Sale, and Catalogues had.

Special Sale of Orchids in Flower and Bud.

MR. J. C. STEVENS begs to anuounce that his next SPECIAL SALE of ORCHIDS in flower and bud will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, June 15, and he will be glad if Gentlemen desirous of entering Plants for this Sale will send particulars as soon as possible.

Important Sale of an Exceptionally fine Collection of CHOICE SELECTED CATTLEYAS.

MESSRS. ARTINGSTALL AND HIND respectfully announce that they are instructed by O. O. Wrigley, Esq., to SELL by AUCTION, at the Manchester Botanical and Horticultural Society's Show Ground, Old Trafford, on MONDAY, June 6, at 2 o'Clock, the renowned COLLECTION of VALUABLE CATTLEYAS, which will be exhibited at the Whitsuntide Horticultural Exhibition, thus giving buyers an opportunity of inspecting and making a careful selection prior to sale. There are at least fifty distinct varieties of these magnificent Orchids, and it offers an opportunity to purchasers seldom met with.

Catalogues will be issued shortly. For further particulars, apply to Mr. BRUCE FINDLAY, Botanical Gardens, Old Trafford; or the Auctioneers, at their Offices, 45, Princess Street, Manchester.

Important Sale of the Woodlawn Collection of Valuable PLANTS, comprising several thousands of choice Orchids, Nepenthes, Sarracenias, Eucharis, Lapagerias, Ericas, Azaleas, and a general assortment of grand Stove and Greenhouse productions, which include some of the most rare and finest specimens in the country.

MESSRS. ARTINGSTALL AND HIND beg to announce that they are favoured with instructions from Joseph Broome, Esq., who is leaving Woodlawn, situate at Didsbury, near Manchester, to SELL by AUCTION, at 12 o'Clock noon, on TUESDAY, WEDNESDAY, and THURSDAY, June 21, 22, and 23, in the grounds of the above-named residence, the whole of the exceptionally fine COLLECTION of PLANTS.

Catalogues, which are in course of preparation, will be issued fourteen days prior to Sale, when they may be obtained, together with further particulars, on application (personally, or by post) to Mr. ALFRED COLE, Head Gardener; or from the Auctioneers, 45, Princess Street, Manchester.

Preliminary Advertisement.

MR. DAVID MITCHELL, HORTICULTURAL AUCTIONEER, Edinburgh, will DISPOSE OF, by PUBLIC AUCTION, on THURSDAY, June 9, a very fine lot of ORCHIDS, including some rare Hybrids and other choice things, all from the well-known Collection belonging to Messrs. Wm. Thomson & Sons, Clovenfords.

Particulars in future Advertisement.

Edinburgh, May 17, 1887.

FOR SALE, a compact MARKET NURSERY, containing eleven Houses recently built, well-heated and in good working order, situate in Northumberland Park, Tottenham. Lease fourteen years at £15 ground rent. Price £500.

T. ROCHFORD, Turnford Hall, Turnford, near Hoddesdon, Herts.

To Lovers of a Good Garden.

FOR SALE, a FAMILY RESIDENCE, containing 14 Rooms, standing in its own ground of about half an acre, planted with choicest Fruit Trees, Asparagus, and Seakale Beds. The most picturesque view near London, overlooking 40 acres of wood and water. Easy distance from two railways, also from tram and bus. For particulars apply, C. E. ELLIOTT, 36, Jewin Street, London, E.C.

FOR SALE, the old-established and well-known NURSERY BUSINESS so successfully carried on for upwards of sixty years at Ayr. The Grounds extend to about 40 Acres, adjoining the Railway Station, and are well stocked with saleable Trees and Shrubs.

Further particulars on application to IMRIE AND COMPANY, The Nurseries, Ayr, N.B.

TO LET, in Sleaford, with immediate possession, an extensive range of GREENHOUSES, Vinery, 76 feet long, 14½ feet wide, division in centre, and lean-to roof; Peach-house, 60 feet long, 25 feet wide, division in centre, circular roof; Forcing-houses, 72 feet long, 23 feet wide, divided into four, top and bottom-heat; good Potting-shed, large Soft-water Tank, Forcing pits, Cold Pits aud Frames, Kitchen Garden, about 1½ rood; all well Stocked; and would be Let to a suitable Tenant on a Lease.

Apply to Mrs. KNIGHT, Sleaford, Lincolnshire.

To Florists.

TO BE LET, for the Culture and Exhibition of Flowers and Plants under Glass, an extensive area of LAND adjoining Kennington Park, in front of South Place and Newington Terrace.

Apply to Messrs. MEYNELL AND PEMBERTON, Solicitors, 20, Whitehall Place, S.W.; or, to Messrs. BRIANT AND SONS, Estate Agents, 200, Kennington Park Road, S.E.

PROTHEROE AND MORRIS, HORTICULTURAL MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

Landscape Gardening.

H. F. MALLER (of the firm of B. Maller & Sons), late Pupil of the Crystal Palace School of Landscape Gardening, is prepared to FURNISH PLANS, or undertake any kind of the above work.—61, High Street, Lewisham.

To Contractors, Gardeners, and Others.

THE CHURCHWARDENS of St. Olave and St. John, Southwark, are PREPARED TO RECEIVE TENDERS for the LAYING-OUT (and maintaining for two years after completion), the disused BURIAL GROUND, Tooley Street, as an open space in accordance with Specification and Plans, which may be seen, and all other information obtained upon application to me, at my Office, 86, Queen Elizabeth Street, Southwark, any day after Tuesday, 24th inst. (Saturdays excepted), between the hours of 10 and 11 A.M., and 4 and 5 P.M. Tenders to be sent in on or before Monday, the 6th of June, proximo, addressed to me, and marked on the outside, "Tender for Laying-out Burial Ground." The Churchwardens do not bind themselves to accept the lowest or any Tender.

GEO. W. THOMPSON, Surveyor.

May, 1887.

To Farmers, Market Gardeners, and Others.

THE METROPOLITAN BOARD of WORKS have at their Main Drainage Pumping Station, situated upon the southern side of the Thames, at Crossness, near Abbey Wood, Kent, a very large quantity of SOLID MATTER, pressed from Sewage, which they are prepared to deliver, free of cost, to any parties sending either barges or carts for the same.

The Board will also, if desired, deliver the SEWAGE-CAKE, free of cost, to the Abbey Wood Station, on the North Kent Railway, but the Board will not pay or be responsible for the payment of any charges in respect of the carriage upon that or any other line of railway.

Parties desirous of obtaining a supply of the SEWAGE CAKE must apply to the Superintendent of the Pumping Station, at Crossness, who will arrange for either loading the Cake into barges or carts, or delivering it at the Abbey Wood Station, as may be required.

J. E. WAKEFIELD, Clerk of the Board.

Spring Gardens, May 16, 1887.

WANTED,

LARGE PALMS, TREE FERNS,

AND OTHER

ORNAMENTAL FOLIAGED PLANTS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

Are at present prepared to give ORCHIDS, or OTHER PLANTS, IN EXCHANGE for large overgrown PALMS, TREE FERNS, and other Plants of a similar class. Those who wish to take advantage of this offer should send full particulars **AT ONCE**, as,

AFTER THE NEXT FEW DAYS,

the Company will have no use for such plants, the present use for them being quite an exceptional one.

The Company have just received large and fine importations of EAST INDIAN and MEXICAN ORCHIDS, all in grand condition, and including magnificent masses and many rare and fine varieties.

CIRCULAR with full particulars on application to

THE VINEYARD & NURSERIES,

GARSTON, near LIVERPOOL.

CHEAP BEDDING PLANTS.
GERANIUMS, Zonal, strong autumn-struck plants, from single pots—Vesuvius (scarlet), Jean Sisley, Dazzler (crimson), Master Christine, Madame Vaucher, Happy Thought, 2s. per dozen, 12s. per 100; Miss Tottie Hardy (rosy-salmon), Queen of Pinks (magenta), Stour Valley Beauty (peach), 3s. per dozen.
PELARGONIUMS, show and decorative, named, fine plants, from single pots, 3s. per dozen.
LOBELIA (true), from cuttings, Emperor William, 2s. 6d. per 100, 20s per 1000.
DAHLIAS, Single, named sorts, of all shades of brilliant colours, including White Queen and Paragon, 2s. 6d. per dozen. 18s. per 100, from single pots; Double, best named show varieties, 2s. 6d. per dozen, 18s. per 100, from single pots.
CHRYSANTHEMUMS, selection of finest named Show varieties, strong, and well-grown, 2s. 6d. per dozen, 18s. per 100, from single pots. Package free. Plants allowed for carriage.
Terms cash. CATALOGUE gratis.
H. I. HARDY, Stour Valley Florist Grounds, Bures, Suffolk.

JOSIAH H. BATH offers the following varieties of SEED POTATOS:—

Rivers' Royal Ashleaf	Dalmahoy
Myatt's Prolific Do.	Early Don
Old Ashleaf	,, Bog
Early Shaw	York Regent
,, Goodrich	Scotch Do.
,, Rose	Dunbar Do.
Imperator	Fluke
Beauty of Hebron	Paterson's Victoria
White Elephant	Snowflake
Schoolmaster	Scotch Champion,

And other leading varieties. Prices upon application.
1 and 3, York Street, Borough Market, S.E.

Cheap Bedding Plants—Special Offer.
WILLIAM BADMAN offers as under, from Store-pots, all well-rooted, and fit for present potting. The present is a good time for making up losses sustained during the winter:—
VERBENAS, Purple, White, Scarlet, Crimson, Rose, 6s. per 100, 50s. per 1000; 12 choice named varieties, 8s. per 100.
LOBELIA Bluestone, pumila magnifica, true, from Cuttings, 2s. 6d. per 100, 20s. per 1000; Brighton Blue, fine, 3s. per 100, 21s. per 1000.
CALCEOLARIA Golden Gem, 5s. per 100, 40s. per 1000; Camden Hero, fine dark, 6s. per 100.
HELIOTROPE Jaun d'Amour, Miss Nightingale, dark, 6s. per 100, 50s. per 1000.
AGERATUM Imperial Dwarf, blue, 5s. per 100, 40s. per 1000.
COLEUS VERSCHAFFELTI, bedding crimson, 6s. per 100, 50s. per 1000.
IRESINE LINDENI, dark crimson, good bedder, 6s. per 100, 50s. per 1000.
PELARGONIUM Vesuvius, finest bedding scarlet, 8s. per 100, 75s. per 1000; Master Christine, 12s. per 100; Mrs. Levers and Jenny Dodds, fine pink, 10s. per 100; Henri Jacoby, best crimson, 12s. per 100; Madame Vaucher, white, 12s. per 100; Queen of Belgians, finest white, 3s. per dozen, 20s. per 100; Niphetos, bedding white, 12s. per 100; Waltham Seedling, Lucius, Jean Sisley, and White Vesuvius, 10s. per 100.
SILVER VARIEGATED May Queen (Turner's), Princess Alexandra, Flower of Spring, 12s. per 100; Little Trot, dwarf, 12s. per 100; Prince Silverwings, 10s. per 100.
GOLD-LEAF Crystal Palace Gem, 10s. per 100; Happy Thought, 12s. per 100.
BRONZE McMahon, Black Douglas, The Czar, the best bedders, 15s. per 100.
TRICOLOR Mrs. Pollock, 15s. per 100; Sophie Dumaresque, Lady Cullum, Sir R. Napier, 18s. per 100.
DOUBLES, F. V. Raspail, fine scarlet; M. Thibaut, pink; M. Baltet, best white, 12s. per 100.
TROPÆOLUM Vesuvius, 8s. per 100; coccinea elegans, best dwarf scarlet, 10s. per 100.
FUCHSIAS in twelve good named sorts, 8s. per 100.
PELARGONIUMS, Show and Decorative, from single pots, good, 20s. per 100, 3s. per dozen.
NOTE.—Not fewer than twenty-five of any one sort supplied at above rate. Packing included. Terms Cash.
Cemetery Nurseries, Gravesend, S.E.

Grand New Bedding and Winter-flowering
ZONAL GERANIUM,
"HER MAJESTY."
Deep brilliant scarlet flower, of good size and substance, produced remarkably free over a dark green zonate foliage; the habit is dwarf and branching, and very compact. Is a good bedder and winter-flowering plant. The effect is remarkable for its dazzling scarlet masses of fine flowers; every one who has seen it is struck with its fiery colour.
1s. each, or 9s. per dozen; 60s. per 100.
Good strong plants.
CHAS. BURLEY, Nurseries, Brentwood.

CLEARANCE SALE of healthy PALMS for Table and Conservatory Decoration.—LATANIA BORBONICA, SEAFORTHIA ELEGANS, and PHŒNIX RECLINATA, 12 inches high, 6d. each, 4s. per dozen, 25s. per 100; same kinds, 20 inches high, 1s. 6d. each, 6 for 8s., 12 for 14s. Packages and parcels post-free.
COCOS WEDDELLIANA, ARECA LUTESCENS, and EUTERPE EDULIS, 2s. to 5s. each; KENTIAS, 4s. to 10s. each; large PALMS, 3 feet to 6 feet high, 5s. to 50s. each. All of splendid value.
GARDENER, Holly Lodge, Stamford Hill, London, N.

Offer of a Large Stock of
PALMS and FOLIAGE PLANTS
to the Trade.
15,000 KENTIA BALMOREANA and FORSTERIANA, 45s. to 80s. per 100.
3,000 COCOS WEDDELLIANA, 45s. per 100.
4,000 EUTERPE EDULIS, 32s. per 100.
1,000 PHŒNIX RUPICOLA, in 48's, at £7 10s. per 100.
1,500 PHŒNIX RUPICOLA, thumbs, 60s. per 100.
ADIANTUM FARLEYENSE, at 40s. per 100.
ASPARAGUS PLUMOSUS NANUS, strong, at 72s. per dozen.
ASPARAGUS PLUMOSUS NANUS, in 60's, at £6 per 100.
A fine stock of DRACÆNA LINDENI, a few grand exhibition plants; also DRACÆNA LINEATA (true), plants from 4 to 7 feet, well feathered and perfect specimens. Also a few strong LAPAGERIA ALBA.
WILLIAM ICETON, Putney Park Lane, S.W., also Flower Market, Covent Garden, Stands 129 and 130.

The following Circular Letter has been addressed to the Gardeners of the United Kingdom:—

A SPECIAL AND IMPORTANT APPEAL.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

LONDON, *May*, 1887.

During the last season it was represented to the Committee of this institution by many of the Subscribers that some steps should be taken for allowing the Horticulturists of England an opportunity of testifying the respect they owe to their Sovereign by marking this eventful year in some special mannner.

After due consideration, the Committee came to the conclusion that the best plan of celebrating this interesting occasion would be by increasing the List of Pensioners, and making a Special Grant of £5 to each of the Pensioners, and also to each of the unsuccessful Candidates at the last Election.

This scheme met with general approval, and in January last the List of Pensioners was increased to 122 recipients, and the Committee trust to carry out the idea in its entirety by making the proposed Grant at the ensuing Anniversary Festival, to be held on 29th June next, on which occasion

BARON FERDINAND DE ROTHSCHILD, M.P.,

has most kindly consented to preside, when he hopes to be able to state that the wishes of the Members and the Committee have been realised, and that 133 poor and deserving Horticulturists will be permitted to participate in the general rejoicing that a Merciful and Gracious Providence has allowed Her Majesty to reign for the long period of fifty years.

To meet the expense thus entailed, the sum of £1200 is required, and several Noblemen and Gentlemen have already promised the sum of £250, providing the balance, £950, is attained by the 29th June, and, unless this sum is secured, the scheme will fall to the ground.

Under these *special circumstances*, the Committee take this opportunity of bringing the matter prominently before the Subscribers, feeling assured that those who take an interest in the Institution will second, to the best of their ability, the exertions of the Executive in their endeavours to alleviate the distress and minister to the comforts of old and deserving Gardeners.

To the affluent and generous lovers of Horticulture the Committee appeal with confidence, and to Gardeners they also appeal, in the hope that they will assist their poorer brethren.

Friends of the cause will kindly fill up the accompanying form and return it to the Secretary, who will on our behalf gratefully and thankfully acknowledge any contribution, no matter the amount.

JOHN LEE, *Chairman of Committee.*
HARRY J. VEITCH, *Treasurer.*

Donations and Collections already promised or sent towards the Jubilee Fund of 1887:—

	£	s.	d.
The DUKE of WESTMINSTER, K.G.	250	0	0
Baron FERDINAND DE ROTHSCHILD, M.P. ...	52	10	0
Lord REVELSTOKE	26	5	0
Baron SCHRODER	31	10	0
JAMES HUGHES, Esq.	21	0	0
JAMES McINTOSH, Esq.	31	10	0
HARRY J. VEITCH, Esq., Treasurer	31	10	0
N. N. SHERWOOD, Esq. (Messrs. Hurst & Son) ...	21	0	0
Mrs. W. GIBBS, Bristol	2	10	0
GEORGE ANDERSON, Esq., Sydney	5	5	0
A FRIEND	10	10	0
EDWD. KEMP, Esq., Birkenhead	1	1	0
ROB. JORDAN, Llanaway Gardens	1	1	0
W. SWANSBOROUGH, Glasslough Gardens ...	0	10	0
G. F. WILSON, Esq., Weybridge	5	5	0
Messrs. RAILTON AND CO., Melbourne, New South Wales, per N. N. Sherwood, Esq.	5	0	0
RICHARD CHRIMES, Esq., Rotherham	5	0	0
Messrs. JONES, Brynstedford, Conway	3	0	0
Messrs. WILDER, Sulham, Reading	2	2	0
Mr. A. C. BISHOP, Alresford	0	10	0
Sir C. H. STRICKLAND	1	0	0
Messrs. JAS. DICKSON AND SONS, Chester ...	1	1	0
J. G. GODWIN, Esq., Chester	1	1	0
J. BENTLEY, Esq., Barrow-on-Humber	1	1	0
JOHN COLEBROOK, William Street, S.W. ...	5	5	0
Messrs. THOMSON AND SONS, Clovenford, Galashiels	5	5	0
J. J. SMITH, Esq., Willow Lodge, Christchurch ...	2	2	0
Mrs. COWPER COLES, The Lodge, Bramdean ...	0	10	0
CHARLES CRAWSHAY, Esq., Hingham, Aylsham	1	1	0
J. WIGAN, Esq., Clare Lawn, East Sheen	5	5	0
JOHN SEDEN, Messrs. Veitch & Son, Chelsea ...	0	5	0
THAMES BANK IRON CO., Upper Ground Street	5	5	0
Miss FINDLEY, Brampton Speke, Exeter	1	10	0
E. HORNE, Esq., Reigate	0	10	0
Captain CHRISTY, Core Hill, Sidmouth	1	1	0
Miss ROBSON, Huntson, Maidstone	0	10	0
F. G. SAUNDERS, Esq., Caversham, Reading ...	1	1	0
JOHN C. NICHOLL, Esq., Merthyr Manor, Brigend	5	0	0
N. BLANDFORD, Moor Hill Gardens, Southampton	1	10	0
THOS. LUNT, Ardgowan Gardens, Greenock ...	2	0	0
R. STRAND, Denne Hill Gardens, Canterbury ...	0	5	0
JAS. PRUST, Daglensworth Gardens, Cirencester ...	1	1	0
B. SMITH, Bothys Park, Chertsey	0	10	0
C. COOPER, Seed Merchant, Plymouth	1	1	0
JOHN CHOWN, The Gardens, The Hollies, Weybridge	0	10	0
J. SHEPSTONE, High Elms Gardens, Watford ...	0	10	6
JOHN MURRELL, Leigh Park Gardens, Bristol ...	0	4	0
E. CORDING, Stanlake Gardens, Twyford	0	2	6
JESSE WILLARD, Holly Lodge Gardens, Highgate	0	10	6
WM. BROWN, Merivale Gardens, Atherston ...	1	1	0
JOHN HEAL, Messrs. Veitch & Sons, Chelsea ...	0	5	0
CECIL BOYLE, Esq., Broghill, Wimbledon ...	5	0	0
EDWD. MUCKLOW, Esq., Castle Head, Lancashire	1	0	0
B. OSBORN, Holm Park Gardens	0	5	0
EDWD. SHEPSTONE, Charlton Gardens, Nailsea...	0	10	0
OBADIAH RICH, St. Catherine's Court, Bath ...	1	1	0

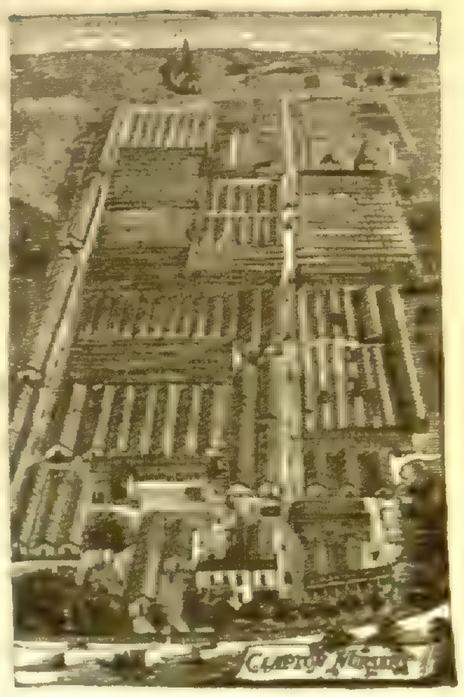
JAPANESE IRIS.
These lovely Iris create quite a sensation when seen in flower; they are really magnificent, and the majority of the 96 varieties I have collected in Japan are quite unknown in this country, and the result of hybridisation by those clever gardeners, the Japs. To those fond of showing or obtaining certificates for novelties, these plants offer great advantages, as, in addition to being quite new, they are plants daily gaining favour with the public. The whole collection is offered at the low price of £10. Special plants, 2s. 6d. and 5s. each. A collection of 40, to contain a fair proportion of novelties, £3.
JAPANESE MAPLES.
I have been successful in importing some magnificent Maples of all colours, beautifully variegated in all shades of crimson, chocolate, brown, green, and variegations of white and green, green and pink, yellow and green; in fact, all possible shades. They are beautiful decorative plants, and form fine subjects for grouping. There are 30 varieties, and are offered at the low price of 3s. 6d., 5s., and 7s. 6d. each. They are really novelties.
WM. GORDON,
PLANT IMPORTER, THE NURSERIES,
TWICKENHAM, MIDDLESEX.
Experienced Gardeners recommended.

TEA ROSES.
Good plants, in 5-inch pots.
HER MAJESTY and W. F. BENNETT, 30s. per dozen.
SUNSET, GRACE DARLING, NIPHETOS, ISABELLA SPRUNT, DEVONIENSIS, Climbing DEVONIENSIS, MARECHAL NIEL, SAFRANOT, MADAME FALCOT, W. A. RICHARDSON, ETOILE DE LYON, &c. } 18s. per dozen.
A personal inspection invited.
JOHN STANDISH AND CO., Royal Nurseries, Ascot.

CABBAGE PLANTS.—Very fine autumn sown Enfield Market, Wheeler's Imperial and Robinson's Champion, 3s. 6d. per 1000, 30s. per 10,000, on rail; sample 100, 1s. 6d. free. Aigburth BRUSSELS SPROUTS, Green KALE, Golden Globe and Norwegian SAVOY, Tripoli ONIONS, Cabbage LETTUCE, and Purple BROCCOLI, 5s. per 1000, 45s. per 10,000, on rail; sample 100, 1s. 6d. free. Spring sown from cold frames, Early London CAULIFLOWER, 7s. 6d. per 1000, on rail; 1s. per 100 free. Red and White CELERY, 8d. per 100, free; TOMATOS, 6d. per dozen, 3s. 6d. per 100, free; Telegraph CUCUMBER, 3 for 1s., free; VEGETABLE MARROW, 4 for 1s., free. Cash with order.
EDWARD LEIGH, Cranleigh, Surrey.

BEGONIAS A SPECIALTY.—LAING'S BEGONIA TUBERS. Awarded Two Gold Medals. Unequalled quality. Named Singles, from 18s. to 42s. per dozen; unnamed seedlings, selected to colour, for pots, 12s., 18s. and 21s. per doz.; bedding, selected to colour, 9s. per dozen; bedding, choicest mixed colours, 6s. per dozen; choicest named Doubles, from 42s. per dozen; unnamed, very choice selected, 24s. and 30s. per dozen; choicest mixed, 18s. per dozen. CATALOGUES gratis.
JOHN LAING AND CO., Nurseries, Forest Hill, S.E.

ORCHIDS
a Specialty.
Stock immense in extent, fine in quality, moderate in price. Inspection invited.
274,600 superficial feet of glass.
Hugh Low & Co., Clapton Nursery, London, E.; also Bush Hill Park Nursery, Enfield.



ROSES IN POTS;

all the best New and Old English and Foreign sorts, from 18*s.* to 36*s.* per dozen.

Descriptive List free on application.

RICHARD SMITH & CO.,
WORCESTER.

TO THE SEED TRADE.

LAWSON'S FIELD ROOT SEEDS

PETER LAWSON & SON

(LIMITED),
SEED GROWERS and MERCHANTS,
EDINBURGH,

Will be glad to submit special offers of their well-known stocks of SWEDE, YELLOW, HYBRID, and WHITE-FLESH TURNIPS. Also select MANGELS of superior quality.

Wholesale CATALOGUES upon application.

Please address—
PETER LAWSON & SON (Limited),
EDINBURGH.

"PRIDE OF PENSHURST" CARNATION.

Awarded First-class Certificate Royal Horticultural Society.

Acknowledged by all to be the most beautiful YELLOW SELF in cultivation. Suitable for either pot culture or beds. Perfectly hardy; the flowers are large, of best form, and produced in abundance. As a border variety it has no equal, whilst its lovely colour makes it invaluable for cutting and market work. Strong Plants, established in pots, 10*s.* 6*d.* per dozen; Sample Plant, post-free for 15 penny stamps.

ADDRESS— **F. WEBBER,**
QUARRY HILL NURSERY, TONBRIDGE, KENT.

CUT SPECIMEN FLOWERS

OF

BARR'S

BEAUTIFUL

DAFFODILS

BY POST.

In Spring we have numerous applications for these, but hitherto have been unable to attend to such; now, however, since the naming and arranging of our extensive Collection of Daffodils has been completed, we are prepared to send, on application, during April and May, Cut Specimens, correctly named, and carefully packed, at a charge of 3*s.* 6*d.* per dozen flowers (not less than one dozen). We estimate that this charge will cover all expense of postage, boxes, and labour, as we desire no profit in sending these flowers to the public, but are only desirous that these floral beauties should be more widely known. The flowers cannot be sent in bud, as this would prevent us proving our "Stocks," which is done annually; but they will be fresh, and packed so as to ensure their arriving in good condition.

DESCRIPTIVE CATALOGUE of BARR'S DAFFODILS free on application.

BARR & SON,

12 & 13, King St., Covent Garden, W.C.

CARTERS' BRILLIANT PRIZE CINERARIA.

AWARDED

Silver Medal Royal Botanic Society	1883
Banksian Medal, Royal Horticultural Society ...	1883
Extra and Second Prize, Crystal Palace	1884
Large Bronze Medal, Royal Botanic Society... ...	1884
Banksian Medal, Royal Horticultural Society ...	1884
Banksian Medal, Royal Horticultural Society ...	1885
Large Bronze Medal, Royal Botanic Society	1885

FINEST MIXED SEED, containing Every Shade of Colour.
Price 1s. 6d., 2s. 6d., 3s. 6d. & 5s. pkt., post-free.

SEEDSMEN TO H.M. THE QUEEN AND H.R.H. THE PRINCE OF WALES.

237 & 238, HIGH HOLBORN, LONDON.

1887—DAHLIAS—1887

Present Season's Catalogue is now ready and may be had gratuitously upon application.

It is made up as follows:—

CACTUS, OR DECORATIVE DAHLIAS.

To this section I pay a very considerable amount of attention, and I am, in the present season's Catalogue offering some two dozen really first-class and showy varieties, perfectly distinct from the Shows and Fancies, and all, more or less, following the style of the well-known old Cactus variety, Juarezi. The new varieties of the present season are especially deserving of notice.

POMPONS, OR BOUQUET DAHLIAS.

My collection of these is one of the most complete in the trade, consisting of about three dozen varieties of really first-class, distinct sorts, all invaluable for bedding and for cutting.

SHOW AND FANCY DAHLIAS.

My collection of these includes all the well-known old varieties, as well as the best of the new ones.

SINGLE DAHLIAS.

The collection is this year considerably improved by the addition of a dozen exceptionally choice new sorts, which are offered in this year's Catalogue for the first time. In addition to these my Catalogue comprises all the choicest of the varieties of previous years' introductions.

THOMAS S. WARE,

HALE FARM NURSERIES,
TOTTENHAM, LONDON.

FERNS A SPECIALTY.

An IMMENSE STOCK, in SPLENDID CONDITION.

ILLUSTRATED CATALOGUE, containing "Hints on Fern Cultivation," 1*s.*

SMALLER CATALOGUE, of over 1300 species and varieties, including Descriptive "LIST OF NEW, RARE, AND CHOICE FERNS," and "HARDY NORTH AMERICAN FERNS," free on application.

W. & J. BIRKENHEAD,

FERN NURSERY, SALE, MANCHESTER.

CUTBUSH'S MILL-TRACK MUSHROOM SPAWN.—Too well known to require description. Price, 6*s.* per bushel (1*s.* extra per bushel for package), or 6*d.* per cake; free by parcel post, 1*s.*

None genuine unless in sealed packages and printed cultural directions enclosed, with our signature attached.

WM. CUTBUSH AND SON (Limited), Nurserymen and Seed Merchants, Highgate Nurseries, N.

Look, Gardeners! Look!

The most productive, the largest, and the best flavoured PEA in cultivation is

SMITH'S "EPICUREAN VICTORY."

This is the best month to sow this unequalled variety, which is now reduced to half-price, viz., 1*s.* 3*d.* and 7½*d.* per packet, post-free. Circular containing nearly 100 testimonials sent upon receipt of address. Gentlemen's Gardeners, especially Exhibitors, are earnestly invited to peruse this Circular. Please note: Money returned in full if any purchaser can match them for size and appearance. Address,

JAMES SMITH, Wallands Park Gardens, Lewes.

J. CLARKE, NURSERYMAN, SEEDSMAN, and FLORIST, Albion Nursery, Hale Road, Farnham, offers the following:—

1 ACALYPHA MUSAICA
1 TABERNÆMONTANA FLORE-PLENO
1 THUNBERGIA HARRISII
1 CISSUS DISCOLOR
2 CLERODENDRON BALFOURII
1 BOUGAINVILLEA SPECTABILIS
1 CYCAS REVOLUTA.

The above are Specimen Plants, and in good health, suitable to Exhibitors and Nurserymen. Particulars, apply to me.

FREESIA REFRACTA ALBA.—20,000 just received from the Cape. Fine sound Bulbs. Trade price, 6*s.* per 100, 50*s.* per 1000. Carriage paid.

DOUBLE AFRICAN TUBEROSES, 6*s.* 6*d.* per 100, 53*s.* per 1000. Carriage extra.

LILIUM AURATUM, just to hand, in fine condition. Sound flowering Bulbs, mixed sizes, 16*s.* 6*d.* per 100. Carriage extra.

W. H. HUDSON,
Wholesale Growers' Agent, High Road, Lower Edmonton, London.
Established 1877.

THE FOLLOWING FINE

STRONG HEALTHY PLANTS

TO BE SOLD CHEAP.

ALTERNANTHERA—	
PARONYCHIOIDES AUREA	720
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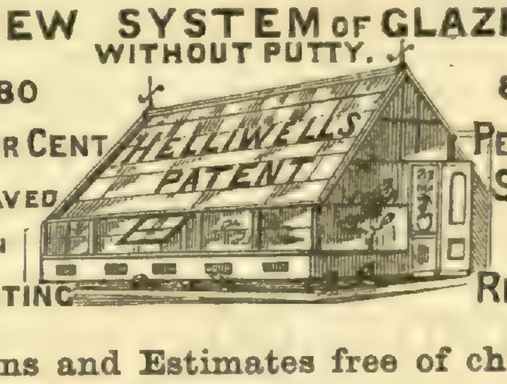

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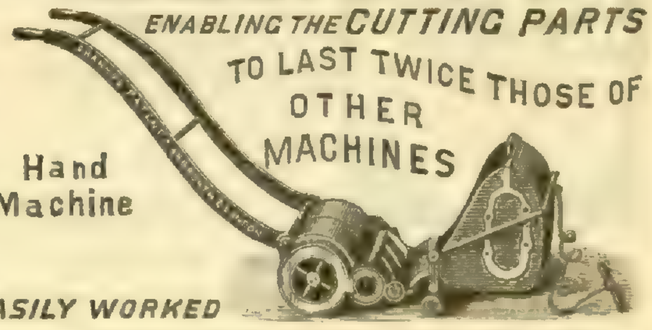

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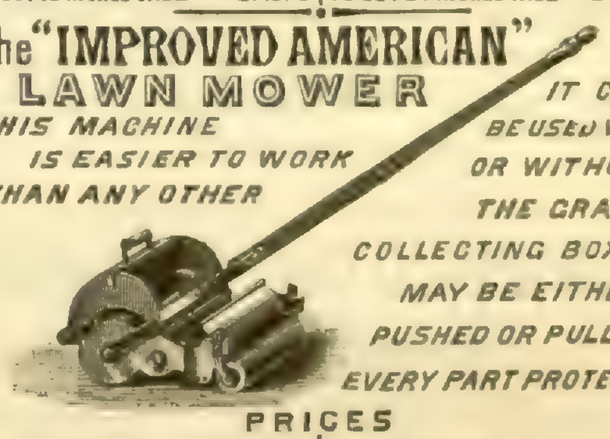

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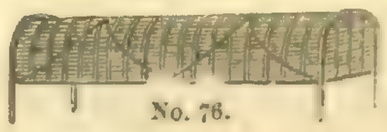

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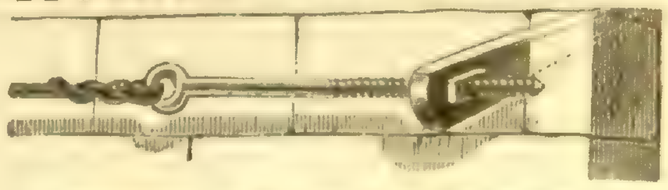

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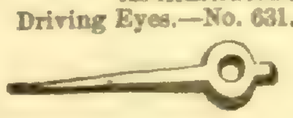

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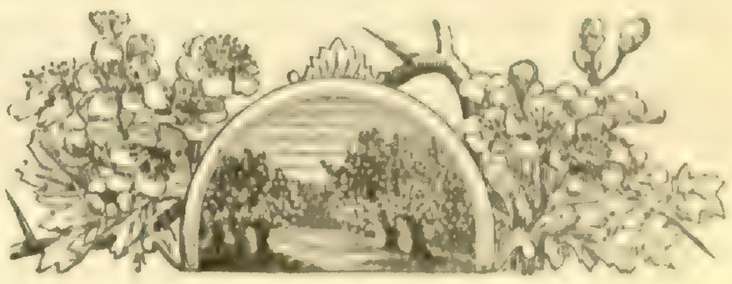

THE

Gardeners' Chronicle.

SATURDAY, MAY 21, 1887.

ROSES: A FORECAST.

LATE, plentiful, and good may now with tolerable certainty be writ large across the fair face of the approaching Rose harvest. In part at least owing to the persistent severity of the past winter the Roses, on the whole, have slept well, and to this long and profound sleep they owe very much of their present security and unusual vigour. The winter has severely tested tender Roses, and the more tender portions of those that are hardier. Late growing Teas and perpetuals have had their late autumn or winter shoots pruned back almost to earth by the frost, as if a keen-bladed knife had been swooped over them. But these severe climatal prunings husband force through concentrating it into smaller areas, and this works in favour of finer blooms for showing, &c. No doubt in not a few examples, this spring, climatal injuries rather than the cultivator's judgment have determined the point to cut back to; and even when this has been reached, the black pith has pointed to a lower cut or depth still, and this latter has, in not a few cases, taken us to the ground line. But even this, at least in the case of Teas, may prove a future advantage, as such beheaded plants throw up enormous heads of the finest blooming shoots. And in the case of other Roses it is of no practical use leaving shoots in which the pith is blackened by frost, for the ultimate point of health, vigour, and usefulness, among Rose shoots, cannot be reached whilst a speck of blackened or discoloured pith remains on the plant. The bark may be without spot, the wood perfect in colour, form, and substance; but if the pith be injured, cut back until it is found sound, unless you would have your Rose prospects blighted, and your Rose shoots dying back all the summer and winter. The time of this Rose harvest is quite another matter. Writing on May 16 in East Anglia, after a look round, I would say it must be late—few Roses, apparently, from the open, and hardly any Roses for showing this year in June, except from warm walls.

Still in horticulture as in other things no one needs to be told how often the unexpected

happens, and he would be a reckless writer who would assign limits to the fostering character of June weather. The Roses are clean as yet—exceptionally so—neither blight, mildew, fly, rust, nor grub have put in an appearance in the open. Mildew and aphides, however, have been more prevalent indoors than usual—especially the former. Teas in the open are abnormally close to the ground, and, as well as late Teas on the walls, exceptionally strong and making rapid progress—Maréchal Niel, Safrano, and Gloire de Dijon, taking the lead, and the others following in due course. So soon as the wind changes for good, and a little more warm rain falls, there will be a wonderful move forwards among all sorts and conditions of Roses, and, barring unforeseen accidents, one of the most brilliant harvests of late years will be gathered in.

Comparative Hardiness of Tea and Hybrid Perpetual Roses.

In those times, before everything got mixed up until hardly any one but the Editor knows who's who, or what's what, the veriest novice was positive on this one point at least—that Tea Roses were tender, and hybrid perpetuals were hardy. Nor did they rest in faith; they acted on it, and every autumn any Tea or China Rose left in the open for the winter was duly protected by one, several, or many coverings, while the perpetuals were left to shift for themselves—and a very good and safe shift they mostly made of it. But tender and all sorts of mixed bloods have been poured into our Roses, with the result that their sap has become a sort of world-wide stirabout of all the climates if not of all the good qualities of the great Rose race, so that it is almost impossible to predicate of any novelty beforehand whether it is hardy or not. Were proof beyond quibble or question, needed of this, it may be found in the question so often put—Which are the hardiest, the Teas or the hybrid perpetuals? Nor is the answer so easy as might appear on the face of it. The very name hybrid perpetual furnishes a key to the difficulty. We are not dealing with a pure-blooded species, but one mixed and crossed almost to infinity; and many, perhaps most, of these crosses have been used for the sake of form, size, and colour.

It may probably be said, with equal truth and safety, that not one of them has been employed for the purpose of improving the constitution or imparting greater hardiness to the Rose. Subjected to such influences through a series of years it is little wonder if any particular class of Roses, looked upon as hardy when counted by scores of varieties, should have become tender when multiplied by means of many tender parents on both sides into thousands. Some might reply that Teas have been subjected to similar processes of multiplication and rapid production. This will not, however, be found to be the case. There have been fewer attempts and perhaps less necessity for pouring foreign blood into Teas, and, what is more to the point, it has not been done to anything like the same extent.

I venture to add, subject to correction, of course, that probably the Tea Rose is the least, while the hybrid perpetual is the most, mixed of all our classes or sub-species of Roses. The Teas also approach more closely to a uniform standard of hardiness than the hybrid perpetuals. It may likewise be doubted whether the hardiness of Teas has sensibly varied within the experience of modern cultivators, while that of the hybrid perpetuals varies almost from year to year and with any new addition made to them, making due allowance for the unnatural tenderness begotten in new varieties from the strain to which they are subjected to enforce their rapid increase; and allowing time for them to settle down into their normal hardiness, it must be allowed that most modern perpetuals are less hardy than the older ones, and to not a few of the Teas.

Choosing one old and popular Tea, the Gloire de Dijon, and ranging round it such varieties as the following, most, if not all such, would be severely injured or wholly destroyed by the frost, while the Glory would be left solely uninjured:—Lady Mary Fitzwilliam, Lady Suffield, Marie Finger, Countess of Rosebery, François Michelon, Marie Baumann, La France, and the three whites of the Baroness Rothschild kind, Merveille de Lyon, Mabel Morrison, and the White Baroness.

And yet the Teas are most unfairly handicapped with far later growth than the so-called perpetuals in such contests against climate; for while the perpetuals are mostly so in name only, and are dormant in the autumn, the Teas are perpetual growers and bloomers in fact, and run their latest buds and blooms right into the frosts and snows of winter. Caught by the cold in this state, they are heavily hit in their most vulnerable condition, hence it is little marvel if Teas are often cut down to the ground-line, while perpetuals appear to be little injured.

Things, however, are often different to what they seem in these Rose freezings. The wood and bark of perpetuals often appear but little injured, while the pith is frost-stained to a much lower depth, and ultimately it will be found that the shoots will die back to the line of injury to the pith. Hence, in assessing the particular hardiness of different species and varieties of Roses we must be less guided by the mere condition of the tops, and more by the freshness of the base-buds and soundness of the collars of the plants. Judged by such practical tests, it will be admitted that the Teas will often secure the prize for hardiness over many of the perpetuals in a canter. *Rosa.*

Plants New or Noteworthy.

URSINIA PULCHRA, *N. E. Br.* (SPHENOGYNE SPECIOSA, *Knowles and Westcott*).*

This charming annual is an old and well known plant to gardeners, although, strange to say, it is almost unknown to botanists, for besides the authors quoted below I cannot discover that any botanist has taken any note of the plant, and it is not mentioned in Harvey and Sonder's *Flora Capensis.* This may perhaps be attributed to the fact that I am unable to match it with any South African specimens in the Kew Herbarium, so that the locality where it occurs wild is at present unknown, but I should hazard a guess that it probably hails from either Namaqualand or the district of Ceres, neither of which has been well explored botanically. According to Knowles and Westcott, and Paxton, this plant was introduced about the year 1836; Paxton states that it was asserted by some to have been introduced from South America, and by others from South Africa, which latter, as above indicated, is doubtless its true home. Specifically it is nearly allied to Ursinia anthemoides, but differs in having larger flower-heads, the ray florets yellow on both sides (and not purple beneath as in U. anthemoides), and the involucral scales rather more numerous, slightly narrower, the outer ones with very pale brown margins, instead of dark brown, and the inner ones with much larger membranous tips, the leaves and habit of the two plants are very similar; the flower-heads are 1½—2 inches in diameter, the ray being bright yellow with a dark purple-brown spot at the base, and the disc darker coloured.

Since Sphenogyne cannot be maintained as a distinct genus apart from Ursinia, this beautiful plant requires a new specific name under that genus, as there is already another and equally beautiful species bearing the name of Ursinia speciosa, so I have changed the name as above. There are numerous other species of Ursinia, most of which are well worth introducing, and several of them exceedingly beautiful. *N. E. Brown, Herbarium, Kew.*

* *Sphenogyne speciosa*, Knowles and Westc., *Floral Cabinet*, 1838, ii., p. 131, pl. 77; and Paxton's *Magazine of Botany*, 1839, vi., p. 77, with plate. As it will be a matter of great convenience, both to gardeners and botanists, to have an uniform nomenclature, I take the present opportunity to refer all the other species of Sphenogyne to Ursinia as follows, retaining the species with their synonyms nearly as limited by Harvey in the *Flora Capensis:*—S. abrotanifolia, R. Br. = U. abrotanifolia, Spreng. S. anethifolia, Less. = U. anethifolia, N. E. Br. S. anethoides, DC. = U. anethoides, N. E. Br. S. anthemoides, R. Br. = U. anthemoides, Poir. S. brachyloba, G. Kunze = U. brachyloba, N. E. Br. S. brachypoda, Harv. = U. brachypoda, N. E. Br. S. calendulæflora, DC. = U. calendulæflora, N. E. Br. S. chamæmeloides, DC. = U. chamæmeloides, N. E. Br. S. chamomillæfolia, DC., and var. elongata, Harv. = U. chamomillæfolia, N. E. Br., and var. elongata, N. E. Br. S. ciliaris, DC. = U. ciliaris, N. E. Br. S. concolor, Harv. = U. concolor, N. E. Br. S. coronopifolia, Less. = U. coronopifolia, N. E. Br. S. crithmifolia, R. Br., and vars. grandiflora, Harv., and trifurcata, DC. = U. crithmifolia, Spreng., and vars. grandiflora and trifurcata, N. E. Br. S. dentata, R. Br., and var. setigera, Harv. = U. dentata, Poir, and var. setigera, N. E. Br. S. discolor, Less. = U. discolor, N. E. Br. S. Dregeana, DC. = U. Dregeana, N. E, Br. S. Eckloniana, Sond. = U. Eckloniana, N. E. Br. S. filipes, E. Mey. = U. filipes, N. E. Br. S. fœniculacea, Less., and var. pallida, Harv. = U. fœniculacea, Poir, and var. pallida, N. E. Br., S. heterodonta, DC. = U. heterodonta, N. E. Br. S. hispida, DC. = U. hispida, N. E. Br. S. incisa, DC. = U. incisa, N. E. Br. S. leptoglossa, DC. = U. leptoglossa, N. E. Br. S. macropoda, DC. = U. macropoda, N. E. Br. S. natalensis, Sch. Bip. = U. natalensis, N. E. Br. S. nudicaulis, Less., and var. alpina, Harv. = U. nudicaulis, N. E. Br., and var. alpina, N. E. Br. S. odorata, R. Br. = U. odorata, Spreng. S. paleacea, Less. = U. paleacea, Poir. S. pauciloba, DC. = U. pauciloba, N. E. Br. S. pilifera, DC. (not of Less.) = U. crithmoides, Poir. S. pilifera, Less. (not of DC.) = U. pilifera, Poir. S. pinnata, Less. = U. filiformis, Griessel. S. punctata, Less. = U. punctata, N. E. Br. S. pusilla, DC. = U. pusilla, N. E. Br. S. quinquepartita, DC. = U. quinquepartita, N. E. Br. S. rigidula, DC. = U. rigidula, N. E. Br. S. scapiformis, DC. = U. scapiformis, N. E. Br. S. scariosa, R. Br. = U. scariosa, Poir. S. sericea, Less. = U. sericea, N. E. Br. S. serrata, DC. = U. serrata, Poir. S. subhirsuta, DC. = U. subhirsuta, N. E. Br. S. tenuifolia, DC., and var. heterochroma, Harv. = U. tenuifolia, Poir., and var. heterochroma, N. E. Br. S. tridentata, Harv. = U. tridentata, N. E. Br. S. tritida, Less. = U. trifida, N. E. Br. S. trifurca, Harv. = U. trifurca, N. E. Br. S. tripartita, DC. = U. tripartita, N. E. Br. S. versicolor, DC. = U. versicolor, N. E. Br. *N. E. Brown.*

Tillandsia vestita, *Cham. et Schlecht., in "Linnæa,"* xviii., 423; *Mart. et Galeotti, "Enum.,"* ii., 8; T. Schiedeana, *Stendel, "Nomen.," edit.* 2; T. flavescens, *Mart. et Galeotti, loc. cit.*

This has been imported by Messrs. Shuttleworth, and has just flowered at Kew. It is a native of the mountainous regions of Central Mexico. It belongs to the sub-genus Platystachys, and is allied to T. pruinosa, Sw.; T. bulbosa, Hook.; and T. setacea, Sw. (*Refug. Bot.*, t. 288).

Basal leaves spaced out on a short stem, linear-subulate, erecto-patent, 5—6 inches long, acuminate, ¼ inch broad above the base, deeply channelled in the lower half, persistently albo-lepidote all over. Peduncle 3—4 inches long; lower bract-leaves few, green, with subulate free points; upper small, red, entirely adpressed. Spike simple, erect, distichous, 2 inches long, exclusive of the corollas; bracts oblong-lanceolate, imbricated, bright red, naked. Calyx shorter than the bract. Petal-blades forming a cylindrical bright yellow tube protruded 1 inch from the bract. Stamens and style exserted. *J. G. Baker.*

Orchid Notes and Gleanings.

POGONIA FORDII.

In the Orchid collection at Kew this interesting and pretty species is now in flower. In colour the petals and sepals (which are similar in outline, linear-pointed) are yellowish, and the lip white and

rose. As in the other species, the leaves are produced after the flowers had faded. The foliage in P. Fordii is shortly stalked, plaited by about a dozen strong nerves, the upper surface being dull brownish-green and purple, sparsely clothed with crystalline cellular hairs, and the under-surface rose-coloured. It is a native of Hong Kong, and is figured in the *Botanical Magazine*, t. 6851, under the name of P. pulchella.

DENDROBIUM UNDULATUM.

This fine Australian Orchid is one of the most remarkable members of the genus, and is certainly very handsome. A fine drooping raceme just to hand measures 16 inches in length and bears thirty of its remarkable flowers, which last long in perfection. They measure 2 inches across, the colour being a peculiar bronzy greenish-brown. All the segments are twisted and very much undulated, the petals exceeding the sepals in length and the lip being rather short. Unfortunately, it is one of the giants of the genus, too large for establishments where space is limited. A note says the pseudobulbs are 4—8 feet in height, and 4 inches in circumference at the thickest part; the leaves roundish, 4 inches long, and about 4½ inches across, very thick and leathery, and bright green in colour. A plant well furnished with its large drooping racemes would be a remarkable sight.

"THE BOTANICAL MAGAZINE."

(*Continued from p.* 642.)

As it would obviously carry me too far if I examined each volume, even if I mentioned only two or three plants, I propose a leap of ten years, which brings us to the forty-third volume, and the year 1816. Meanwhile, I should mention, the magazine had become the property of Samuel Curtis, a florist of Walworth, and first cousin of William Curtis, whose only daughter he married. The name S. Curtis first appears on the plates in January, 1811. Sydenham Edwards continued to act as sole artist up to 1815, when, owing to some misunderstanding, he severed his connection with the *Botanical Magazine*, and founded the *Botanical Register*. This defection must have been a serious loss to the *Botanical Magazine*, independently of the competition of another rival publication; for it is no easy matter to fill the place of a good botanical artist. I have no actual evidence that the circulation diminished, though there is little doubt that it must have, with the numerous competitors in the field alluded to a little further on. However, it is clear from the quality of the drawing and the lack of novelty in the subjects illustrated in the volumes immediately following, that both editor and publisher had to work under great difficulties. Taking the first volume of the new series (xliii. of the whole work), which contains the matter of two volumes of the latter part of the first series, we find it scarcely equal in interest to the very earliest volumes. With very few exceptions the plants are only of botanical interest, yet they are not botanically figured, that is to say, no botanical details are given.

Passing to the forty-sixth volume, we find the plates in the latter part, beginning with 2079, signed "J. Curtis"—who, as Dr. Albert Curtis informs me, was no relation to the founder of the magazine. His contributions to the *Botanical Magazine* have all the appearance of very early efforts, and the subjects are mostly poor. With few exceptions, J. Curtis furnished the drawings for succeeding volumes, nearly to the end of the fifty-third, and had it not been for the literary and occasional artistic contributions of Dean Herbert, Dr. Greville and others, the magazine would have been a sorry affair indeed. Towards the end of this period various members of the Curtis family, including A. C. Curtis, a daughter of Samuel, and the mother of Dr. Albert Curtis, of Staines, contributed a few plates, and we find the names E. Duncombe, R. K. Greville, and others. But what is a greater surprise, the names of Sydenham Edwards and James Sowerby, both of whom were now dead, reappear in the forty-ninth volume: see 2328 by Sowerby, and 2346 by Edwards. There are several plates from drawings made by Edwards early in the century; the last I have detected being Daviesia acicularis (2679), published in 1826. Plate 2683 (Hesperis grandiflora) was drawn by J. Sowerby, and the letterpress accompanying it, including generic and specific characters, consists of ten lines! The *Botanical Magazine* was evidently, then, exceedingly near extinction; but powerful aid was at hand, and, phœnix-like, it suddenly far outshone the glory of any period of its previous existence. Dean Herbert furnished drawings and letterpress for an entire part, which equals if it does not surpass anything that had been accomplished since the proprietor had lost the services of Sydenham Edwards. Then, on plate 2689, we first meet with the initials W. J. H.—William Jackson Hooker! This event signalises the beginning of a new and flourishing era in botany and horticulture, the history of which belongs to my next period.

Bare mention has been made of Sir Joseph Banks' introductions into our gardens. He and Solander, with Captain Cook, landed in Botany Bay, New South Wales in 1770. George Caley, a botanical collector, was subsequently supported by Banks during a ten years' residence there. Menzies, who was attached to Vancouver's expedition, collected in Western Australia and other parts of the world some twenty years later. To them succeeded Robert Brown, "*Botanicorum facile Princeps*," who accompanied Flinders, leaving England in 1801, and returning in 1805 with immense collections of dried plants, almost wholly Australian. Through him, too, English gardens were greatly enriched with Australian plants, especially such as could be raised from seed; and, as we learn from the second edition of Aiton's *Hortus Kewensis*, Peter Good succeeded in introducing many West Australian plants about the same date.

Nevertheless, what had been accomplished in this direction was merely a foretaste of what was to come, and was the incentive to further exertions. In 1814, when the political horizon looked clearer, Aiton and Banks induced the Government to sanction their proposal to send Allan Cunningham and James Bowie to the southern hemisphere as botanical collectors. After spending nearly two years in Brazil, Bowie proceeded to the Cape of Good Hope, and Cunningham to New South Wales,* where he met with Charles Fraser, another labourer in the same field.

The result of the combined efforts of these and other contemporaneous and previous collectors was, as already pointed out, a deluge of bulbous and hard-wooded plants, the latter of the orders Ericaceæ, Epacrideæ, Proteaceæ, Leguminosæ, Myrtaceæ, Rutaceæ and various others. The hard-wooded element survived the bulbous, and occupied a prominent place in most gardens of any pretension down to about the year 1860.

KINDRED ENGLISH LITERATURE FROM 1801 TO 1826.†

I have shown that towards the end of this period the *Botanical Magazine* had ebbed its lowest since its foundation. That this was not due to a corresponding fall or stagnation in flower gardening will be apparent from what follows. The loss of Sydenham Edwards, the artist, coupled with the great age of Dr. Sims, the editor, would be sufficient to account for its decay; but it also lacked the support of the leading horticultural establishments, and rival publications for a time took the lead.

Francis Bauer, an Austrian, and brother of Ferdinand Bauer, the artist of Sibthorp's magnificent *Flora Græca*, as well as of Flinder's *Voyage to Australia*, was appointed botanical painter to the King at Kew towards the end of the last century; and the work of these two artists has rarely been equalled, and perhaps never excelled. Francis alone was intimately connected with horticulture. His first work was *Delineations of Exotic Plants*, cultivated in the Royal Gardens, Kew. The date on the title-page of this book is 1796, but on the authority of Pritzel it was issued at intervals from 1791 to 1800, while Daydon Jackson gives the dates as 1793 to 1801.* It is a most sumptuous work, of large folio size, and the figures are all of Heaths. Only thirty plates were published, and most of the original drawings are in the Kew copy. Another work by the same artist is the *Strelitzia Depicta*, consisting of four folio plates, the original price of which was ten guineas. Later, in conjunction with Lindley, Francis Bauer published (1830-8) a series of *Illustrations of Orchidaceous Plants*, but these chiefly represent the structure of the parts of the flowers. Andrews,† whom I have already mentioned in connection with the *Botanists' Repository*, soon had several illustrated serials running at the same time. These were his *Coloured Engravings of Heaths*, commenced in 1796; his *Heathery*, commenced in 1804; his *Roses*, commenced in 1805; his *Geraniums*, commenced in 1805; and his *Repository*: all concurrent publications. The first-named work is a folio of four volumes containing 288 excellent coloured plates, and was not completed, according to Pritzel, until 1830; but as the later plates are not dated I am unable to verify this. The *Heathery* is an octavo of six volumes, each containing fifty coloured plates, and as many pages of letterpress. A view of a semi-span-roofed Heath-house, with a background of trees, forms a frontispiece to the first volume. This work was finished in 1812; and the two combined are a monument of the early days of Heath growing, in which Lee and Kennedy among nurserymen seem to have taken the lead. Not less interesting are the Roses and Geraniums of the period (Pelargoniums). Of the former there are 129, and of the latter 124 plates, all of quarto size. The majority of the Roses are single and semi-double varieties, and the Pelargoniums mostly the pure species as they were introduced from South Africa, though one can trace the beginning of the florist's work with this beautiful genus. Haworth, who contributed the botanical descriptions to the later volumes of the *Repository*, published a number of small descriptive works on succulent and other plants between 1803 and 1821. Mrs. Henrietta M. Moriarty, "a lady who wrote several novels," was the artist of the *Viridarium* (1803), containing fifty octavo coloured plates of greenhouse plants drawn from Nature. *W. B. Hemsley.*

(*To be continued.*)

* I may here supply an omission in the bibliography of the first period. In 1793 Sir James E. Smith published *A Specimen of the Botany of New Holland*, that is, of Australia; the figures by James Sowerby. This is a quarto, consisting of sixteen coloured plates, and fifty-eight pages of letterpress. The titlepage bears the impression "Vol. I.," and there is other evidence that the project was a failure. So far as it goes it is very good. The figures were prepared from drawings made in Australia, though some of the plants were in cultivation at the time, among them the famous and beautiful Waratah (Telopea speciosissima), of which the Dowager Lady de Clifford, of Nyn Hall, near Barnet, possessed one plant.

† I take this opportunity to correct an error in a previous part of this history, pointed out by Mr. Hughes in the *Gardeners' Chronicle*, p. 520. Through a printer's misreading I am made to state that the first edition of Philip Miller's *Gardeners' Dictionary* was published in 1736, whereas the date of the edition I had before me was 1731; and I may add that this was preceded by his *Gardeners' and Florists' Dictionary*—a work of two octavo volumes, which appeared in 1724, and which was really the basis of the *Gardeners' Dictionary*.

* *Guide to the Literature of Botany.*

† Mr. James Britten informs me that Andrews was a son-in-law of Kennedy, of the firm of Lee & Kennedy.

NICOTIANA GLAUCA.—Flowers of this species were shown by Mr. J. Harris Stone, at the Linnean Society, May 5; these had been gathered in Fuerteventura and Lanzarotte islands of the Canary group. N. glauca belongs to Buenos Ayres, where it grows to 10 feet high; and it seems to have accidentally got introduced into the Canaries about 1867—69. Since then this Tobacco plant has run wild, and become a common weed, flourishing abundantly in the village streets and bypaths, though not attaining a height above 4 or 5 feet. The natives call it "Mismo" (same), as they seem to think it sprung up everywhere in the islands about the same time.

THE DOUGLAS FIR AT PENRHYN CASTLE.

Exactly sixty years ago (in 1827) this distinct and beautiful Fir (Pseudotsuga Douglasii) was sent home to us by Douglas, and when I now state that one specimen at least has, during that time, produced about 300 feet of timber, the Douglas Fir may well be reckoned as the fastest growing tree that has yet been introduced to Britain.

The largest specimen in this country is, so far as I can find out, the one at Penrhyn, and of which the accompaying cut (fig. 130), taken from a photograph by Mr. T. Wills, of Bangor, gives a fairly good representation. It is growing in sandy loam within a few yards of the drive leading from the Castle to the grand entrance, and was planted fifty-one years ago. (As no record of the planting of this tree can be found, these figures must only be taken for what they are worth; but from an interview I had a few days ago with the planter they are pretty near the truth.) The stem girths at 3 feet, 5 feet, and 12 feet respectively, are 13 feet 8½ inches, 11 feet 3 inches, and 9 feet 4 inches: 24 feet in length of the butt contains 131 feet of wood.

Another tree of the same kind, growing within a few yards of the latter, girths 11 feet 9 inches at 3 feet, and 8 feet 4 inches at 21 feet, and 42 feet in length of the stem contains 217 feet of timber. Within a score yards of this tree is another of nearly equal dimensions. The spread of branches is from 50 to 60 feet.

Much interesting information might be given about the Douglas Fir, but as this has been pretty fully dealt with in the pages of the *Gardeners' Chronicle*, I need not here enter into details; suffice it to say that, from a long experience of the tree, I can fully recommend it for extensive planting in the more sheltered portions of the British Isles. *A. D. Webster.*

ONCIDIUM BRUNLEESIANUM.

By the favour of W. B. Lemon, Esq., of Moat Lodge, Beckenham, we are enabled to give the accompanying illustration (fig. 131) of this handsome, distinct, and rare Oncid, the history of the introduction of which is no less curious than the plant itself. It appears that in 1883 Mr. Lemon obtained through an engineer at Rio Janeiro a small parcel of mixed Orchids (not necessarily collected at Rio), among which was a plant which he, and everybody else who saw it took for Oncidium sarcodes, so nearly did its cylindrical pseudobulbs and broad dark green leaves resemble that plant. In the course of time the plant flowered, and it was at once seen to be new—indeed many persons asserted that it could not possibly be an Oncidium at all, as the individual flowers did not resemble those of any other of that genus, their arrangement, and the form of the labellum being more like that of some of the smaller Cœlogynes. In 1885 it was awarded a First-class Certificate by the Royal Horticultural Society, and in the middle of February, 1886, it again flowered with Mr. Lemon, producing a densely branched spike, consisting of over 150 flowers. The main plant then passed into Baron Schroder's collection, the piece which was taken from it remaining with Mr. Lemon, who flowered it again this year and received a certificate for it at the Royal Botanic Society's Gardens. Sir Trevor Lawrence also has a plant of this rare Oncidium, and, so far as we know, the three mentioned comprise the whole of it in England at the present time. In appearance the plant is exactly like O. sarcodes. Its singular flowers, which are borne on densely branched upright spikes, have sepals of primrose colour and petals (which are spread flat) of the same colour, but faintly barred with light brown. The labellum, which is the showiest part of the flower, is very singularly placed for an Oncidium in that for two-thirds, or more, of its length it juts straight out from the centre of the flower, the side lobes curving upwards until they meet, thus forming a tube; this portion is bright yellow, and from it the middle tongue-like lobe abruptly turns down, presenting in striking contrast a rich maroon colour. The top sepals very curiously cover the opening in the labellum, and the lower ones are only separated at the point like the nib of a quill pen. It is a very attractive plant, and one which collectors would soon be after if they only knew where to go.

SOME NEW IRISES.

(*Continued from p.* 611.)

These three Irises are, all of them, obviously distinct from any of the bearded Irises of the Mediterranean basin, and I cannot identify either of them with any of the Irises of Central Asia known to me, or described by Regel or Maximowicz; nor do they correspond to the descriptions of any known Himalayan Iris.

Putting aside the Oriental variety of I. germanica (described by Wallich as I. nepalensis, and figured under that name in *Bot. Reg.*, t. 818), and the golden-yellow I. aurea, Lindley, which is in all essentials a form of I. spuria, the Himalayan Irises are:—

1. *I. decora*, Wallich = I. Kumaonensis, Royle = I. nepalensis, Don. (There can be no doubt all these three are identical, though Don's description is scanty, and in one point at least, viz., the fistulous scape, inexact; Wallich's description and figure having been made from a very vigorous plant.) This is at once distinguished from the above three Irises, and, indeed, from every other Iris outside the "Juno" group, except the I. stolonifera of Maximowicz, by the remarkable fleshy finger-like roots.

2. *I. nepalensis*, Royle.—This has a branched scape, and broad ensiform leaves, and hence differs wholly from all the above three Irises.

3. *I. longifolia*, Royle.—This is a beardless Iris, and though bearing a superficial resemblance in its long, lax leaves to I. Kingi and I. Duthieana, differs wholly in essential characters from all three.

4. *I. Milesii*, Baker, with branching scape, and large ensiform leaves, is also wholly different from all three.

Besides these I have received as I. decora a plant, growing, I believe, in the hills above Simla, which is certainly not the I. decora of Wallich, but which seems to be either a form of I. sibirica, or closely allied to it. I cannot feel sure of this, since I have not been able to study it in flower, but in any case it is wholly different from the three Irises in question. Concerning I. Moorcroftiana, spoken of by Royle, I cannot obtain any information.

The three Irises in question, again, while wholly

Fig. 130.—The Douglas Fir (Pseudotsuga Douglasii).

distinct from any individual member, seem to me closely allied to a group of Irises which Mr. Baker (*Journ. Linn. Soc.*, 1876) has distinguished as a subgenus under the name Evansia. The word Evansia was invented by Salisbury (*Trans. Hort. Soc.*, i., p. 303, 1810) in honour of a Mr. Evans, of Stepney, a gentleman, as far as I am aware, otherwise unknown to fame. Salisbury recognised features deserving generic distinction in the Iris known as I. fimbriata or I. chinensis, and without pointing out what those features were, called the plant Evansia chinensis. Many years later (1846) Spach (*Suites à Buffon Hist. Veg.*, t. 13), made the same plant a subgenus (Crossiris), but still retained, as in his other subgenera of the genus, the old generic name, continuing to call it Iris fimbriata. Still later (1873), Decaisne (*Bull. Soc. Bot. d. France*, xx., 300) revived Salisbury's genus Evansia, and described three species—E. fimbriata (= E. chinensis, Salisbury), E. dichotoma, and E. vespertina, thus making two species of what before and since has been considered as a single species, viz., I. dichotoma. The real distinguishing feature of the genus thus constructed by Decaisne was the distinct articulation between the ovary and its pedicel.

In forming his subgenus Evansia, Mr. Baker took as the distinguishing trait the presence of a crest on claw of the fall, where, in bearded Irises, the beard is found, and consequently included in it the following Irises:—I. fimbriata, tectorum, decora (= nepalensis, Don), speculatrix, gracilipes, and the North American I. cristata and lacustris.

I cannot regard this token as a satisfactory one. I. alata and several other Irises of the Juno group have a crest, and that often a conspicuous and a toothed one, and I have more than once observed a crest make its appearance as a sport on a beardless Iris (I. sibirica), and a beardless Iris (I. variegata). In I. Milesii, which, in other respects, is singularly intermediate between I. fimbriata and I. tectorum, the crest is half a beard, being furnished with slender cylindrical processes. On the other hand

Fig. 131.—ONCIDIUM BRUNLEESIANUM: YELLOW AND BROWN, LIP PURPLE. (SEE P. 672.)

the affinities of I. dichotoma and I. fimbriata are undeniable (witness Decaisne's genus), but the former has no crest at all, and Mr. Baker is obliged by his classification to put it in an unnatural position among the beardless Irises. And I might in general urge, in spite of the time-honoured distinction of bearded and beardless Irises, that the presence or absence of so superficial an appendage as a beard or crest, unless this feature is clearly correlated with some other fundamental feature, is inadequate for any distinction so great as a subgeneric one. Some Juno Irises have a conspicuous crest, others closely allied have none. The new Iris (Xiphion) Boissieri (Henriquez), discovered by my friend, Mr. Tait, in the Gerez Mountains, Portugal, though in many respects closely allied to I. filifolia, has a quite obtrusive beard. And some of the new Central Asian Irises have, like I. falcifolia, a distinct beard on the inner perianth segments as well as on the outer, while closely allied Irises have the inner segments quite bare.

But though I feel obliged to throw over Mr. Baker's token, the group seems to me on the whole a natural one; I say on the whole, because I have doubts about I. gracilipes and speculatrix, which I have not been able to study in the living state. Moreover I am not quite sure whether the resemblances of I. cristata and lacustris (to which the crestless I. verna is certainly allied) to such an Iris as I. fimbriata are not, after all, superficial and misleading.

I cannot, however, lay down any one feature as distinctive of the whole group; and so far, for the purposes of what may be called mechanical botany, the group is a bad one. I can best describe them as possessing certain tendencies. Thus, there is in all of them a greater or less tendency—

1. For the flower to appear before the foliage is fully developed. This is obscured in I. fimbriata when grown as an evergreen plant, but asserts itself if the plant be dried off in summer.

2. For the lamina of the fall to be marked not only by veins but by spots or blotches.

3. For the falls to develope a crest.

4. For the inner perianth segments to be broad and conspicuous, and to assume a horizontal position.

5. For the spathe-valves to be large and to remain green, conspicuous for a long time, persisting even after the flower has withered.

6. For the dishiscence of the ripe capsule to be confined to the dorsal sutures (and generally to a part of that only) without involving, as in ordinary Pogoniris and on the beardless Irises, the central column (and rostrum) as well.

7. For the seed to develope a conspicuous chalaza, differing in colour from the rest of the seed.

That such a group is a natural one is still further supported by the geographical distribution of its members, which is exactly that of the Japan-Himalaya flora. The Irises of this group seem to have their centre in China, to spread westwards to the Himalayas, where they are lost, and eastwards to Japan, where they are again lost, but recovered in the Eastern States of North America, if we admit I. cristata and I. lacustris into the group; indeed, the parallelism between the presence of I. cristata and that of other Japanese species of flowers in the Eastern States may be regarded as a distinct argument that I. cristata does really belong to the group.

The last three characters given above—the conspicuous and persistent spathe-valves, the loculicidal dehiscence, and the conspicuous chalaza of the seed—are also seen in what appears to be another but larger group of Irises, having its centre in Persia, a group which includes the Oncocyclus group (I. susiana, &c.), the Hexapogon group of Baker (I. falcifolia), and such Irises as I. Korolkowi, I. Bloudovii, &c., I. flavissima and the very closely allied I. arenaria being extreme forms tending to pass into the ordinary Pogoniris group of the Mediterranean basin. But no member of this group ever developes a crest, the hairs of the beard on the contrary are discrete, and often, as in the Oncocyclus group, scattered; the veins of the perianth segments are sharp and defined, not diffused into blotches, and the inner segments, though often conspicuous, are erect and often connivent.

I am inclined to think, however, that these two groups are more closely allied to each other than is either with the ordinary Pogoniris group, and the three Irises I have described above, living, as they do, on the edge of the Japan-Himalayan territory, near the Central Asian territory, are in some respects intermediate forms between the one group and the other. *M. Foster.*

(To be continued.)

FLORISTS' FLOWERS.

THE TULIP.

I would like to see the Tulip grown more extensively than it is at present as a hardy garden plant. The finest varieties are quite hardy, and do not suffer materially from frosts or inclement weather, even in such a season as the present. The plants in our own garden are now well advanced, and in a perfectly healthy condition, although the bed is exposed to north and east winds. I suppose the main reason why the Tulip went out of cultivation was owing to the trouble deemed necessary to preserve the blooms, as well as the plants, and the litter made in the garden owing to the supposed necessity of protecting the plants from frosts as soon as they appeared above ground, and until the flowers opened, was most objectionable to tasteful persons. Many have their Tulip beds in an out-of-the-way corner, where the bent hoops, the mats, and the skeleton wooden structure to hold up the canvas shade are kept out of sight; and if they are wanted on a particular day for a flower show it is certain the blooms must be protected, as a heavy shower of rain would dash the dark brown pollen over the pure delicately tinted petals. But other flowers besides Tulips are injured by heavy showers, and yet we find good places for them in our flower-gardens. The self coloured flowers have the best effect planted in suitable positions or colonies of one colour—say from a dozen to two dozen bulbs in one clump. It is interesting, too, to see those self blooms breaking into flame or feather as the season advances. One can tell by the leaves, even in quite a young state, that the breeder form has gone, the flame or feathered type having taken its place. A breeder Tulip has leaves of an uniform dark green colour, and all the rectified forms have the leaves flaked with a lighter colour. Why the leaves and flowers should alter in this way is a mystery. I planted about a hundred bulbs of the old Tulipa Gesneriana in one of the herbaceous borders; there were about a score of bulbs in a clump; these all flowered at first in the self form, but after three years a number of them have taken to show the flame or feather in the petals, and in that state they are very pretty indeed.

We have a long bed containing many plants, and for a change this year they have been planted on the ground where the Dahlias will be planted in June. The soil is necessarily very deep, and richly manured for such gross feeding plants as Dahlias. We placed over the surface about 3 inches of decayed turfy loam, without any manure being added to it. The fibrous roots speedily push into the Dahlia compost. The bulbs are preserved in a healthy state surrounded with clean sand, and no manurial agents being in contact with them. Nothing has been done to the beds, except to run the Dutch hoe through amongst the plants very lightly. I used to place a surface dressing of light manure over the surface, but this has not been done during the last four years, and the plants have been just as strong, the flowers being equally large and beautiful. Some persons object to littery manures being left about on the surface of the ground, and it is as well to know that it is not necessary. *J. Douglas.*

New Alpine Auriculas.

The Auricula-house at the Royal Nursery, Slough, presents to view just now such a wonderful collection of named and seedling alpine Auriculas as to well repay a visit. When one compares the old A. conspicua—still a very pleasing shaded white-centred variety, though wanting in that circular outline that characterises the newer forms—with some of the latest seedlings, it is easy to mark the wonderful progress that has been made. It seems difficult to excel in point of form, stoutness, and distribution of colours the fine variety named last year *in memoriam* of the late Charles Turner. It seems by reason of its fine quality to stand at the head of the alpine section; but it is probable that even this measure of quality will be surpassed. Several hundreds of seedlings are flowering this spring, and the great difficulty is in determining what to reject and what to retain.

As a matter of course, the collection is by far the strongest in golden-centred flowers. Among those not yet distributed, but which have been exhibited in seedling form, and will be sent out as soon as sufficient stock is secured, are: William Brockbank, maroon, with broad edge of pale rosy-violet—extra fine; Edith, the centre pale gold-maroon, shaded with cerise-purple; Evening Star, a beautiful flower, rich gold, slight dark ground, with orange-buff edge; Sunrise, dark, with deep orange-crimson shading—an extra fine variety; Dr. Masters, dark, shaded with pale pinkish-buff; Pantaloon, dark, with pale chestnut edge—extra fine; Chastity, pale gold dark ground, with edge of pinkish-velvet—very pleasing; Gem, black ground, edged with bright crimson—extra fine; Lucretia, dark, with rosy-violet, very fine and smooth; Homer, dark, with pale reddish-chocolate edge—very smooth, and extra fine; Distinction, a slight zone of dark, edged with pale buff—extra fine; Hotspur, rich gold, black ground, margined with bright red; Richard Gorton, rich gold, rather dark, with broad shading of lively red-chestnut; Mungo McGeorge, dark ground, broad rosy-violet edge—extra fine; William Coomber, dark ground, with edge of rosy-salmon; Lady H. Grosvenor, a large and finely-formed flower, with edging of salmon-buff; and Charles Turner, rich golden centre, dark ground, with edge of reddish-salmon. A few thoroughly good flowers already catalogued are:—Mrs. Ball, Prima Donna, a very striking variety, but apt to reflex somewhat; Troubadour, and William Bragg.

The improvement in the white-centred flowers is rapid in point of size and substance in the pip, but slow in regard to the centre. Several with white centres, speedily die off to a cold dead grey that completely spoils any good effect they may have. Some deepen to sulphur and primrose; or they open sulphur and primrose and go to dead, dull white. Then some good white centered flowers, like George Lightbody and Tenniel, soon get confused in the shading, and lose their effectiveness. What is required is strong, fine, durable centres that will last, and with this, shading equally distinct and durable. In combination with white centres we get shades of pale blue, violet, and mauve, and as these are always flowers of a pleasing character it is necessary the types should be maintained and improved as much as possible.

The best of the new white-centered flowers in the Slough collection are:—Olivette, distinctly edged with violet on a dark ground; Paragon, cream centre, pale lilac-purple shading; Placida, dark ground, edged with bright rosy-purple; Mrs. Stafford, pale primrose to white centre, dark ground, shaded with pale purple; Criterion, pale gold to white, dark ground, edged with rosy-violet; and Miss Blackburn, dark ground, with bright purple-violet shading and fine flat pip. Add to these Conspicua, George Lightbody, Mrs. Phipps, Mrs. Lumby, Queen Victoria, Beatrice, and Tenniel, and we get the best of the white-centered flowers.

In the North no unshaded alpine—that is to say, with a self-coloured margin surrounding the centre—is admitted to competition: an unshaded flower is regarded as a mongrel. At the exhibition at South Kensington unshaded flowers are admitted for competition, and so the practice differs. Some day shaded flowers will in all probability be admitted into the self class of show Auriculas. That flowers of this type are being produced there can be no

doubt. Some day we shall take them in: at present the fancy class only is open to them, and as golden flowers of the edged type appear to find most favour with the judges the shaded selfs must wait a while before they can be properly recognised. *R. D.*

Hardiness of Ranunculuses.

The finest double-flowered Anemones produce very richly-coloured and well-formed flowers, but they lack the exquisite form of the best Ranunculuses. I believe that they (the Ranunculuses) fell in popular esteem, because of the supposed difficulty in their culture. When Mr. Carey Tyso, of Wallingford, was a raiser of these flowers, some forty years ago, they were very popular, the varieties being preserved under their names, and the beds were protected just as the Tulip beds were. Even Mr. Tyso fancied that a little frost in the spring or drying winds would be disastrous to the plants, and recommended some arrangement of hoops, &c., with mats to shelter them. Writing in the early volumes of the *Florist* under the Calendar for April and May, he says:—"Protect choice beds from late frosts. Seedlings must be supplied with water regularly, and shaded; one dry day without protection is sufficient to ruin a spring-sown crop." Even in May he says:—"Protect from frosts, which may be apprehended in the mornings of this month." Now I can say from a long experience that they require no protection. I have planted them year after year in the open borders and in exposed as well as sheltered places, and never saw a single plant of the best named varieties injured by frost. No garden should be without a bed of these beautiful flowers. They like rich deep soil, but the surface ought to be covered over to the depth of 3 inches with light fibrous loam and peat in equal portions; into this the small tuberous roots should be planted in February to the depth of 2 inches. They require no protection whatever, and no other attention except to keep the ground clear of weeds. It is best not to water them until hot and dry weather sets in, when they may be watered between the rows with a fine-rose water-pot. We planted a large bed about the middle of February, and not a plant seems to have failed; the plants are very strong and healthy, though repeatedly frozen. *J. Douglas.*

Plants and Their Culture.

Potting Greenhouse Plants.—Such hard-wooded plants as Chorozemas, Cytisus, Coronillas, and Acacias, that have gone out of blossom, should have their shoots shortened back to keep them symmetrical in shape, unless large specimens are desired. If kept moderately close for a time they will readily break into growth, when those that are in want of more root space should be repotted. Acacias are rapid growers, making many roots, and, unlike the more delicate rooting, hard-wooded plants, they may be safely given free shifts. Both these, the Cytisus and the Coronillas, need good fibry loam, fairly mixed with sand, to grow in, and this rendered close by ramming; they also take plenty of water when growing to keep them healthy, and should be daily syringed to prevent red-spider from gaining a footing. For Chorozemas a good portion of peat should be mixed with the loam; these are not only effective pot plants, but also make graceful subjects for covering walls and pillars when not tied in too formally; where used in this way, it is best to plant them out into efficiently drained beds or borders. Epacrises and soft-wooded Heaths, of which section gracilis, melanthera, autumnalis, hyemalis, and Wilmoreana are representatives, should have a light place near the glass, and be more liberally watered and ventilated as their growth lengthens, and be syringed every fine afternoon until about the end of June, when an open space out-of-doors should be found for them where they can be arranged upon a bed of ashes. Should the Heaths be attacked with mildew, the sulphur-dredge must be brought into use to stop its progress.

Callas.—A simple mode of treating Callas when past flowering and gradually hardened is to plant them out without crowding upon an open border, the large plants being divided if found necessary. Water must be used copiously during dry weather, and the plants lifted and repotted early in the autumn; but although this method saves labour, and answers well for late flowering plants, we do not adopt it for ours, as we use many of them for early forcing, and like their pots to be well filled with roots before placing them in heat.

Tender Annuals and Biennials.—Seeds of Cinerarias should now be sown, also a successive sowing of Primulas may be made, and the young plants from earlier sowings of the latter be potted on without being allowed to receive a check; fibry loam, sifted leaf-soil, and sand suits them well, with a shaded position in a cool frame. A sowing of East Lothian Stocks should also be made, and the plants be potted on as they are found to require root-space, but once they have filled 4-inch pots with roots they should be planted out in a sunny border and mulched with old Mushroom dung. If lifted with good balls of soil in the autumn, repotted, and carefully treated during the winter, they will yield an abundance of sweetly-scented blossoms during the spring months, when they are invaluable alike for conservatory and cut flower purposes. *Thomas Coomber, Hendre Gardens.*

The Flower Garden.

Bedding-out.—This may in general now be undertaken in the southern parts of the country, and seedling plants transplanted into the beds if the weather be bright and dry. Give the bed a good watering after the plants have been put in, and then stick the beds full of evergreen branches. See they are firmly fixed, else the wind will twist them about, and they will do serious damage to the plants. Towards the end of the month varieties of Coleus, Iresine, and Alternanthera, may be planted out should the weather be mild; let the plants, however, be well hardened off prior to transferring them to the open ground. In planting them, a good plan is to remove a portion of the soil from the bed, and substitute a mixture of leaf-mould and spent Mushroom-bed manure; this will be of benefit to the roots by raising the temperature of the bed a few degrees. In order to make the style of bedding effective, the plants must be put in so as to touch each other; and unless this can be done it is better left alone. Dahlias should not be planted out until the end of the month, but their roots should not be cramped in small pots, and if that is likely to happen give them a shift, and defer planting for a week or ten days. If stunted in small pots, it is some considerable time ere they start into growth when planted out.

Hollyhocks.—Spring-struck and seedling Hollyhocks may now be planted out. These are striking objects rising out of a bed of Dahlias or evergreens. They like a rich, open compost, and require a great amount of nourishment to keep the foliage in proper health. Old plants should be examined, and have the shoots reduced to one or two; stakes should then be put in, and the shoots secured as they advance in growth.

Annuals.—Seeds of these beautiful plants are often sown under the shade of trees, and in out-of-the-way places, and afterwards left to take care of themselves. Grown under such conditions they are little better than weeds, but given a suitable place in which to grow and timely attention as regards thinning, with an occasional watering in dry weather, they may be justly classed amongst the brightest and most beautiful of our summer flowering plants. In order to do them justice they should be thinned to 6 inches or more apart for compact growing kinds, and 1 foot does not afford too much space for the spreading varieties. A pinch of seed put in here and there in suitable soil and a branch laid over it to prevent the birds scratching would soon make blank uninteresting spots attractive; the same may be done with Foxgloves. Nothing can be more striking than to come face to face with a mass of those stately flowers backed up with greenery. Attention with water and mulching must be given to Anemones and Ranunculus in order to fully develope their flowers. When fully expanded the Ranunculus beds should be afforded some protection from rain, but abundance of air is requisite.

Trees and Shrubs.—Newly planted trees and shrubs should be looked to occasionally, to see they are securely fastened to their supports. The late showers have been very favourable for their well-being; should the weather become dry they will be greatly benefited by a daily dewing with the syringe or garden engine. Such plants as Rhododendron, Kalmia, Andromeda, Azalea, Viburnum, Prunus, Lilacs, &c., which were lifted from the beds for forcing purposes should now be well hardened off, and returned to their allotted places in the beds. Prior to planting the places from which they were lifted should receive a trench up, and an addition of suitable compost should be mixed with the existing soil.

Herbaceous and Alpine Plants.—If not already attended to, hardy alpine and herbaceous plants in pots should be all potted and soon growing vigorously in their summer quarters. Auriculas should be potted and placed in position behind a north wall. If these are not already potted, let them be seen to as soon as possible; avoid too large pots—5, 4, and 3-inch will be found quite sufficient for their requirements. Primroses and Polyanthus may be planted in shady nooks by the sides of woodland walks, as the plants are not eaten by game or rabbits if other kind of food can be obtained. *W. M. Baillie, Luton Hoo.*

Fruits Under Glass.

Vines and Vineries.—The laterals and sub-laterals will require being stopped once or twice a week—the latter being pinched hard back, except where there may be a bare place to be covered. Well drained borders should have liberal supplies of tepid liquid manure given them twice every three weeks from the time the berries are set until they begin to colour, when the applications may be less frequent. Grapes in the early house should be ventilated freely throughout the day during favourable weather, leaving the ventilators open an inch or two top and bottom at night. Houses in which the Grapes are beginning to colour should be ventilated more freely than heretofore, so as to give flavour and colour to the berries. Vines swelling their bunches should have a little fresh air admitted to them in the morning when the thermometer indicates a temperature of between 75° and 80°, afterwards regulating the ventilators according to circumstances; but between the time of admitting fresh air in the morning and shutting it off in the afternoon (at about half-past 3 o'clock), a temperature of 85° by sunheat should be aimed at in vineries swelling their crops.

A somewhat dry, warm, and, as indicated above, airy atmosphere should be maintained in vineries in which Grapes are ripe and ripening, but in the case of Vines swelling their bunches the conditions should, as regards moisture, be the reverse; the pathways, walls, and surface of the border should be damped over morning and afternoon at closing time, and once or twice between—on bright days the temperature may be run up to 90° at shutting-up time with sun-heat.

Cucumbers.

Plants that have been producing fruit since the middle of March will be considerably benefited by receiving a good top-dressing of three parts loam and one of rotten dung, over which, where the plants are trained to a trellis, an inch thick of horse-droppings may be placed. The old wood should be cut away to make room for young shoots being tied thinly to the trellis, and sufficiently loose in the ties to permit unchecked growth. Syringe the plants thoroughly overhead morning and afternoon in bright sunny weather, and ventilate freely during the day-time, so as to secure a short-jointed and consolidated growth in the plants, without which satisfactory results cannot be expected. Remove misshapen fruits as soon as they appear, and cut those intended for use before they are grown to their fullest size. Plants growing in well-drained pots and boxes will require copious supplies of tepid weak manure-water at the roots daily, and sometimes twice daily, according to circumstances, so that they may not experience any check through insufficiency of moisture at the roots. When the nights become a little warmer fire-heat may be reduced to a minimum, with a corresponding decrease in the atmospheric moisture of the houses.

Frames.

Cucumber plants in hotbed frames should be attended to two or three times a week in the way of thinning and stopping of the shoots, &c. They will not require being watered often at the roots, inasmuch as these can push freely into the bed underneath. Husband the sun's forces by shutting up the frames at about half-past 3 o'clock in the afternoon, only damping the plants slightly overhead when doing so, as plenty of moisture will afterwards arise from the bed to prevent red-spider attacking the plants: mildew is more likely to do so, and, therefore, should be guarded against by preventing the settling of a superabundance of moisture on the leaves, and the temperature from becoming too low by covering the frames with double mats at night. *H. W. Ward, Longford Castle.*

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APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

TUESDAY,	May 24	Royal Horticultural Society: Council, and Scientific, Fruit, and Floral Committees. Linnæan Society: Anniversary Meeting.
FRIDAY,	May 27	Royal Botanic Society: Lecture.

SHOWS.

FRIDAY,	May 27	Royal Botanic and Horticultural Society of Manchester: Whitsuntide Exhibition Opens.

SALES.

MONDAY,	May 23	Orchids in Flower, at Protheroe & Morris' Rooms. Bedding Plants, at St. Mary's Grove Nursery, Richmond, by Protheroe & Morris.
TUESDAY,	May 24	Imported Orchids, at Protheroe & Morris' Rooms.
WEDNESDAY,	May 25	Greenhouse and Bedding Plants, at Protheroe & Morris' Rooms.
THURSDAY,	May 26	New and Rare Imported Orchids from Mr. F. Sander, at Stevens' Rooms.
FRIDAY,	May 27	Imported Orchids, at Protheroe & Morris' Rooms.

Jean Baptiste Boussingault.

This eminent and veteran French chemist, whose death we recorded in our last issue, has special claims on our memories, for, without in any way forgetting or detracting from the merits of other workers in the same branch of inquiry, he fairly deserves the title of the father of chemical research in relation to the life and nutrition of plants under cultivation. His labours were practically ended before the present generation came into existence, for he was born in 1802, and published his first contribution to chemical knowledge in 1821. Therefore, like most original investigators, he began work early in life. He was educated at the St. Etienne School of Mines, and subsequently went to South America, under the auspices of an English company, in order, it is stated, to discover the ancient mines, the existence of which was a notable tradition.

He did not succeed in finding wealth for his company, but, like Humboldt, who preceded him, he collected facts and materials sufficient for a life's study. In South America his explorations were mainly confined to Bolivia and Venezuela. On returning to France he was named Professor of Chemistry to the Lyons Faculty of Sciences; and later he went to Paris, where he was associated with the Academy of Sciences, and held the Chair of Agriculture in the Conservatoire of Art and Industry. In 1848 the deceased was elected to the Constituent Assembly by the Department of the Bas-Rhin, and became by election a member of the Council of State, upon which he sat until the eventful Second of December. Henceforward he renounced political life, and devoted himself to chemical research, his labours covering a very wide field, though he was more especially concerned in the investigation of the phenomena of animal and vegetable life and growth, and the medium in which we live. His publications were very numerous, and the interest they excited is patent from the fact that most of them appeared in several languages. The first of them, which more nearly concerns us, embodies the results of experiments undertaken for the purpose of ascertaining whether plants obtain their nitrogen from the atmosphere. This appeared in 1838, and was followed the same year by a discussion, from a chemical standpoint, of the relative value of the rotation of crops. In 1843 he wrote on the employment of ammonia salts, nitrates, and other compounds containing nitrogen, as manure. Subsequently he conducted numerous series of experiments to determine the nutritive properties of various kinds of fodder, the sources of the various elements of the food of plants and animals, the quantity of ammonia in the atmosphere; the composition of different kinds of soil, transpiration of plants, &c. We have the highest possible testimony to the importance and value of Boussingault's work in the writings of Lawes and Gilbert. In their reports of experiments on the growth of Wheat, the following passage occurs:—"But it is especially to the laborious investigations on agricultural chemistry of Boussingault, and to the generalisations of Liebig to a great extent founded upon them, nearly a quarter of a century ago, that we must attribute much of the stimulus and direction that has been given to chemical inquiries in connection with agriculture in recent times." And they also state that the extensive series of experiments conducted at Rothamsted are, in the main, confirmatory of the conclusions of Boussingault, who, in 1878, was the recipient of the Copley Medal of the Royal Society. Humboldt and Bonpland dedicated a Tropical American genus of Chenopodiaceæ to him; and Boussingaultia baselloides, though not a showy plant, is not unknown in gardens. There is a figure of it in the *Botanical Magazine*, plate 3620. Boussingault died on the 11th inst., at Liebfrauenberg, Alsace, his residence and centre of his experiments.

Livistona (Corypha) australis (see Supplement).—This Palm is known to most gardeners as a sturdy, useful pot-plant, and it is largely grown in Continental nurseries for the decoration of rooms, &c. In this country it is only in such houses as the Palm-stove at Kew that this and similar Palms may be seen in anything like full development; but in the South of France many Palms attain gigantic dimensions out-of-doors, and in the accompanying illustration we have a representation of one of the Australian Livistonas with a trunk about 12 feet high. In the Palm-stove at Kew there is a handsome example of this species just forming a stem, and near it are two specimens of the other Australian species, viz., L. humilis, one with a trunk over 50 feet high, the other 30 feet. Sir F. von Mueller has recently described a third species of Livistona from Australia, under the name of L. Mariæ, which is found in West Australia. Seedlings of this are in the Kew collection. Palms like these are exceedingly handsome in all stages of their growth, and L. australis is no exception. In large stoves, or even houses where an intermediate temperature is kept, this and L. humilis are worth planting out, as they grow much more rapidly and retain their lower leaves longer than when grown in pots or tubs. Out-of-doors we cannot of course grow the Livistonas, but in Chamærops Fortunei, and probably also C. Ritchieana, we have two Palms somewhat similar in habit to the Livistona here figured, and hardy enough to stand our ordinary winters. In reference to the hardiness of Fortune's Palm it is worth noting that the two specimens on the lawn near the Aroid-house at Kew have been exposed to the last two winters, no protection of any kind being given; and these are healthier, better furnished with good leaves, and in every way more satisfactory than they were when carefully strawed and matted up all through the winter. The moral of this is that many plants are weakened and made susceptible to cold winds and spring frosts by protection in winter. On the other hand, there is no doubt that the Palm in question becomes hardier with age. In Monte Carlo, Monaco, Nice, and all those delightful places along the south coast of France, it is possible to grow many Palms in the open, and one can easily imagine, with the aid of the picture taken in Lady Wilton's garden, what grand effects may be obtained by the free use of these noble Palms in gardening out-of-doors.

Orchids at the "Wild West."—On the occasion of the Queen's visit to the American Exhibition the Royal box was most lavishly decorated with Orchids from the nursery of Mr. F. Sander. Amidst the strange surroundings of the place the Orchids produced a remarkable effect, and no one seemed to enjoy the sight so much as the Indians and Cowboys, who never before had seen such wonderful flowers, for no flower of the "Wild West" can compare with the gorgeous Cattleyas, Lælias, Odontoglossums, and other Orchids which composed this brilliant group. All Orchids, in Indian and Cowboy language, come under the general term of Butterfly blooms, and it was evident that many of the "boys" doubted the reality of the flowers, but the test of perfume apparently satisfied them that the flowers were not artificial. Mr. Sander sent the finest of his plants of Cattleya Mossiæ, Lælia purpurata, L. elegans, and some magnificent forms of Cattleya Mendelii; these, intermingled with Ferns and Palms, produced a charming effect. A superb bouquet, composed entirely of Odontoglossum Alexandræ and Maidenhair, was also furnished by Mr. Sander, for presentation to the Queen.

Rating.—Our readers will remember the report of Purser *v.* Worthing Local Board, heard in the Queen's Bench Division, March 19 last, and reported in our columns for March 26. The decision of that Court was given in favour of the appellant, who contended that, under the Public Health Act. 1875, his market garden should be assessed in respect of one-fourth part of the nett annual value. On Wednesday last, in the Court of Appeal, the Master of the Rolls and Lords Justices Fry and Lopes upheld this decision, against which the Board had appealed. We would call the attention of our readers to the fact that this reduction of the rate does not refer to the poor-rates.

The Coming Bath and West of England Show.—This important agricultural meeting will this year be held in the interesting old town of Dorchester. As our readers are aware, horticulture has always found a place at these exhibitions, and has often been enabled to make a good display which has been a welcome relief to the visitor wearied with the sight of fat beasts, sheep, horses, pigs, machinery, &c., the main objects of the meeting. The Rev. J. T. Boscawen, who has the general arrangements of the horticultural department under his especial care, has kindly furnished us with the following items of what will be found of interest to the craft:—A cup or money will be given, value £10, for the best group of

CORYPHA AUSTRALIS IN LADY WILTON'S GARDEN, AT MONTE CARLO.

Orchids; £5 ditto for the best specimen Orchid in the show; £3 and £2 for best collections of fruit, if not less than three exhibitors; £3 and £2 ditto for best collections of vegetables; £2 and £1 for the best collection of vegetables (cottagers?), £2 and £1 for the best three dishes of Strawberries, distinct.

The Gardeners' Orphan Fund.—It is with regret that we hear many complaints of the slowness with which subscriptions arrive for the above deserving movement. It is feared that unless the matter be taken up with more real heartiness by the gardeners themselves, and subscriptions are made by them with more unanimity than hitherto, a long period will elapse ere any practical alleviation of cases of destitution can be made. Mr. C. Penny asks that the whole fraternity of gardeners should canvass for the fund at once, and believes that gardeners themselves will be astounded by the results of their united efforts.

A New Phalænopsis.—Another beautiful novelty has been raised by Mr. Seden, the successful hybridiser of the Orchid family at Messrs. Veitch & Son's establishment, Chelsea. In this case Phalænopsis grandiflora, seed parent, was hybridised with pollen from P. violacea, and the result has been both curious and satisfactory—curious in that the foliage is like that of P. grandiflora, but smaller, while the flower partakes more of the characteristics of P. violacea. The sepals and petals are rather more than an inch long by three-quarters in greatest breadth, bright rose-coloured at the base, suffused with rose over the remaining parts, and faintest in hue at the tips; the wings are narrow, erect, rosy-purple at the tip, and orange and purple as the throat is approached; lip an inch long, channelled, and rosy-purple at the tip. The plant has one flower, which will last some few days longer.

Royal Grand National Tulip Exhibition.—At a meeting of the principal supporters of the above, held at Manchester on Saturday last, the date of the annual exhibition was fixed for Saturday, June 4. This is a late fixture, but it is necessitated by the lateness of the season. Mr. Samuel Barlow's beds at present are as green as grass, and it will need all the sunshine possible to have the flowers in good character by the above date. Owing to its being Jubilee Year the prizes are raised 50 per cent. above their usual value. The extent and quality of the show will depend much upon the character of the weather during the next fortnight.

Gardeners' Orphans.—Wm. Miller, Coombe Abbey Gardens, Coventry, writes as follows:—"I shall feel exceedingly obliged to any one who will kindly assist me in finding an orphan son of a gardener, of about ten years of age, who has a good ear for music and a fairly good voice, and who would be trained to take part in a church choir twice a day on Sundays. I would undertake to find such a boy board and lodging, send him to a good school during the week, and on the breaking up of his voice apprentice him to any trade he may have a liking for. This is a good opportunity, and I would advise any one, who may know of such a boy to lose no time in communicating with me."

Ghent "Chambre Syndicale."—At the last monthly meeting the following First-class Certificates were awarded:—To Mr. A. De Kneel, for Azalea indica, seedling No. 2; to Mr. Louis Van Houtte, for Azalea indica Miss E. Jarrett; to Mr. Aug. Van Geert, for Boronia heterophylla, and for Nephrolepis rufescens tripinnatifida; to Messrs. Edm. Vervaet & Co., for Odontoglossum Halli leucoglossum, O. Maesereeli, and for Miltonia vexillaria; to Mr. Maurice Metdepenningen, for Odontoglossum Halli; to Mr. Louis Desmet-Duvivier, for Anthurium Andreanum sanguineum; to Messrs. F. Desbois & Co., for Pandanus Desmetianus, and for Spiræa japonica fol. atropurpureis; to Messrs. Jacob-Makoy & Co., for Aphelandra Louisa, Philodendrum Corsianum, Begonia Louise Closon, Phytolacca purpurascens fol. var., and for Impatiens Hawkeri; to Mr. Joseph Vervaene, for Azalea indica Pharaïlde, A. i. Jean Van Eick, A. i. Princesse Clémentine, and for A. i. Ami du Cœur; to the Comte de Kerchove de Denterghem, for Lycaste Skinneri alba.

Cultural Certificates.—To Messrs. Edm. Vervaet & Co., for Masdevallia Houtteana; to Mr. Bernard Spae, for Rhododendron Gibsoni.

The Royal Agricultural Benevolent Institution.—The Secretary of the above intimates that Mr. Walter Darkin, the proprietor of the *Mark Lane Express* and other London newspapers, has just sent him a Jubilee donation of 20 guineas towards the funds of that Institution.

Cypripedium Roezlii.—The fine plant of this variety, shown by Mr. Measures, of Cambridge Lodge, Camberwell, was, as we are informed by his gardener, a single plant and not "made-up" as was hinted in our report of the last meeting of the Royal Horticultural Society.

Red-spider on Vines.—We get a great number of communications on this subject, but the nostrums recommended are various, as are the means of prevention. "J. W. T." says:—Take 2 lb. of flowers of sulphur, and 2 quarts of water. Mix well the first in a little of the latter, then add the remainder. With this mixture syringe the infested leaves late in the evening. It must be left on the leaves, and does no injury to those, or the bloom on the berries. "A. L. L." recommends copious waterings of the borders with tepid water, not to pinch out laterals, and the coating of the hot-water pipes with sulphur. A. Waters believes that carefully sponging and syringing the infested leaves to be the best cure. He would never allow the surface of the border to get dry, as so doing encourages the spreading of the insects. Liquid manure is placed in the troughs, and syringing of the Vines until the second swelling of the berries takes place is persisted in.

The Orchids at Heatherbank.—Mr. J. F. Wilson, of Weybridge, writes that his hardy and half-hardy plants now take up all his available time, therefore his collection of Orchids will be sold at Stevens,' on Thursday, June 2.

Hardy Fernery at Kew.—We are heartily glad to see Kew making another forward movement, this time in the shape of a new rockery, on rather an extensive scale, for the exclusive cultivation of British and other hardy Ferns, including North American. We believe it is the wish of the authorities to make this a representative collection, not only of botanical species and varieties, but also of all the more distinct and characteristic of British forms, crested and otherwise, now so numerous in gardens. The rockery has been built on the site of the old one in the neighbourhood of what is known as the ice-well, and adjoining the T range. It has been so planned as to meet the requirements as near as possible of the Ferns, and also to make it convenient for lovers of these plants to examine them with ease. A collection of this kind has long been a desideratum; and now that Kew has taken steps to bring one together, we can only wish the authorities all the encouragement their praiseworthy efforts deserve from Fern specialists, as well as others less interested in this class of plants.

Cabbage Show and Competition.—We learn from the *Kelso Chronicle*, of May 14, that with a view to making their No. 1 Cabbage better known Messrs. Stuart & Mein, seedsmen, of Kelso, last summer offered a premium of £5 for the best two early Cabbages grown from seed supplied by them; the outcome of which was that a show and competition was held within their premises in Wood Market, Kelso, on May 13. Fully 800 growers intimated their intention of competing, but of that number only thirty-three came forward. These, however, represented a wide area, the counties from which the competitors came being Northumberland, Lincoln, Kent, Cornwall, Essex, Dorset, Somerset, Hereford, Norfolk, Sussex, Herts, Surrey, Notts, Cheshire, Aberdeen, Devon, Wilts, Roxburgh, Berwick, and Stirling. The winning competitor was Mr. D. Inglis, gardener to Earl Grey, Howick, Lesbury, Northumberland, whose exhibits weighed over 8 lb. The next best weight was 6 lb., so that Mr. Inglis, who is well known as a skilful grower, had an easy victory. For shape and appearance, however, the best Cabbages were undoubtedly those shown by Mr. R. Gilbert, gardener to the Marquis of Exeter, Burghley, Stamford. These were greatly admired. Messrs. Stuart & Mein offer another prize of £5 for the best specimen of the Lyon Leek, to be competed for on Friday, November 4 next.

Appointment.—Mr. T. Jannoch, Lily Nursery, Dersingham, King's Lynn, has received the warrant of appointment as Nurseryman and Lily of the Valley Grower to His Royal Highness the Prince of Wales.

Linnean Society of London.—The anniversary meeting of this Society will be held on Tuesday, May 24, at 3 P.M.

Botanical Survey of India.—According to a paragraph cited in *Nature* the Indian Government has arranged a scheme for the complete and systematic botanical survey of India. The country will be divided into four great districts, the first under Mr. Duthie, Superintendent of the Botanical Gardens at Saharunpore; the second under Dr. King, Director of the Royal Botanic Garden, Calcutta; and the third and fourth under the Madras and Bombay Government botanists respectively.

Hybrid Primulas.—Some fresh Primulas from the neighbourhood of Saffron Walden were exhibited by Mr. Frederick J. Hanbury, at the Linnean Society, May 5, including two interesting hybrids, viz., Primula elatior × vulgaris, and Primula elatior × veris. The latter is exceedingly rare, and has only been known as British during the last four years. Both are intermediate in their character between their parents, and neither of them produces any fruit in cultivation, but withers away immediately after flowering.

L'Horticulture Internationale.—We learn that the Town Council of Brussels has granted to this new society, directed by MM. Linden, a space of nearly 5 acres in the Park Leopold, at Brussels—an excellent situation in the best part of Brussels, near the Natural History Museum and Zoological Garden. It is expected that the houses will be completed by September. They are to be constructed with all modern improvements, and the aim is to inaugurate a first-class establishment.

Selling Rape Seed for Swede.—We notice in the *Otago Daily Times* of March 30 and 31 last that an important case, "Thomas Mackenzie *v.* The British and New Zealand Mortgage and Agency Company," was tried before Mr. Justice Williams at Dunedin, Otago, on March 30 and 31. The plaintiff, T. Mackenzie, the keeper of a store at Balclutha, sued the company for damages, £200, which he had been obliged to pay to various persons who had purchased seed from his stores under the belief that it was that of Purple-top Swede, but which on growing proved to be Rape. It appeared that the seed was of English growth, and came from a respectable house, and the evidence seemed to intimate that the bags of Swede seed and Rape had got mixed, but whether before leaving the warehouse of the seed merchant in England or on arriving in New Zealand there was not sufficient evidence to warrant a conclusion. The seed was held to have been purchased by the plaintiff from the company with the usual warranty as to germinating powers and trueness to kind, and was contained in one of four bags supplied, the others being genuine Swede seeds. Judgment was given for the plaintiff, damages £115 18*s.* 11*d.*

THE ORIGIN OF THE EDGED AURICULA.*

In my paper on the history of the flower at the Primula Conference, 1886, I have presented a series of evidences tending to the conclusion that the florist's Auricula is of pure descent from the wild Auricula of the Alps, the Primula Auricula of the botanists. By the same method I have assigned the origin of the alpine Auricula to the supposed hybrid Primula pubescens, and this, taken at the valuation of Professor Kerner, carries us back to P. Auricula and P. hirsuta, its reputed parents. Seeing that we cannot prove every proposition, and must allow opinions to have weight, I feel bound to say that, although my proposals were warmly debated, they were not less warmly accepted by not a few, even of those who in the first instance disputed them. Not to make a catalogue of names, it shall suffice now to say that Sir Joseph Hooker, Mr. J. G. Baker, and the Rev. F. D. Horner, concur in my view of the parentage of our two great sections of garden Auriculas. It is no part of my plan on this occasion to enter further into that matter.

I have carried back the history of the edged Auricula to the year 1734, and at that point the edge appears historically to melt into a series of stripes, for anterior to this date stripes were in favour and edges were unheard of. The first edged flower we read of was called "Honour and Glory," as though Fate had emerged from the abstract to the actual in order to have a hand in providing a name for the first representative of a new and glorious race of floral beauties. It is a matter of the highest importance in this connection that while we have in the old books figures of Auriculas, there is no suggestion either in figures or words of an edged Auricula until, in the *Flower Garden Displayed*, by Sir Thomas Moore, we have the characters of Honour and Glory plainly set before us, fixing the date of its origin as certainly not later than 1734. In Parkinson's *Paradisus*, p. 237, are figures of Auriculas in which stripes are suggested; but the draughtsmanship is of so rough an order that it would be unsafe to found a critical opinion on any of them. While, however, we may lament that the literary florists of the olden time were not careful of our interests in their floral portraiture, we are not without the aid of the facile pencil in respect of evidence of the kind of flower that gave birth to the edged Auricula. There were men who understood flowers in days when edged Auriculas were unknown, and when possibly the striped Auriculas had not long been invented. It is generally understood that for the Auriculas of the garden we are indebted to the Dutch florists, who made the first beginning in the domestication of the savage of the Alps. And our debt to the Dutch painters is not less great for representations of the flowers as the Dutch had improved them, and these representations testify to the pure love of Nature by which the Dutchmen of old time were animated both in their horticultural and pictorial arts. The artists of the real Dutch school have never been equalled at any time before or since in the directness of their interpretation of Nature, and the reason of their pre-eminence is seen when we compare contemporary works of other nations, say of the French for example, for the French did follow, as they thought, the wonderful contribution of the Netherlands to the joy of the world. The fact is the Dutch painters of the golden time loved Nature, and lived as near to her as circumstances would allow, but their French disciples, in common with disciples of other nations, loved themselves and lived from Nature, and so failed of true interpretation. The one painted the thing as it was; the other as, in his vain fancy, it ought to be. First in the throng of the Dutchmen who have left on record the characters of the flowers of 200 years since, I will name David de Heem, Abraham Mignon, and Jan Van Huysum. These, in their splendid groups of flowers, show us the Auriculas of the days of Gerard and Parkinson, and there was a golden opportunity for London florists in the last exhibition of Old Masters at the Royal Academy for observing in a picture, by Van Huysum, the characters of the florists' Auricula of his day. I have placed before you a rough sketch of a bunch of flowers as they appear in the centre of that picture. The selfsame flowers, or say flowers of the same type, occur commonly in the groups of Jan Van Huysum; they are usually in trusses of ten or twelve; the pips are of the size and form of show Auriculas of the present day, with bold yellow eyes, a clear paste, and a bold, broad margin marked with stripes of colour radiating from the centre. You will observe in the diagram that Van Huysum's Auriculas had distinct geometrical properties; the edge is wanting, and the body colour is broken into rays, but the proportions are precisely such as modern canons would reqnire were such striped flowers now in demand.

It will be observed, then, as the result of a comparison, that in the progress of time the rays have become consolidated into a belt by the withdrawal of the colour inwards, thus leaving a margin of the green colour, which, as we have agreed in supposing, was the sole colour of the Auricula in the first instance before it became a yellow flower on the Alps. I do not insist on this view, for I am content to deal with facts, and the facts appear to demonstrate that the formation of the edge is a late process, and the facts do emphatically suggest that the edge is formed in accordance with a large plan of Nature much more than by any fancy or foible of man. To put the case another way, I would say that the edged Auricula adds a chapter to the history of evolution much more directly than to the history of fashion in floriculture. We have apparently four colours in a show Auricula; but the paste is but an extension and intensification of the meal, and white and grey edges are of the self-same contitution. The ground colour of the paste is yellow, and the ground colour of the edge is green, and the body colour may be likened to the dark zone on the leaf of a zonal Pelargonium. Van Huysum's flowers show an extension of the yellow to the margin with heavy rays of red overlaid; there is no green traceable; that in the Auricula is a late development, and it has a meaning of some sort apart altogether from our tastes and aspirations as florists.

For a moment let me direct your attention to a few collateral facts. In the old books there are no figures or descriptions of edged Carnations. Those of the times of Van Huysum and Gerard were flaked and spotted, and the spotted flowers were called Picotees. The origin of the term has been much debated, but the end of the story is that it came from France, and was applied to a flower distinguished by spots and blotches. The edged Picotee is a late growth, and offers an analogy to the Auricula. The colour has undergone a process of concentration and of segregation, taking an isolated position on the very edge of the petals, but always showing a tendency to run inward as a kind of reversion to its original state. The lateness of the origin of the florist Picotee is a matter, as it appears to me, of peculiar biological interest. Again, we have edged and tipped Dahlias, of later origin than edged Carnations, and, like them, fitful in behaviour, the edge tending ever to thrust its colour downward on the face of the florets, and so spoil the flower for the florist's purpose. The lateness of the edged Dahlias accounts for their scarcity and inconstancy; for in truth the Picotee edge is in process of formation, for in these matters Nature does not hurry herself; if man is impatient she is not, having more time at command than her biped moth that flutters in the flame of its small passions for an hour, and then is seen no more.

It appears that flowers do not begin business with edges, but we cannot say they end with them, because we know not what the end may be. It is of great significance that the edge of the Auricula is green; it would perhaps comfort us were it yellow, for then we might consider the colour as an extension from the centre, but the green suggests that the flower is about to change into a leaf, and pass away. We see incipient edges in Pelargoniums, Azaleas, Amaryllis, and other flowers, suggesting that definite edges will be formed in time, but our best examples of flowers that have made up their minds on the matter are the Auriculas, Picotees, Dahlias. These are late developments, and they suggest that the formation of the edge is the result of cultivation, and a proper end to aim at in the selection of seedlings and the framing of exhibition schedules.

* Paper read by Mr. Shirley Hibberd at the Horticultural Club, on May 10.

NURSERY NOTES.

MR. B. S. WILLIAMS.

Among the many things of interest to the visitor to this establishment few are better done than the small collection of Heaths. A cultivator of this genus for long years past, Mr. Williams understands their treatment perfectly, and with an old gardener's love for the once popular plants, regrets to find them at present under the ban of fashion. His plants are healthy, and give every promise of a fine bloom in the course of two or three weeks. Growing in the same department were several Australian and Cape plants, also now relegated to the back row; among them Tetratheca verticillata, a neat species, with flowers of a bright tint of blue, and very free in flowering; Leptospermum bullatum, a profusely flowered species, with flowers of the size of a shilling, an attractive subject for table decoration, as it shows up effectively by lamplight; Boronia alata, with rosy-purple bells, thickly sown on the slender shoots, but scentless; Eriostemon scabrum, a free-flowering plant with white flowers.

In the small house, at present occupied mainly by Indian Azaleas, some fine Clivias were in bloom, a particularly fine variety being observed in C. Verschaffelti, a seedling form raised here; the colour is orange-scarlet, of a pleasing soft hue.

Carmichael's free and early sorts of small-flowered Azaleas were found in variety. For a number of purposes these miniature plants are the best that can be named, the colours being so bright and enlivening in combination with the smaller Ferns, especially when grouped in the greenhouse or in rooms.

Several white flowered varieties of Azalea indica were observed: of great excellence were Frankle, a pure white and full form; Bertha Froebel, crimped at the edge; Miss Bins, an American introduction; Madame Jean Wallkoff, a nearly double flower, remarkable for its regularity of shape. Some other kinds of recent introduction noticed were—Cocardeau, a semi-double orange-scarlet; Dame Mathilde, a pink, with petals edged with white; and Fürstin Bariansky, a now much admired kind.

The Orchid Exhibition.

On glancing over the magnificent display of Orchids, associated with Palms, Maidenhair Ferns, scarlet Anthuriums, &c., in the large show-house, the impression is conveyed that the prime old favourites, Lælia purpurata, the fine varieties of Vanda suavis and V. tricolor, and the no less beautiful and showy Cattleya Mossiæ and C. Mendelii, are unapproachable for making a show in such a large structure, and that the success of the whole display is to be traced in a great measure to the large stock of selected specimens of these grand old exhibition plants which Mr. Williams has for many years cherished. The Lælia purpurata are especially grand—there are over 150 spikes—and the specimens vary in the colour of their rich flowers from pure white to bright rose and crimson. And in this setting of fine varieties of well-known species many rare gems appear, in spite of the large number away at Dresden. A few which we noted are Miltonia spectabilis Tolliana, with clear white flowers, the labellum marked with radial crimson lines, and the petals on the inner halves with profuse

violet blotches; Calanthe Sanderiana has many spikes of flowers with pale rose sepals, darker petals, and dark crimson lip; it follows C. Williamsii, which is just over, and continues blooming until July. Among the Vandas, V. tricolor Patersonii is very fine, so also are V. t. Hrubyana and the true Dalkeith variety. The rare and beautiful among the well represented and favourite Odontoglossum crispum section culminates in two, each unequalled in their class—the one a true crispum in form and size, with something like the profuse reddish-brown blotching of O. Ruckerianum, and the other a lovely and delicate variety with milk-white flowers, having distinct blotches of rose-pink—quite a lady's flower.

Among other rare plants in flower here are Oncidium lamelligerum, Masdevallia Veitchiana grandiflora (two very fine specimens), Cattleya Regnelli, with very rich and massive flowers; C. Mossiæ splendens, of the true original stock; C. Wagneri, the pure white Mossiæ; C. Reineckiana, the black and crimson Mossiæ; C. Lawrenceana, many varieties; Lælia grandis, and a new form of L. elegans of the Turneri section; Cypripedium tesselatum porphyreum, C. selligerum majus, and the noble C. grande; the singular Europedium Lindeni, or pouchless Selenipedium caudatum; Masdevallia Harryana lilacina, and M. H. rosea, two very distinct forms; many superb Miltonia vexillarium, O. triumphans, O. mulus, O. Pescatorei, Oncidium Marshallianum, O. sarcodes, Dendrobium suavissimum, with many spikes; and some large Cymbidium Lowianum and Calanthe veratrifolia. Not the least pleasing to growers is the prominence which our best favourites command when well grown, and as worthy examples of this may be mentioned, Bifrenaria (Lycaste) Harrisoniæ, with about fifty of its handsome white Rose-scented flowers; Maxillaria luteo-alba, equally good; and Dendrobium Dalhousianum with nine spikes now to be seen in Mr. Williams' show-house. It must not be omitted, too, to mention the handsome new Gloxinia Alfred Outram, which is worthily promoted to help the show among the Orchids; it is the brightest and clearest scarlet erect-flowered Gloxinia with white edge ever introduced.

Messrs. J. Veitch & Sons.

The various species of Orchids in the large Cattleya-house are just now in great beauty, and well worthy of a visit. Cymbidium Lowii was showing enormous spikes of flower on several examples. Of the recently resuscitated Schomburgkia tibicina two or three plants were in flower; their long stiff flower-spikes reaching in some cases 2 yards away from the plant; but the bulk of the Orchids in the house consists of Lælia purpurata, of which there are many splendidly flowered examples; of Cattleya Skinneri, C. Mossiæ, beautiful forms of C. Mendelii, C. intermedia, C. Acklandiæ, with great numbers of C. Warneri and C. Sanderiana many were coming rapidly into flower. In the other houses were Cypripediums, amongst them C. leucorrhodum, a fine-substanced bloom of palest pink spread over a white ground colour; the lip is full, and quite 2 inches in depth, white inside, with a few faint spots towards the bottom; the side-petals are slightly drooping, and twisted to half their length, colour pink; the dorsal sepal is bowl-shaped, enveloping the whole back of the flower—a lovely thing. The rosy-purple Calanthe Mylami was a telling plant in one of the houses; several small plants of Angræcum Leonis were flowering. Of Odontoglossums and Oncidiums large numbers were in flower, much that was choice being noted under the different species; especially fine were plants of Odontoglossum citrosmum roseum. The new hybrid Rhododendron album plenum was in bloom; it resembles at a short distance a neat flower of Gardenia radicans, and is equally as desirable as a cut flower.

A great treat is in store here for admirers of Gloxinias. Large numbers of the very floriferous strain cultivated and improved by Messrs. Veitch will be in bloom in about a month.

PLANTS IN FLOWER AT KEW.

Homeria elegans.—The genus Homeria consists of a few species; all natives of South Africa. All have remarkably handsome, brightly coloured flowers, which last much longer in full beauty than those of very many other Irids. The subject of this note, now flowering at Kew, has flowers nearly 2 inches across, with golden-yellow, blue, and orange-brown, strangely blended. The plant grows about a foot in height, and has narrow sword-shaped leaves. It is figured in the *Botanical Magazine*, t. 1283, under the name of Moræa spicata.

Dimorphotheca graminifolia.

This is a handsome Cape Composite, with grassy leaves and long-stalked flower-heads. The under surface of the ray florets is brownish, and the upper surface white with a violet base. For cool greenhouse decoration or even for growing outside during summer in sunny spots, there are few more desirable plants. This species was cultivated at Chelsea as long ago as 1731, but it is certainly very far from common even now. It is now in flower in the Cape-house at Kew.

Iris lineata

is a new Iris from the Caucasus, recently described and figured in the *Gartenflora* (t. 1244) by Dr. Michael Foster. From the publication just named we learn that the plant was received by that indefatigable horticulturist, Herr Max Leichtlin, under the name of I. acutiloba of C. A. Meyer, but that it is quite different from that species and comes nearest I. Leichtlinii, from which it differs in its leaves as well as in the size and colour of the flowers. The upper surface of the outer segments is of a greenish-gold colour, the claw being yellowish with numerous brownish-red veins, and the beard blue-purple. The lower two-thirds of the inner side of the inner segments is also bearded—a remarkable characteristic of the plant. A specimen now flowering at Kew has furnished material for a drawing which will appear in the *Botanical Magazine*.

POTATO CULTURE.

There has been during the past six months more than one indication of increasing recognition of the fact that our knowledge of Potato growth and of Potato growing is far from being as complete as it should be. The Conferences held in connection with the Potato Tercentenary Exhibition in December, touched on some of the points in regard to which we need more exact information, while the discussions served to show how many questions there are in the minds of cultivators which remain mere questions. Though many of the more abstruse physiological uncertainties found no place in the programme, they are well known to those who devote attention to such subjects. A further indication of a desire for a more systematic study of Potato culture was manifested by the proposal to originate a National Potato Society, to which reference was made in these columns in the issue for December 11 (p. 754).

During the spring the Scientific Committee of the Tercentenary Exhibition and Conferences has been endeavouring to arrange for a continuance of their work in July, and the arrangements are completed so far as this—the Royal Horticultural Society has placed its conservatory at the disposal of the committee for the purpose. The proposed exhibition, according to the plan sketched out, would be as different from an ordinary Potato show as can be well imagined. Beyond selected representative examples of the different varieties that have been produced, the tubers themselves, would form but a subsidiary portion of it. A foremost place would be given to the literature of the Potato, both historic and scientific, including such published papers on researches in plant life which help to show how a Potato grows, and what are the chemical and physical changes which take place in its growth, especially in reference to the formation of starch in the tubers. So few direct observations have been made on the Potato itself, that it appears it is almost solely from reasoning by analogy that the processes of the development of the tuber can be inferred. The methods followed and appliances used in such researches would, if possible, be included; while it is hoped that a display of Potatos in bloom may serve to direct more attention to fertilisation, which, with the suggestions lately thrown out as to crossing with some so-called "wild" species is now regarded as so important a study. Sections for meteorology and geology as affecting Potato growth would also find a place as well as that last care bestowed on the Potato before its use—its cooking.

This last process does not concern a cultivator, as such. How cooks may spoil good Potatos is their business, and not his. His interest ends with producing the most useful tubers he can, with the largest profit to himself. Whether some of the difficulties which it is understood exist in carrying out the proposed exhibition, and conferences, and lectures, will or will not be overcome, is not yet known.

In any case the fact remains, that there is a desire to secure fuller knowledge of the minute details of Potato growth than we now possess. Till we know these, our practical cultivation must remain more or less empirical.

The destroying invader, the Phytophthora, has centered so much attention on itself that the life-history of the Potato has been the subject of but relatively scant inquiry, and it is only as one practical question after another arises that we begin to realise how little we do know. People, of course, grew and ate Potatos long before modern chemistry had arisen to discover that starch is hydrogen, carbon, and oxygen, in definite proportions, and to decide after much uncertainty what those proportions are; and long before phyto-physiology had investigated how plants obtain their carbon—on which point even now all botanists are apparently not fully agreed.* The history of the development of our knowledge here is curious and instructive, as it well illustrates what has so often been remarked, that a man setting out on a line of original enquiry has no notion where others starting where he left off may eventually reach, and hence cannot appreciate the full importance or significance of his initiatory work.

Beginning in three separate lines of inquiry—that of Stephen Hales (1727), on the moisture imbibed and perspired by plants; that of Priestly (1779), on the atmosphere and its continued purity; and that of Senebier (1779—1802), on the influence of light on plants—there came the recognition that plants decompose "fixed air," our carbonic acid gas, and retain the carbon and liberate the oxygen. The influence of Liebig, and renewed attention to the subject by Mohl, and by Boussingault (from 1840 onwards), has stimulated inquiry, till we stand where we now are, with a rich store of facts patiently acquired by many earnest workers, but with many problems still unsolved. We cannot rest and say we know all we need to know till we can trace every step in a plant's life, and know the conditions which originate, accelerate, or retard those changes. These are not mere subjects of entertaining interest for the laboratory worker; their greatest practical importance is for the cultivator, who, by his arrangement and management, seeks to secure those conditions which will promote the changes leading to the results he desires.

We believe we give much more attention to cultivation than our grandfathers and great-grandfathers did—how much it is difficult to tell—but until we know why we do certain things that are done, we are much in the dark as to what we ought to do. It may be useful to direct the attention of cultivators to some of the questions respecting Potato growth on which uncertainty still seems to exist, some which may

* Some hold that a part of it enters by the roots in solution as carbonic acid.

appear at first of purely scientific interest, and some which are distinctly cultivators' questions. No attempt is made to separate them, because scientific inquiry pursued for its own sake has been found in so many branches of work to lead to important practical results, and because there is no inherent reason why a practical cultivator should not also be a scientific investigator. In his own departments of cultivation he should be; for who has better opportunities for constant detail observation and detail note-making?

(To be continued.)

NOTICES OF BOOKS.

THE GEOLOGY OF ENGLAND AND WALES.

(G. Philip & Son.)

At the time of the issue of Mr. Horace Woodward's first edition, we were able to speak of it with almost unqualified praise, and we are proportionately glad now to see a new and enlarged edition.

The ten years that have elapsed since the first publication have added a vast mass of material to our stores; and though they have not affected general principles, have caused numerous changes in nomenclature; thus, "Laurentian" has given place to "Archaen," while "Ordovician" now covers the Cambrian of Sedgwick or the Lower Silurian of Murchison.

We miss the summary account of the geological features of the country as seen from the carriage windows on travelling over the principal railway lines. It is easy to see that the author felt the necessity for compression, else for our own parts we should have been better pleased to have seen this portion of the book considerably extended instead of curtailed. In the interest of local students and tourists we should also have been glad if Mr. Woodward could have found room for slight topographical sketches of such typical places as Folkestone, Lyme Regis, Swanage, and a few other geological headquarters.

Of course, information on these points is supplied in this book, but from its plan it is necessarily scattered. Thus a reference to the index gives for Folkstone some twenty citations. To have to hunt through these twenty references has a deterrent effect such as the author would assuredly wish to disclaim, and it might have been avoided by devoting a few pages to particular districts. A synopsis of the vegetable kingdom similar to that given for the animal kingdom is also desirable, no compact list of the genera of fossil-plants for the use of botanists being available at present. An excellent and very comprehensive index, together with a map, render this work one of first-rate value.

DIE NATÜRLICHEN PFLANZEN-FAMILIEN, &c.

Under this title Drs. Engler and Prantl are bringing out in monthly parts a series of monographs of the natural families of plants, with definitions of their genera and mention of important species. Each order is entrusted to a competent specialist, and will be complete in itself. In the first part now before us we have the history of the Palms treated of by Professor Drude. As this will furnish an indication of the way in which the work will be carried on, it will enable the reader to gain an idea of the scope of the work if we mention the principal headings. First of all there is a list of the more important books and memoirs in various languages relating to Palms—and here we may correct an oversight by which the articles on garden Palms in these pages are attributed to Dr. Masters instead of to Mr. Watson, of the Royal Gardens, Kew.

The characters of the order as a whole, and the detailed investigation of the organs of vegetation and fructification are then given. Details relating to the internal anatomy of the several parts of the plant are given. The geographical distribution of the species is then elucidated, their affinities discussed, and their economic uses indicated. Then follows a table showing the classification of the order into sub-orders and tribes. A detailed account of each group follows, with indications of the number and distribution of the species. As each order will be treated by a specialist, and as it will be copiously illustrated by excellent woodcuts, it is evident that we have a work of no ordinary character, but one which will be indispensable in every botanical library.

The number and excellence of the illustrations will render the book useful even to those who are not familiar with the German language. We cannot but wonder at the boldness of the enterprise. How or when can it be completed? The Palms alone occupy more than fifty pages, and there are at least 200 orders, exclusive of the Cryptogams. Some of these will, however, occupy relatively little space. Still, after making all allowances, the work is sufficiently grandiose in conception. Another thing noteworthy is, that in spite of the high authority of the writers, the abundance of woodcuts, and the quality of the typography and paper, each part is published at 1*s.* 6*d.* This is surely sufficient to make us look with admiration at the diffusion of knowledge in Germany, which alone makes such a publication possible, and at the same time to realise how it is that the Germans are able to surpass us in our schools as well as in our markets. We are indebted to the publisher, Mr. W. Engelmann, of Leipsig, for the opportunity of laying before our readers specimens of the illustrations of this work, one (fig. 132) representing the growth of Araucaria brasiliensis, the other (fig. 133) Vegetable Ivory (Phytelephas).

We may in conclusion add that the work may be obtained in England of Messrs. Williams & Norgate.

FIG. 132.—ARAUCARIA BRASILIENSIS. (SEE "DIE NATÜRLICHEN PFLANZEN-FAMILIEN.")

FIRE PROTECTION OF MANSIONS.

The sad destruction that has befallen so many of our old historic mansions, and the irreparable losses sustained in consequence of fire, render it an imperative duty on the part of every proprietor to take every possible precaution against and to adopt every reasonable means of dealing with fire when once it breaks out. How best to do this is well told in Mr. J. C. Merryweather's work under the above title, published by Merritt & Hatcher, 2, Grocer's Hall Court, which we commend to our readers as a plain common-sense production. The causes of fires are dealt with, the water-supply, the formation of rams, the fire-apparatus, the training and drill of the household fire-brigade, the means to be adopted in saving life—all these and many cognate subjects are so simply treated that the book cannot fail to render great service.

GARDENS OF LIGHT AND SHADE.

A new and cheaper edition of this book, already noticed, has been published by Elliot Stock. It contains some useful hints for the formation and decoration of small gardens, and some animadversions on the gardener, who, however, only carries out his employer's suggestions.

THE AMERICAN FLORIST COMPANY'S DIRECTORY.

This is a list of the nurserymen, seedsmen, and florists, of the United States and Canada, arranged according to States. The want of an alphabetical index of names is, however, a serious defect, and one which we may hope will be remedied in a new edition.

MARKET PLANTS.

MR. H. B. MAY'S NURSERIES, UPPER EDMONTON.—A visit to a market plant nursery at the spring season of the year, particularly when the nursery is a large one, is always replete with pleasant suggestions. We would first direct attention to a few batches of herbaceous Calceolarias. Imagine a house—exceeding 100 feet in length and containing some 3000 plants—on the ground level, so that you look down upon them in all their beauty; dwarf, compact, bushy stuff in 48-sized pots crowned with

their heads of golden-brown and bronzy flowers, spotted and self varieties. The strain grown here is an admirable one. The Carnation is well done here, and is, moreover, grown in very great numbers. A favourite and well known variety is Miss Joliffe, a perpetual flowering pale pink-coloured flower. Mr. Hemsley (Mr. May's manager) says that no other variety sells like it; they cannot grow enough of it, the demand far exceeding the supply.

Of the crimson Clove an immense stock is grown, the flowers fetching (to the trade) 6s. per dozen. The bright yellow and deservedly popular but scentless Pride of Penshurst is also grown in quantity.

Harrison's Musk, a real acquisition, and one that is now grown by the million, is well represented, its delicious perfume pervading the house. It is an invaluable subject, being adapted either for window boxes, bedding, or as a pot subject for the conservatory.

The useful Marguerites are represented by an imposing "block," and presented a showy and distinctive feature. Tropæolum Ball of Fire was an attractive subject, and seen in long lines of pots it had a very telling effect. Of Lobelias for bedding purposes, the staple varieties grown and in flower were magnifica and Emperor William, two true blues. We were informed that some 20,000 Lobelias are grown in thumbs here. A very fine stock of Roses is grown planted out; they consist mainly of General Jacqueminot, Niphetos—so lovely in the bud—as also are some other choice Teas.

Two span-roofed airy structures have recently been added to the large areas already devoted to glass—one for the cultivation of Camellia alba plena, the oldest but still best white sort; the other house was occupied by sturdy examples of Azalea Fielder's White, a popular market sort.

By way of conclusion, a few words on the foliage plants. Ferns, as is now well known, are grown in endless variety; probably the largest stock in the trade is grown here. House after house is filled with these beautiful plants, the eye gazing over them perceives, as it were, only a Ferny meadow. Just one little note of information here, which may, perhaps, be read with interest. Hitherto in speaking, writing, or thinking about Ferns, the idea has been generally associated with greenery, and yet, in looking over such a vast, excellent, and varied collection such as is grown at Edmonton, a handsome and effective group might be formed of tinted or coloured forms, making a pretty and distinct feature.

To note only a few from the many for this purpose:—Pteris nemoralis variegata, like P. argyrea, with a red shade only to its young fronds; P. tricolor, old, but one of the prettiest when well grown; P. aspericaulis. bronzy-red: P. argyrea, light green and white variegated; Doodia aspera multifida, bright red fronds when grown in an exposed place. Many of the Adiantums have bright coloured fronds, especially rubellum, rhodophyllum, Veitchii tinctum, macrophyllum bipinnatum—somewhat new, a real beauty—beautifully bright colour, something after the style of Lathomi. A. scutum, when well grown (exposed) has very pretty coloured fronds, as also has the popular and beautifnl A. Farleyense when grown under favourable conditions. The Gymnogrammas, too, are especially attractive with their silver-white and gold-coloured fronds.

Crotons are made a specialty of. How pretty their bright foliage looks—young plants suspended from the house roofs in long lines. We should like to say how many plants (so numerous are they) are grown of that favourite plant, Ficus elastica.

Asparagus plumosus nanus was in great quantity; it is a beautiful subject for cutting purposes.

A final note to record that Vitis heterophylla, a perfectly hardy subject, is largely grown for market purposes; it is especially valuable to the floral decorator in rooms, &c., and also out-of-doors, in the form of miniature columns or pyramids, the effectiveness of the plant being due to its slender shoots and tendrils and the leaves being beautifully marbled with white, *B.*

Fig. 133.—PHYTELEPHAS (VEGETABLE IVORY). (SEE "DIE NATÜRLICHEN PFLANZEN-FAMILIEN," P. 680.)

THE HARDY FRUIT GARDEN.

Apricots, Peaches, and Nectarines.—The remainder of the protecting materials should be removed, more genial growing weather having set in. Apricots will require to have their fruits thinned, having the most promising and best placed according to the vigour of the tree. Peaches and Nectarines will also demand attention for some time to come in the matter of disbudding and keeping down insects. Should mildew make its appearance on the young shoots they must be dusted over with flowers of sulphur. All trees that have set their fruits thickly will require moderate thinning for the present, removing the worst placed and least promising first; the borders in light soils will require examination occasionally to see that the roots do not suffer for want of water.

Other Sorts of Fruit.—Pears, Plums, and dessert Cherries will require disbudding, leaving the shoots at regular distances along their branches, but do not stop the growths that are left, only terminal shoots, and these when not required to extend the tree. If the shoots are stopped at this early period, they only form fresh growths instead of fruit-buds; the practice is often carried out for appearance sake, but it is a great mistake. The summer fruiting Raspberries should have their fruits thinned out, cutting clean away at the base, but leaving sufficient young canes to take

the place of those bearing fruit this season. Autumn-fruiting varieties are also greatly benefited by having the young shoots thinned out now, enabling those left to form stronger cones for fruiting than would otherwise be the case. *E. Ward, Hewell Garden, Bromsgrove.*

HOME CORRESPONDENCE.

CAPE POND-WEED, APONOGETON DISTACHYON.—Where proper accommodation can be found for this plant nothing could be more interesting, or more beautiful at this time of year. Artificial ponds or fountain basins with a little coarse soil in the bottom will grow it very well, and make the surface gay with its pearly-white Hawthorn-scented blossoms. If planted 6 to 9 inches below the surface of the water, it proves perfectly hardy in the open air, even in the most severe winters. If left undisturbed and allowed to ripen its seed, these drop to the bottom, and germinate freely, producing thousands of plants, very soon covering all the space allotted them. A small tub, in the absence of a lake or pond, suits very well indeed, many fine flowers have been produced on a few plants in this way, placed in a corner of a cool greenhouse or conservatory, or even placed in a convenient spot outside. It may also be readily naturalised in slow streams or stagnant pools. Its flowers are useful in a cut state, owing to the length of time they keep fresh. *D.*

MEANING OF ANEMONE.—Professor Skeat says this word is from the same Greek root as animate, therefore the name Anemone may have had a reference to springtime. It may be true, as stated by Mr. C. Wolley Dod on p. 619, that the Anemone "hates wind," but some species nevertheless get a good deal of it, as Mr. Dod would acknowledge if he could see A. pulsatilla on the Chiltern Hills in windy weather. Possibly the Anemone is still in the act of accommodating itself to a windy "environment." *W. G. S.*

THE FRUIT CROP IN YORKSHIRE.—The fruit crop, on the whole, in the north of Yorkshire is very promising. Scarcely have I ever seen so much Apple and Plum bloom. Pears, too, have their share. With a season so late, we may expect to save the bloom. Peaches where grown in the open air have suffered very much by the frost in April, only two nights being in that month without frost more or less: on two occasions we had 10°. Apricots in exposed places suffered from the same cause, but in warm, sheltered places they are thickly set; here some trees have been thinned, and used for tarts. Cherries are loaded with bloom, but are often lost in stoning in the cold weather. All sorts of bush fruit promise well; the wonder is that they escaped so well the frosts in April, but the weather was particularly dry at nights, which was much in their favour; now we are much in want of rain. Up to this time we are 3½ inches below the average of rain since January 1, consequently, grass and all other crops are beginning to suffer, and especially all kinds of shrubs and trees that have been newly planted where they cannot be watered. Now that we have such a good prospect for fruit, I hope we may have a good old-fashioned summer to ripen it in the North, which we have not had lately; in fact, Apricots have not ripened in this quarter for several years, except in very favoured places, such as the back of a chimney, or something of that sort. The seasons have been much too short and too dull. When they would have ripened there were none. *William Culverwell, Thorpe Perrow.*

THE SELF-HELP SCHEME.—Mr. R. Dean seems to be under the impression by his letter (p. 618) that I meant to disparage the United Provident Society with the idea of promoting the interests of the self-help scheme. Such was not my intention. My letter was more in answer to a note of the Editor's at the end of Mr. Watson's letter, intimating that such a society as the Self-Help was already in existence; but after reading Mr. Dean's letter calling attention to the United Provident I could see they had nothing in common with the exception of their beneficial intentions. My opinion of the United Provident will be better understood when I say that I mean to become a member myself, and would have been so years ago if I had had any idea of its existence. I think "A. D." is mistaken when he says I introduce a novel element into beneficial objects of an associated nature in my outline sketch of the self-help scheme. It may be a novelty to gardeners but certainly not to other professions, and is simply putting into practice the old proverb, "United we stand, divided we fall." I am well aware there are a great many difficulties to be overcome, and the finding of a basis for a system of payments is the principal one; but "A. D." seems to overlook the fact that gardeners are no worse off in this respect than other professions having similar societies, and who would have to find a basis at their inception. If they could overcome this difficulty I see no reason why gardeners cannot do so. It would be exceedingly harmful, as "A. D." says, if after receiving the subscriptions from gardeners the society should fail because it was found the number demanding help was far out of proportion to the percentage anticipated by the promoters. This difficulty (if it appears) can be overcome by the managing committee, who must unavoidably be invested with a certain amount of discretionary power until a reliable basis is found. If affairs are found to have a tennency to drift in the direction of insolvency a general meeting can be convened to decide upon a new basis, which can only be definitely fixed after an actual experience in the working of the affair. It is not claimed that the Society will increase the number of situations, but it will certainly have a strong tendency to increase the number of good gardeners, separating the corn from the chaff, and bringing the men of superior abilities into prominent notice. It is too much to expect at this early stage that the full extent of the power of influence this society may attain can be thoroughly understood or appreciated. But the idea of the promoters is to use that influence in establishing a constituted authority for examining horticulturists and arboriculturists, and granting certificates according to merit. "A. D." thinks that the payment made may induce some to be less anxious to secure situations than now, but I think the managers can look after that danger and deal summarily with individuals of that description for the protection of the many. And as other societies of the same kind have to cope with the same evil, I see no reason gardeners cannot cope with it also, unless "A. D." thinks there is a greater percentage of lazy, unprincipled men amongst gardeners than other professions. I must have been misunderstood when calculating on the percentage of the money subscribed by every hundred members during the first year. I never counted on the percentage accruing from the first year's subscription during that period. The first year's subscriptions will be sunk, and the amount of interest derived therefrom will materially assist in defraying the expenses incurred by advertising members out of employment, and I think the committee will be prepared to put the funds of the society in a more lucrative investment than the Post-office Savings Bank at 2½ per cent. If an annual subscription of 2*s.* 6*d.* towards the management fund is found to be too much it will be an easy matter to reduce it. I cannot understand how "A. D." and most other writers in the horticultural Press have got such an exaggerated idea of the poverty of gardeners. In "A. D.'s" letter they are described as "most necessitous." I have spent all my life amongst gardeners and foresters in different parts of England and Scotland, and never remember coming in contact with a case of real necessity amongst them when they were in situations—all seemed to have the necessaries of life, and in some cases a few of its luxuries, and generally enjoying more home comforts than most members of other professions having the same social standing. But, although I have not met with a necessitous gardener or forester when they have been in situations, I have met cases of dire necessity when they have been out of employment, or temporarily employed in a nursery, receiving less wages than the common nursery labourer; and I think shame, if nothing else, ought to induce gardeners and foresters to make a strong effort to keep themselves, as a body of men occupying respectable and honourable positions in life, from being obliged, when out of employment, to descend to the level and do the work of the nursery labourer for less wages than that labourer receives, which is not only a degradation to himself, but an injustice also to the labourer. It is quite a common occurrence, after a gardener has been in a nursery for some time, that he is quite unable to stir when he does secure a situation on account of want of funds to pay his travelling expenses; then the necessity is pinching him in real earnest. What can he do? Has he the semblance of a society of brother gardeners that he can turn to in his great need? No. The only one he can apply to is the very one he ought to be under no obligation to. But still there is no alternative, and he is forced to borrow money from the nurseryman to pay his way to his situation. Now I put the question to all concerned: Is that man absolutely at liberty to purchase seeds and whatever he may require from wherever he thinks he can best serve his employer's interests? "A. D." will see that his objections have been carefully considered, but that they are looked upon more in the light of difficulties to be overcome than otherwise. I will only say, in conclusion, that my sanguine temperament may probably outrun my business discretion; but it is not likely to play the same prank with a committee of cool, calculating, practical-minded gardeners and foresters who have had considerable experience, and thoroughly understand the kind of men and the difficulties they have to deal with. *Forester.*

BAD GERMINATION OF ONION SEEDS.—I hear that throughout the country generally many cases of Onion and other seeds of undoubtedly first-class germinating quality have failed, owing, I conclude, to the very cold, dry, and otherwise ungenial season. Perhaps you will kindly allow other of your correspondents to give their experience through your columns. *Scientific.*

HARDY AMERICAN ORCHIDS.—Many of these seem to be more amenable to cultivation in our gardens than those even of our own heaths and copses. While a select few of the latter will be found to grow well for a few years, their American friends will establish themselves permanently in hot-beds, and other places suitable to their requirements. Calypso borealis, a charming little Orchid proves quite hardy in the open air; in such a situation, if it is a little sheltered by other plants as well as by the lie of the ground, it appears perfectly at home. The Cypripediums pubescens and spectabile are also good plants, the former especially, for early spring effect, and spectabile as a succession. Goodyera pubescens, where well sheltered, will also stand out in the open air, its pretty foliage giving it quite a character of its own. There are also many fine Habenarias, few of which, unfortunately, are at present in cultivation, but all of which are worthy a place, even amongst the most select; where American Ferns do well these Orchids will also find a home. *D.*

SUMMER DRINKS FROM HONEY.—There seems to be very little doubt that in the near future honey will be used for many things, as in primitive times, and nothing is more wholesome. The rustic, when he spoke of the clergyman and his bees, said "he have edecated them," meaning he had great power over them, so I suppose the public taste must be a little more "edecated" before it can appreciate the various articles made from honey. I have before me a very exhaustive list emanating from the honey depôt at Reading, which I believe owes its existence to the Rev. V. H. Moyle. Commencing with the healing art not only were there medicines for the human race, but honey drinks for horses and calves, dog soap, &c. Then there were drinks innumerable; and, valuable as honey is as an article of food, it is still more so in drinks. It is needless to mention all the drinks sold at the honey depôt. Some people make a specialty of them. I mention these things to cheer the bee-keeper, and to show him (or her) that there will no doubt shortly be a revival of business in the honey trade, and a sale for all the honey which can be gathered. While on this subject, I do not consider it a good thing to mix honey and lime-juice; at any rate, it would not suit some stomachs. The musty taste of most kinds of lime-juice mixed with honey does not seem the right thing. It may not be generally known, however, that there is a lime-juice which is not musty at all, the name of the manufacturer of which, as well as that of the fabricator of the varied honey drinks mentioned above, I would supply to any person desirous of having either. He has various kinds, which are not only very pleasant to drink, mixed with aërated or common water, but also medicinal, antiscorbutic, &c. *Walter Chitty, Pewsey, Wilts.*

MENTHA ARVENSIS—the plant from which menthol is extracted, now much used in medicine, and imported from Japan in the form of crystals. It has been proposed to grow this Mint as an agricultural plant, and gather the leaves at the proper time for the extraction of the oil: experiments have already been made with a fair show of success. I procured last spring some runners, of which about twelve were with some difficulty established in the

dry spring. These formed plants which seeded, and as a proof of their hardiness in our climate left without any protection during the winter. They are now coming up in great strong clumps on stout loamy soil, showing that there will be no difficulty in growing the plant in clumps 3 feet apart. As there is an increasing demand for the oil the culture of the plant on a large scale in this country in these depressed times should command attention. *Alexander Williams, New Plant and Bulb Company, Colchester, May* 6.

DOUBLE AURICULAS.—It may interest some persons to know that I have this season flowered something like twenty new and distinct varieties; a few of these remarkably promising, and of new and novel colours, with large and handsome full flowers. It is a remarkable break. I have now five distinct double yellow Auriculas, four of which have opened this season, two of them large and fully double. Unfortunately they are rather late in blooming, and so, as they are grown in an unheated house, I could not get them into bloom by the Auricula show at South Kensington. It is at an exhibition of a National Auricula and Primula Society that all sections of the former should be represented, but I did not see one double form at South Kensington on the 26th ult. The pretty laced varieties are late also. Since the show I have had a few open of great beauty, with fine stout, rounded petals and lovely markings. I should like to see an attempt made to have the Auricula show a week later; it would make a good deal of difference to those of us who do not help our flowers onwards with artificial heat, and I think it would ensure a fuller and better representation of the Auricula. *R. D.*

THE KITCHEN GARDEN.

ASPARAGUS.

Established beds should now be looked over, and the "grass" cut regularly up to the time when it is deemed necessary to finish for the season, which generally terminates about the middle of June. The heads should be assorted and tied up in bundles, and those not wanted for immediate use stood upright in shallow vessels of fresh water, and placed in a cool position to keep the "grass" plump and tender. Newly formed plantations from two to three years standing, if cut from at all, should have a few only of the first and finest shoots taken, the remainder being allowed to grow away and develope; plants also that are intended for forcing next autumn and winter should be dealt with leniently in this respect, and as little as possible, if any, of the "grass" culled during the current season. At intervals throughout the summer light top-dressings of common salt should be given to all Asparagus beds, to keep the ground in a cool, moist condition and the surface clear of weeds. Fish guano, bone-dust, or other suitable fertilisers, can also with advantage be given as a top-dressing during the growing season. During very hot dry weather Asparagus plantings are greatly benefited by copious waterings.

Main Crops.—In moist showery weather attention should be given to the various crops in the way of weeding, thinning, and transplanting; such crops as Onions, Parsnips, and Beetroot are readily made good in this manner if it be done at the proper time. In the case of the two last-named care must be taken to preserve the roots intact. In planting a pointed dibber should be used, and a hole made sufficiently large and deep to allow of the tap-root being placed in a straight downward position in soil. After being made firm the plants should, in the absence of rain, be well attended to with water until they commence growing. Thinning out should be commenced at an early stage, and before the young plants become drawn and overcrowded, first removing the weakly and too thickly placed ones until each stands singly; and finally, later on, when the state of the crops and other conditions should, in a great measure, determine the space afforded between the individual plants. A good distance for the large and main crop of Carrots would be from 9 to 12 inches apart in the rows, Parsnips, 12 to 18; Beetroot, 12 to 15; and Onions, from 6 to 9 inches; but in the case of the latter a portion, at any rate, may be allowed to remain much closer together. Where blanks occur in the Carrot lines they should be made good by sowing Early Horn. The crop would also be benefited by an occasional light top-dressing of soot applied after the rough leaf appears onwards.

General Work.—When thoroughly hardened off plant out against walls and on sheltered borders such subjects as Tomatos, Capsicums, and also any herbs raised in heat, as Sweet Basil, Borage, and Lavender. Plant out Leeks which were raised in heat into trenches similar to those advised for Celery, but of smaller dimensions and closer together. For manure, dig into the bottoms of the trenches some thoroughly decayed farmyard dung, and mud from a pond in equal proportions. Hoe through, and earth up Potatos, also Peas, Cauliflower, Cabbage, and other advancing crops. Sow for succession more of late Peas, French and Scarlet Runner Beans, Spinach, Turnips, and Early Horn Carrots; also Salsafy, Chicory, and more Beetroot if required. Small salad for a time would be best grown under a north wall, or in a similar shady position outside. See that a proportionate supply of Lettuces be kept up, and tie up advancing ones of the Cos section, allowing about ten days to bleach them. *John Austen, Witley Court.*

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

May 10.—Present: Dr. M. T. Masters, in the chair; and Rev. C. W. Dod, Mr. W. G. Smith, Mr. Pascoe, Mr. Michael, Mr. O'Brien, Mr. Lynch, Mr. Wilson, Mr. Murray, Mr. Smee, Mr. Ridley, and Rev. G. Henslow, Hon. Sec.

Peristeria cerina and P. guttata.—Mr. O'Brien exhibited two flowers, one yellow the other spotted, believed to have been borne by the same plant, and characteristic of these two species. It was suggested that they might prove to be male and female respectively. Mr. Ridley undertook to examine and report upon them.

Longicorn Beetle in Saccolabium cœleste.—Mr. Pascoe exhibited a live specimen taken from a stem. It proved to be Diaxenes Taylori, from Moulmein, in the Malay Peninsula.

Leucoium tricophyllum.—Rev. C. W. Dod showed a specimen of this plant. Though figured in an early volume of *Curtis' Magazine*, it appears to have been lost. It is a native of Portugal.

Daffodils, hybrids.—He also showed a number of native hybrids between N. poeticus and N. Pseudo-Narcissus. They grow in abundance and great variety at an elevation of 7000 feet in the Pyrenees, since as soon as the snow disappears both these species flower simultaneously, and not separately, as in England. They constitute what is known as N. Bernardi×.

Begonia sp.—Mr. Ridley stated that the name of the species exhibited by Mr. Smee at the last meeting was B. hispida, from Brazil.

Euonymus vars.—Dr. Masters exhibited sprays of the common green Euonymus japonicus with yellowish shoots and young foliage. They were received from Mr. Max Cornu. The yellow tint disappears as the season advances. The cause was attributed by the Secretary to cold, as he had noticed that transplanted Bluebells remained yellow-green until the temperature rose, when they suddenly became green. Mr. Murray corroborated this fact, and added that corn will sometimes become yellow on the return of cold weather.

Tulip Bulb, abnormal.—Dr. Masters also showed bulbs, received from Mr. Webb, in which one of the lowermost scales had become bent downwards in a tubular form, the axillary bulbil having grown downwards in conjunction with it. Mr. Dod alluded to the fact that Bluebells and Crocuses sometimes bore bulbs on dependent axes below the parent bulb; but it was somewhat difficult to account for this peculiarity.

Plant Diseases.—The following communications were received from Mr. Plowright:—

Distorted Crocus Leaves.—"The Crocus leaves sent herewith present a curious distorted appearance towards their extremities that I have frequently observed at this season of the year. It usually becomes more marked later on. At first sight one would imagine it due to some mechanical injury, but this I believe not to be the case. The plants from which these specimens are taken have had their leaves similarly distorted for several years in succession. Whether it be the work of an insect or not, I should be glad to have the opinion of any member of the committee who may be familiar with this diseased condition." This is of common occurrence, and is due to chill or other cause which prevents the leaves escaping freely from their sheaths. [The latter cause was the one suggested by the committee.]

Larch Disease.—"Most likely several diseases are included in the term 'Larch disease,' as one frequently sees it employed in various semi-scientific periodicals. The specimens in question were obtained last autumn near Aberdeen, in one of the excursions of the Scottish Cryptogamic Society. Professor Trail pointed out to me the large number of young Larches which were thus injured. During the following week, while at Hereford, I searched in vain for specimens of this disease, nor have I been more successful with the Larches in this neighbourhood. The specimens sent herewith were living at the time they were procured, the leaves attached to them being quite green. The peculiar swellings of the affected branches being like those produced by the Podisoma on Junipers—more or less fusiform—there is no reasonable doubt but that the disease is caused by the presence of the mycelium of a fungus, Peziza Willkommi. The diseased conditions of the branches and the structure of the fungus, &c., are well shown in R. Hartig, *Lehrbuch der Baumkrankheiten*, pl. xi. The specimens show the fusiform swellings of the branches and the Peziza Willkommi *in situ*. It has been asserted by those who confine their attention to the examination of herbarium species, that no difference exists between P. Willkommi and P. calycina. Without doubt the perfect fungi resemble each other closely in external appearance and in spore measurements, but their life history is distinct, the former affecting living trees, the latter dead ones. A similar case in point occurs with the two Æcidia, which in this county occur upon Ranunculus repens, the one of which is connected with Puccinia Magnusiana on Reed, and the other with Uromyces poæ. For my own part, I am quite unable to distinguish these æcidia from one another, either by their external appearance or by their spore measurements, but their life history is abundantly distinct." [It was the opinion of Mr. Smith and Mr. Murray that Peziza, a purely superficial fungus, had nothing to do with the disease, but only followed it.]

Podisoma Sabinæ.—"The specimen sent herewith has been produced by placing the spores of a Ræstelia on Hawthorn upon the Savin. It was formerly supposed that we had in Europe true Podisomata only answering to the three Ræsteliæ—namely:—

"Podisoma juniperi = Ræstelia lacerata on Hawthorn.

"Podisoma Sabinæ = Ræstelia cancellata on Pear.

"Gymnosporangium juniperi = Ræstelia cornuta on Mountain Ash.

"On May 7, 1885, I infected a Hawthorn bush with a Podisoma on Savin. By May 17 peridia began to be developed; in a month's time (June 25), when the Ræstelia was in full fruit, I infected with them one of two Savin bushes. This showed the same signs of the infection being successful as I had previously observed in a Juniper on which I produced P. juniperi—namely, a falling off of those leaves (after their turning yellow) into which the germ tubes of the Podisoma promycelial spores had entered. This was followed next year (1886) by slight enlargements on the stems, and in two years' time (1887) by the production of the perfect Podisoma."

Endophyllum sempervivi.—"The specimen of common Houseleek sent herewith was artificially infected with this fungus last year. Other species of Sempervivum infected at the same time did not become affected with the fungus."

A vote of thanks was given to Mr. Plowright for his communications.

Plants Exhibited.

Cymbidium tigrinum.—A finely grown specimen of this plant was exhibited by Messrs. Shuttleworth, Carder & Co., Clapham. It was figured in the *Botanical Magazine*, t. 5457. A Botanical Certificate was awarded it.

Arisæma triphyllum—a North American Aroid, green var.—was exhibited by Mr. Ridley; the usual form is more showy, having purple spathe with bars. The plant in question was grown in the grounds of the Natural History Museum at South Kensington.

Dracunculus creticus, Schott.—This powerfully odoriferous Aroid from Crete, was shown by Mr. Lynch, who observed that it proved to be perfectly hardy during the last two winters. It is a strikingly handsome plant.

Sisyrinchium filifolium, from the Falkland Islands; Iris lineata, Foster, from the Caucasus; Arctotus auriola, A. revoluta, and A. arborescens, were shown by Mr. Lynch.

ROYAL BOTANIC.

The first summer show of the year held by this Society took place in Regent's Park on Wednesday last, May 18, when there was a good attendance of visitors, despite the dull weather. The show itself was as pretty an exhibition as has been held in this place for a considerable time, Azaleas showing up well, and Orchids also took a very prominent place. Pelargoniums, as is usual at the Botanic shows, were represented by some fine groups. Daffodils, even at this time of the year, were sent by Messrs. Barr & Son, and a few from Mr. Ware.

Stove and Greenhouse Plants were extensively shown, and of uniform good quality. In the nurserymen's classes for twelve and for six each the leading honours were carried off by Mr. Cypher, who staged a splendid lot, among which were Pimelea Hendersoni, P. spectabilis rosea, Darwinia tulipifera, Aphelexis purpurea, Erica depressa, E. Cavendishii, Acrophyllum venosum, Dracophyllum gracile, Franciscea eximia, and Azaleas—all masses of flowers. Mr. H. James was 2d in both instances, having as his best Boronia pinnata, Erica Cavendishii, E. Lendyana, Darwinia fuchsioides, &c.

In the amateurs' division Mr. W. Chapman, gr. to J. Spode, Esq., Hawkesford Park, Rugeley, secured 1st in the class for ten and also for six, showing similar plants in each lot, especially fine Acrophyllum venosum, Erica profusa, E. Cavendishii, Ixora coccinea, Aphelexis grandiflora, Tremandra ericæfolia, and Darwinia tulipifera. Mr. G. Wheeler, gr. to Louisa, Lady Goldsmid, St. John's Lodge, Regent's Park, was placed 2d in the class for ten; he had Hibbertia Reedi, Epacris miniata splendens, and Adenandra fragrans. The 2d best six came from Mr. A. Offer, these being Clerodendron Balfourii, Statice Gilberti, Boronia elatior, and Pimelea decussata. Mr. R. Butler was a fair 3d in both classes.

Orchids.—The prizes offered for these brought forth a good display of fresh-looking well-grown plants. For twelve exotic Orchids (amateurs) Mr. F. Hill gr. to Henry Little, Esq., The Barons, Twickenham, was a good 1st, his dozen being all well grown, well flowered, and cleverly staged. For quality his two best were Cattleya Mendelii Mrs. Little, a grand rosy-petalled variety, with handsome labellum and fine substance; and C. Mendelii, Little's variety, white with rich crimson lip. Mr. Hill's C. Mossiæ, with twenty flowers, a fine C. Skinneri, Cypripedium caudatum roseum, Odontoglossum Pescatorei, with numerous spikes; O. hystrix; Aërides Fieldingi, and Oncidium Marshallianum were specially fine. In the same class Mr. Jas. Douglas, Great Gearies, Ilford, was 2d, his group containing three well-flowered Odontoglossum Roezlii (one the white variety), a large Cypripedium villosum, Cymbidium Lowianum, and Oncidium ampliatum majus.

In the nurseryman's class for twelve exotic Orchids, Mr. Jas. Cypher, of Cheltenham, was 1st; a very large Dendrobium thyrsiflorum formed a very telling feature; Cattleya Mossiæ, C. Skinneri, a very fine variety of Lælia purpurata, L. Wyattiana, and Miltonia vexillaria were also excellent. Mr. H. James, of Castle Nursery, Norwood, was 2d, the fine old Dendrobium fimbriatum oculatum appearing in his twelve, with Oncidium Marshallianum, Cattleya Mendelii and other showy things. Messrs. T. Jackson & Son, of Kingston, were a good 3d. For Twelve exotic Orchids, single specimens (made-up plants not admitted), Mr. Jas. Douglas was the only exhibitor in the amateurs' class, and was awarded 1st prize, his specimens being very well grown and effectively arranged. The prizes for twelve single specimens (nurserymen) called forth keen competition between Mr. Cypher and Mr. James, which resulted in their being put equal 1st. Mr. Cypher had a new, distinct, nearly white Lælia purpurata pallida, a fine L. p. superba, a good Dendrobium nobile, and all the others good. Mr. James staged a fine lot, containing a fine Lycaste Harrisoniana, with about twenty flowers, Saccolabium retusum magnificum, Lælia purpurata, with thirty flowers, &c. Miscellaneous groups of Orchids were staged by Messrs. Hugh Low & Co. and Mr. W. May, gr. to F. C. Jacomb, Esq., Amherst Park, Stamford Hill. Messrs. Low had a varied strain of C. Mossiæ and C. Mendelii, several fine Odontoglossum Roezlii, a very peculiar Lælia purpurata, with wholly dark maroon lip, and other good Odontoglossums and Cypripediums. (Small Silver Medal.) Mr. Jacomb's group contained some fine Odontoglossums, Cattleyas, &c., mixed effectively with Ferns. His best were O. Jacombianum, O. Andersonianum, and O. Wilckeanum. (Large Bronze Medal). Mr. Jas. Cypher staged an interesting lot of varieties of Lælia purpurata.

Roses.—In the nurserymen's class for nine specimens Messrs. Geo. Jackman & Son, nurserymen, Woking, so far improved upon their position last year as to beat Messrs Paul & Son, the Old Nurseries, Cheshunt, on this occasion, staging finely grown and flowered specimen H.P.'s, Camille Bernardin, Madame Victor Verdier, Comtesse de Sereneyi (a very fine piece), Charles Lefebvre, La France, Mons. Noman, Fisher Holmes; and Teas Celine Forestier and Cheshunt Hybrid. Messrs, Paul & Son had H.P.'s Beauty of Waltham, Camille Bernardin, Edward Morren, Centifolia rosea, Magna Charta; B., Juno and Charles Lawson; Teas, Celine Forestier and Cheshunt Hybrid. In the class for twenty specimens Mr. C. Turner, Royal Nursery, Slough, was a good 1st, having medium-sized well grown and flowered plants of Madame G. Luizet, Madame Victor Verdier, Madame de Montchaveau, Comtessse de Sereneyi, Edward Morren, Catharine Soupert, Marquise de Castellane, Celine Forestier, Etoile de Lyon, Charles Lawson, and Juno, some of these being in duplicate. 2d, Messrs. Paul & Son, with a group only just inferior, the best being Beauty of Waltham, La France, François Levet, Avocat Duvivier, Marguerite de St. Amand, Grandeur of Cheshunt, Marquise de Castellane, Violette Bruyere, Merveille de Lyon; Teas, Alba rosea, Madame Margottin, Perfection de Monplaisir, and Innocenta Pirola. 3d, Messrs. Geo. Jackman & Son, with a remarkably good lot; and a Bronze Medal was awarded to Mr. W. Rumsey, for a collection of great merit. This class made one of the features of the show.

In the amateur's class for six Roses Mr. T. Lockie, gr. to the Hon. G. W. Fitzgerald, Oakley Court, Windsor, was 1st with small but nicely done specimens of Jean Liabaud, Madame Thérèse Levet, Etienne Levet, Marquise de Castellane, La France, and Madame H. Jamain. 2d, Mr. Perry, gr. to W. G. Rowlatt, Esq., The Woodlands, Cheshunt, whose best plants were Juno, Madame C. Joigneux, Magna Charta, and Souvenir d'un Ami.

Azaleas.—These were, as might be expected, a leading feature, and made charming patches of colour in an exhibition remarkable for its bright and fresh appearance throughout. In the amateurs' class the best six came from Mr. George Wheeler, gr. to Louisa, Lady Goldsmid, St. John's Lodge, Regent's Park, who had well-grown and flowered plants of Concinnum, Criterion, Model, Stella, Magniflorum, and Napoleon III. 2d, Mr. H. Eason, gr. to B. Noakes, Esq., Hope Cottage, Highgate, whose best specimens were Prince Albert, and Charmer. Mr. T. Lockie had the best six in 12-inch pots, having nice fresh plants of Duchesse A. de Nassau, Souvenir de Prince Albert, Roi d'Hollande, Roi Leopold, Alice, and Alexander II. 2d, Mr. H. Eason, with real pyramids—Duchesse A. de Nassau and Stella being the best. In the nurserymen's division, Mr. Charles Turner, was 1st, with six fine plants, very bright and fresh, consisting of Mons. Thibaut, Duchesse A. de Nassau, Duc de Nassau, Reine des Fleurs, Etendard des Flandres, and Madame C. d'Hamale. 2d, Messrs. T. Jackson & Son, nurserymen, Kingston, with Madame Iris Lefebvre, a charming salmon-red, double variety; Jean Van Geert, Imbricata, Duc de Nassau, Reine des Pays-Bas, and Holfordi. Mr. H. James, Castle Nursery, Lower Norwood, was a good 3d. In the class for twelve plants in 12-inch pots Mr. C. Turner was 1st, with some small but admirably grown and flowered specimens of Grandesse, Mdlle. Marie Lefebvre, Charmer, Madeline, Roi d'Hollande, Apollo, Reine des Fleurs, and Mr. Turner, some of these being in duplicate. 2d, Mr. H. Eason, whose best specimens were Duc de Nassau, Comtesse de Flandres, Mdlle. Iris Lefebvre, Apollo, and Stella.

Pelargoniums.—These were seen to great advantage, being so fresh and bright. In the amateurs' class for six plants in 8-inch pots Mr. D. Phillips, gr., Langley Broom, Slough, was 1st, with Madame Thibaut, Triomphe de St. Maude, Jeannette, Scylla, Lady Isabel, and Digby Grand. 2d, Mr. F. J. Hill, gr. to H. Little, Esq., Twickenham, whose best plants were Duchesse de Morny, Blushing Bride, Fortitude, and Duchess of Edinburgh. In the nurserymen's class for the same number Mr. C. Turner was 1st, with fine specimens of Maid of Honour, Kingston Beauty, Prince Leopold, Amethyst, Mons. Desmoulins, and Claribel. 2d, Mr. James Cypher, nurseryman, Cheltenham, with much smaller plants; Mr. J. Wiggins, gr. to W. Clay, Esq., Kingston, being 3d. Probably Mr. Turner never before staged a better lot of six fancy Pelargoniums than on this occasion. We have seen larger plants, but never before such finely-grown and bloomed specimens, nor such superb quality of flower; they were The Shah, Ellen Beck, Princess Teck, East Lynne, Lady Carrington, and Miss E. Little. 2d, Mr. D. Phillips, with good plants of Roi des Fantaisies, Beatrice, Mrs. Hart, Mr. Porter, Delicatum, and Vivandiere.

Gloxinias.—The only exhibitor of twenty-four plants was Mr. H. Eason, who had a very good lot, all erect-flowered and fine varieties: a 1st prize was awarded.

Hardy Herbaceous and Alpine Plants.—There was a good display in these classes. The 1st place in the former class was secured by Mr. T. S. Ware, who had a very well grown lot of plants. Trollius Fortunei fl.-pl. was a striking plant; varieties of Primula Sieboldi were shown, and also a good lot of Polemonium Richardsoni. Closely following were Messrs. Paul & Son, Cheshunt, whose best plants were Arnebia echioides, Megasea cordifolia purpurata, Geum miniatum, &c. Messrs. Collins, Bros. & Gabriel, 39, Waterloo Road, were 3d here, while occupying the leading position with alpines. In this latter lot Phloxes were largely represented. There were also Violas and Gentiana acaulis. Messrs. Paul & Son were next in merit, having Menziesia petriformis, and Saxifraga muscoides purpurea among their plants.

Heaths.—In this division Mr. J. Cypher, Queen's Road Nursery, Cheltenham, staged a very deserving group, showing E. Cavendishii, E. depressa multiflora, E. ventricosa coccinea minor, best. Mr. H. James, Castle Nursery, Norwood, followed, his plants not being as well flowered as the former lot.

Ferns.—There was only one class for these, and that was for six exotics. Mr. James Douglas, Great Gearies, Ilford, carried off the premier award here with a healthy lot of medium size, Dicksonia antarctica, Gleichenia speluncæ, G. flabellata, and Microlepis hirta cristata being his best. The 2d place was accorded to Mr. R. Butler, gr. to H. H. Gibbs, Esq., St. Dunstan's, Regent's Park, whose best were Asplenium inæquæfolium and Phlebodium aureum; 3d, Mr. H. Eason, gr. to B. Noakes, Esq., Hope Cottage, Highgate, London, N.

Fine-foliaged Plants.—In the nurseryman's competition the 1st prize fell to Mr. J. Cypher, Cheltenham, for very large and handsome plants; the best were Cordyline indivisa, Latania borbonica, Kentia Forsteriana, and Crotons. Mr. H. James was a good 2d, having fine specimens of Croton Queen Victoria and C. Andreanum, also Areca lutescens. In the corresponding class for amateurs the chief prize was taken by Mr. A. Offer, gr. to H. Warren, Esq., Handcross Park, Crawley, for a creditable group, well grown samples of Dasylirion acrotrichum, Phœnix reticulata, and Cycas reticulata being included. He was very closely followed by Mr. R. Butler, whose Areca Baueri and Cycas revoluta were very fine.

Miscellaneous.—From Messrs. J. Laing & Co., Forest Hill, London, came a tastefully arranged group of good plants—Crotons and Palms, with Azaleas (indica), Clivia, and several Ferns, the front consisting of Orchids, Begonias, and Caladium argyrites; and plants of Medinilla magnifica were conspicuous. (Large Silver Medal.) Mr. B. S. Williams, Upper Holloway, contributed a very similar group, in which Amaryllis and Anthuriums were prominent, and received a like reward. A Silver Medal was given to Messrs. W. Cutbush & Son, The Nurseries, Highgate, for a group consisting chiefly of Azaleas, both hardy and greenhouse sorts being included. A very pretty effect was obtained by a group of ornamental Maples contributed by Messrs. J. Standish & Co., Royal Nurseries, Ascot, the exquisite tints of the finely divided foliage gaining general admiration. A large Bronze Medal was awarded to this exhibit, and also to a collection of Dracænas from Mr. H. James, Castle Nursery, Norwood, whose plants were effectively displayed by being arranged with plants of Spiræa japonica in flower. Dracæna Goldieana, D. elegantissima, D. Youngi, were particularly fine. An extensive group of plants was shown by Mr. H. B. May, Dyson's Lane Nursery, Upper Edmonton, Calceolarias forming the greater part, were of excellent quality, well flowered and good colours. Forms of Pteris cretica were extensively shown, and Mignonette in pots. (Bronze Medal.) Mr. T. S. Ware, Hale Farm Nursery, Tottenham, gained a Large Bronze Medal for a mixed exhibit comprising Narcissuses, Tulips, Anemones, a great number of forms of Primula Sieboldi, Tree Pæonies, and spring flowers. Alpine and herbaceous plants came from Messrs. Paul & Son, Old Nurseries, Cheshunt (Certificate.)

Daffodils were shown by Messrs. Barr & Son, Covent Garden, London, and were very interesting when the time of year is remembered. A Bronze Medal was awarded. Mr. W. Balchin, Hassocks and Brighton, contributed a basket of the rare though strkingly beautiful Leschenaultia biloba major, well grown and flowered.

Extra prizes were awarded to Mr. J. James, Woodside, Farnham Royal, for twelve plants of very fine Calceolarias, showy crimson hues predominating; to Mr. John Walker, nurseryman, Thame, for three boxes of splendid Maréchal Niel Roses; to Mr. Louis Van Houtte, Royal Nursery, Ghent, for a group of charming Azaleas with dense heads of bloom, the varieties being Oswald de Kerchove, Superba, rosy-purple; La Victorie, reddish-salmon, very fine; Apollon, Mdlle. Marie Lefebvre, white; Dr. D. Moore, Marquis of Lorne, Princess Charlotte, and Mdlle. Louise de Kerchove.

Certificates were awarded as follows:—

Botanical Certificates.

To Mr. B. S. Williams, for Chamædorea synechanthus.

To Mr. B. S. Williams, for Odontoglossum Andersonianum splendens, with spots darker and heavier than on the type.

To Mr. B. S. Williams, for Lælia grandis, more highly coloured than usual.

To Mr. Cypher, for Lælia purpurata Cypheri, rich cherry-red lip, with a white blotch in the centre; sepals and petals white.

To Mr. Cypher, for Lælia purpurata Wyattiana, pale rose lip, spreading, veined with a deeper tint, sepals and petals white.

To Mr. Hill, for Cattleya Mendelii grandis, lip white, with rose centre, throat yellow.

To Mr. Hill, for Cattleya Mendelii Mrs. Little, rose sepals and petals, rich carmine-rose lip, throat paler.

To Mr. May, for Odontoglossum Jacombianum, intermediate between O. Ruckerianum and O. crispum guttatum: much spotted: lip broad and flat, with large crimson blotches.

Floricultural Certificates.

To Mr. B. S. Williams, for Gloxinia Alfred Outram, an erect-flowered variety, with a rich bright scarlet throat, and distinct Picotee-edge of white.

To Mr. T. S. Ware, for Tree Pæony odorata.

To Mr. T. S. Ware, for Tree Pæony Maria, delicate flesh.

To Mr. T. S. Ware, for Tree Pæony Triomphe de Milan, soft pink, centre margined white.

To Mr. T. S. Ware, for Tree Pæony rosea odorata, white with pale rose centre.

To Mr. T. S. Ware, for Trollius Fortunei fl.-pl., apparently a deep oronge form of T. asiaticus.

To Mr. C. Turner, for show Pelargonium Magpie, pure white, with a black longitudinal blotch on each petal, fine form, bold truss, and good habit.

To Mr. C. Turner, for Tea Rose Miss Edith Gifford, pale flesh, extra fine.

To Messrs. Laing & Co., for Begonia (single) Prince of Wales, rich deep bright orange-scarlet—very fine.

To Messrs. Laing & Co., for Begonia Queen Victoria, pale orange-scarlet—very finely formed flowers of great dimensions.

To Messrs. Laing & Co., for Begonia Princess of Wales, rosy-pink flushed with bright rose—stout, and of fine form.

SCOTLAND.

EDINBURGH BOTANICAL SOCIETY.

May 12.—The Society met in the evening in the class-room of the Royal Botanic Garden, Professor Dickson, President, in the chair. The following communications were read:—

I. "On the Indigenous Flora of Madeira, with exhibition of herbarium specimens of all the peculiar and some interesting or remarkable plants of that island." By Commander Francis M. Norman, R.N.

II. "Report on the Progress of Vegetation at the Royal Botanic Garden." By R. Lindsay, Curator:—

During the month of April, vegetation made comparatively slow progress. Frost occurred much more frequently than it has done for many years during the same period. This along with a succession of dry cold easterly winds, prevented any very rapid growth from taking place.

The ground also was very dry, until the last week of the month, when a moderate supply of rain fell. This did much good in assisting deciduous trees and shrubs to develope their leaves, but the temperature remained too cold for plants generally, deriving the full benefit of the rain. The thermometer was at or below the freezing point on fifteen nights; collectively 58° of frost were registered for the month, as against 15° for the corresponding month last year. The lowest readings were, on the 5th, 24°; 10th, 24°; 15th, 26°; 17th, 27°; 27th, 26°. The highest morning readings were, on the 2d, 50°; 3d, 50°; 17th, 50°; 22d, 50°; 28th, 49°. The lowest day temperature was 44°, which occurred on the 5th, and the highest 62°, on the 17th of the month. The total amount of frost registered this season up to the end of April is 520°, for the same period last season 632° were registered. The following is the distribution for each month, viz., September, 3°; October, 1°; November, 17°; December, 174°; January, 91°; February, 76°; March, 100°; and April, 58°. The lowest point reached at the garden this season was 14° Fahr., or 18° of frost, which occurred on December 20 last.

On the rock garden 159 species and varieties came into flower during April, being forty in excess of last April. Amongst the most interesting were Anemone apennina, Androsace Laggerii, Aubrietia Hendersoni and Campbelli, Arum proboscideum, Cheiranthus Menziesii, Corydalis nobilis, Erythronium giganteum and roseum, Gentiana verna, Menziesia cœrulea and empetriformis, Muscari Argæi, Iberis petræa, Narcissus rupicola, Petrocallis pyrenaica, Primula decora, frondosa, minima, glabra, involucrata, Reidii; Pulmonaria sp., Ranunculus insignis and amplexicaulis, Saxifraga flagellaris and purpurascens, Soldanella montana, Aristolochia pallida, &c.

Of the forty spring-flowering plants whose dates of flowering are annually recorded to the Society two came into flower during April, and one in May, thus completing the list.

III. "On the Temperature and Vegetation at the Glasgow Botanic Institute." By R. Bullen, Curator:—

During the month of April the temperature has been below the freezing-point eighteen times, and often very little above it, while a lower temperature of from 2° to 4° has been recorded frequently within a radius of a mile from here, but more outside the inflnence of the city atmosphere. Total frost, 79°.

With one or two slight exceptions dry days, with bright sunshine but cold winds, prevailed up to the 19th, since which date we have had some real winter weather with frequent heavy hailstorms, also thunder and lightning.

Owing to the frequent low night temperature and the dry and otherwise ungenial condition of the soil, little could be done in the way of seed sowing. Vegetation generally is in a backward state. The foliage of early leafing trees and shrubs, such as Balsam Poplar, Lilac, Thorns, &c., is not yet half developed; various evergreen shrubs are in bloom, such as the varieties of Rhododendron Nobleanum, the Nepaul R. campanulatum, &c.; also Sedum palustre, Andromeda tetragona, Berberis, Vacciniums, and the creeping Vincas. Of deciduous shrubs the following are very floriferous this season:—Forsythia viridissima, Alder in variety, various Willows and Birch. In the herbaceous department a considerable number of plants are in bloom.

Miscellaneous.—Commander Norman, R.N., exhibited a beautiful series of dried specimens of plants indigenous to the island of Madeira, illustrating his paper on the flora of the island.

W. B. Boyd, Esq., of Faldonside, brought to the meeting cut flowers of Adonis pyrenaica, Arnebia echioides (seedlings having large flowers), Primula scotica, farinosa, and the intermediate variety, Warei, said to be a hybrid between the two former; Chinese Chrysanthemum, still in fine condition; and a lovely red-flowered Aubrietia. raised by Mr. Ingram, of Belvoir Castle Gardens; W. B. Simson, Esq., Broughty Ferry, exhibited specimens of Carlina acaulis and subacaulis from Italy.

A number of interesting plants, mostly in flower, were placed on the table from the garden, amongst which were Primula elongata(?), a species from the Himalays, having yellow flowers (apparently identical with P. prolifera); Primula reticulata, also from the Himalayas (differs but little from P. sikkimensis); large pots filled with the handsome P. Reidii, P. purpurea, of Royle; P. capitata, P. farinosa, P. frondosa, Daphne striata, Gentiana verna, Tulipa Greigii, Bryanthus erectus, Hyacinthus corymbosus; cut flowers of the handsome Rhododendron Nuttallii and R. aureum superbum (a hybrid between R. ponticum and Azalea sinensis); a species of Cuscuta, the seeds of which were brought from Ceylon by Professor Bower, of Glasgow; and Raoulia, the Vegetable Sheep of New Zealand; along with various alpine plants in flower.

THE WEATHER.

THE PAST WEEK.

The following summary record of the weather for the week ending May 16, is furnished from the Meteorological Office:—

"The *weather* has been generally fair or fine in all parts of the kingdom. Although a good deal of cloud prevailed at times the rainfall was very slight.

"The *temperature* has been from 1° to 3° above the mean in Scotland, and 1° above or about equal to it in Ireland, and also in the south-west of England: but in the other English districts it has continued below its normal value, the deficit ranging between 1° and 4°. The highest of the maxima, which were recorded on irregular dates, ranged from 70° in 'Scotland, E.,' and 69° in 'England, S.,' and 'England, S.W.,' to 62° in the 'Channel Islands.' The lowest of the minima, which were recorded in most places during the latter part of the period, varied from 30° in 'England, N.W.,' and 'England, S.W.,' and 31° in 'England, S.,' to 35° in 'Ireland, N.,' and 43° in the 'Channel Islands.'

"The *Rainfall* has been less than the mean in all districts; in the south of Ireland, and the south-west of England, rain has been almost entirely absent.

"*Bright Sunshine* shows an increase on that recorded last week in most of the 'Wheat-producing Districts,' but a decrease in nearly all the 'Grazing Districts.' The percentage of the possible amount of duration ranged from 18° in 'Scotland, N.,' and 22° in 'England, N.E.,' to 51° in 'England, S.,' 57° in the 'Channel Islands,' and 58° in 'England, S.W.'"

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 32° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature.			Accumulated.	
	Above or below the Mean for the week ending May 16.	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 4, 1887.	Below 42° difference from Mean since Jan. 4, 1887.
Principal Wheat-producing Districts.		Day-deg.	Day-deg.	Day-deg.	Day-deg.
0. Scotland, N. ...	1 above	43	2	+ 54	+ 35
1. Scotland, E. ...	3 above	57	0	+ 71	+ 37
2. England, N.E. ...	1 below	43	0	— 3	+ 82
3. England, E. ...	4 below	45	2	— 97	+ 164
4. Midland Cos. ...	2 below	49	0	— 86	+ 166
5. England, S. ...	2 below	60	0	— 83	+ 152
Principal Grazing, &c., Districts.					
6. Scotland, W. ...	2 above	63	0	— 1	+ 44
7. England, N.W. ...	2 below	48	0	— 65	+ 117
8. England, S.W. ...	0 (aver.)	66	0	— 82	+ 172
9. Ireland, N. ...	0 (aver).	61	0	+ 22	+ 22
10. Ireland, S. ...	1 above	75	0	— 10	+ 98
— Channel Islands	2 below	61	0	— 150	+ 77

Districts.	Rainfall. More or less than the Mean for the Week.	Rainfall. No. of Rainy Days since Jan. 4, 1887.	Rainfall. Total Fall since Jan. 4, 1887.	Bright Sunshine. Percentage of possible duration for the Week.	Bright Sunshine. Percentage of possible Duration since Jan. 4, 1887.
Principal Wheat-producing Districts.	Tenths of Inch.		Ins.		
0. Scotland, N. ...	3 less	82	15.1	18	23
1. Scotland, E. ...	2 less	60	7.1	26	32
2. England, N.E. ...	3 less	58	5.0	22	31
3. England, E. ...	2 less	53	5.9	43	37
4. Midland Cos. ...	3 less	49	5.7	42	32
5. England, S. ...	2 less	52	6.2	51	34
Principal Grazing, &c., Districts.					
6. Scotland, W. ...	1 less	65	13.1	34	32
7. England, N.W....	2 less	53	7.6	28	33
8. England, S.W....	6 less	53	7.4	58	42
9. Ireland, N. ...	3 less	62	9.4	31	32
10. Ireland, S. ...	5 less	53	9.4	38	41
— Channel Islands	3 less	60	6.7	57	46

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING MAY 28. (AVERAGE OF THIRTY-THREE YEARS.)

May 22	56°.1	May 26	56°.7
„ 23	56°.3	„ 27	56°.9
„ 24	56°.4	„ 28	57°.2
„ 25	56°.6	Mean for the week ...	56°.6

ENQUIRIES.

"He that questioneth much shall learn much."—Bacon.

"Thanatophore."—Will those who, having used this machine, kindly give me their experience of it through the *Gardeners' Chronicle*, and if successful? and is it cheaper than using tobacco-paper?—for which I should feel very thankful, as I am anxious to satisfy my employer before purchasing one. *J. M.*

NOTICES TO CORRESPONDENTS.

*** Correspondents will greatly oblige by sending early intelligence of local events likely to be of interest to our readers, or which it is desirable to bring under the notice of horticulturists.

Intelligent Readers, do please Note *that letters relating to* Advertisements, *or to the supply of the Paper, should be addressed to the* Publisher, and that all communications intended for publication should be addressed to the Editor. Such communications should be *written on one side only of the paper*, and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Alpine Auriculas: *Daniels Brothers.* We think the specimens of these sent are very good—large, with well-defined and fairly regular outlines. The selfs and shaded flowers please us best. They ought to be found in every garden and greenhouse.—*A. T.* These were charming in their variety of colour, good development and freshness. The east border on which these grew is a site that suits most spring flowers, as they remain longer in flower than they do in positions exposed to the warm afternoon sun.

Auricula Deformed: *B. A.* The bloom is abnormal, in that a portion of the flower is united to one of the bracts, and the paste quite absent.

Black-fly on Cucumber Plants: *Poor Geordie.* The best means is washing with weak tobacco-water.

Bulbs Diseased: *W. C.* Your bulbs are attacked by the bulb-mite so frequently mentioned in our columns.

Desmodium gyrans: *H. W. C.* This is an East Indian leguminous plant, which, as its name implies, has the property of moving its leaflets. At night, whilst the blade of the leaf sinks vertically, the petiole rises. The cotyledons do not sleep, but the first-formed leaf does equally well with the older ones. The cause of the movements of plants is not clearly ascertained, but Darwin's investigations point to the influences of light and temperature being the chief causes of bringing them about; but the reason for the movement remains obscure.

Eucharis: *A. C.* Such forms often occur; it is owing to two flowers having become merged into one in a very young state.—*W. H. R.* Yes, your bulbs have the mite.

Eucharis Mite: *P. M.* The bulbs are badly infested, and in the present state of our knowledge there is nothing better to do than to throw the bulbs away, and make a start with fresh ones from a pure source. As a precaution keep bulbs from Japanese sources far from those of Eucharis. The mites in the piece of cheese are something like, but are tenfold the size of the "mite." The minute white worm seen on the Eucharis is one that feeds on decayed tissues.

Fungus on Ornithogalum: *J. S., Newry.* The name of the fungus destroying your Ornithogalums is Heterosporium ornithogali. An account of this fungus will be given in the *Gardeners' Chronicle* a little later on. *W. G. S.*

Grapes: *H. L.* These have kept very well.

Human Urine as a Manure for Vine Borders: *An Amateur.* We should not use the urine for a Vine-border without dilution with water to the extent of one-half, but the best mode of using this and night-soil, in a nearly fresh state, is by incorporating it with a suitable proportion of half-dried peat, clayey loam, or sawdust, afterwards using it as a top-dressing at intervals of three weeks or less.

Impatiens Hawkeri: *Albert Smith.*—The leaves have been infested by thrips and greenfly; some of the latter were found on them. Where the edge of the leaf was eaten on the underside it had turned brown and shrunk up.

Japanese Gardenias: *H. L.* Fine in foliage and flower, but not so neat for bouquets, &c., as our ordinary kinds.

Names of Fruit: *E. C.* Sweet Sheep's-nose Apple. —*C. Thornton.* Specimens wonderfully good for the season. It is, however, too late to name them with certainty, the true characteristics being lost.

Names of Plants: *W. W.* Dendrobium densiflorum, Schröder's var.—*D. H.* Fuchsia splendens.—*M. T. M.* Sambucus racemosa.—*S. J. P.* Narcissus incomparabilis aurantiacus flore-pleno (Butter-and-eggs).—*C. G. M.* Ornithogalum arabicum.—*W. G. B.* 1, Narcissus juncifolius; 2, Ornithogalum nutans; 3, Leucoium vernum; 4, Narcissus Tazetta; 5, Narcissus poeticus; 6, Anemone nemorosa—*J. B. R.* Phlox divaricata. —*A. C.* A pretty, and good form of O. Pescatorei, likely to improve.—*R.* Oncidium leucochilum. The others next week.—*A. H. C.* Clianthus puniceus, Escallonia macrantha. The Clianthus should grow best in a cold greenhouse, but would probably do in the house alluded to.—*X. Y. Z.* The bulb is Muscari parviflorum; the other plant Omphalodes verna.—*B. A.* 1, Eupatorium Weinmanianum; 2, Alonsoa sp.; 3, Selaginella viticulosa; 4, Peperomia resedæflora; 5, Aubrietia deltoides purpurea.

Polygonum Sieboldi, &c.: *A. M. P.* The Chinese eat the young shoots when they reach the length of six or more inches. We have tasted them grown in England, but they are too bitter and sour to please English palates. Perhaps if the shoots were blanched like Seakale, the unpleasant taste might disappear. Boussingaultia is a half-hardy tuberous plant, requiring rich vegetable sandy soil, and a well-drained, sunny aspect. B. Lachaumei is a stove species; colour of the flowers rose.

Primrose: *C. M. O.* A form intermediate between the Jack-in-the-green and the Hose-in-hose.

Purple, Scarlet, and White Verbenas, and Pelargoniums Pink and White: *J. S. Verbenas:* Isa Brunton, Miss Ruth, Purple King, Oxonian, purple; Firefly, Lustrous, Miss Woodroffe, Melindres major, very dwarf, Defiance, scarlet; Le Grand Boule de Neige, white. *Pelargoniums:* Master Christine, Little Carr, Mrs. Augusta Miles, pink; White Clipper and White Vesuvius, white.

Tomato Plants Drooping: *Love-Apple.* As you have greatly decreased the heat of the house it is very likely that the drooping of the foliage is due to that cause. Other plants, after having been subjected to considerable forcing, would exhibit the effects of cold in the same manner. It is not good practice. Can you not turn on the heat again? or the roots may be attacked.

CATALOGUES RECEIVED.

William Bull, 536, King's Road, Chelsea, London, S.W.—New and Rare Plants.

James Veitch & Sons, 544, King's Road, Chelsea, London, S.W.—Novelties and Plants for 1887.

Communications received:—C. T. Druery.—G. Rowbotham (shortly).—J. J. W.—G. M.—H. D.—R. D.—W. S.—E. C.—J. M.—F. B.—R. Lindsay.—H. W. W.—B.—J. G. Baker.—W. C.—J. R. J.—E. W.—J. W. T.—Rosa.—Journeyman Gardener.—D.—A. D.—W. S.—W. B. H.—L. K.—A Young Gardener.—J. H.—Sir J. H. Gilbert.—H. S.—Sir T. L.—F. & A. D. & S.—J. F. S.—C. E. F.

MARKETS.

COVENT GARDEN, May 19.

[The subjoined reports are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list weekly, and are responsible for the quotations. It must be remembered that these quotations are averages for the week preceding the date of our report. The prices fluctuate, not only from day to day, but often severol times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the prices at any particular date, still less can they be taken as guides to the price in the coming week. Ed.]

The dull weather has checked supplies somewhat, but prices remain the same, business being quieter. Good Pines in demand. *James Webber, Wholesale Apple Market.*

Fruit.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Apple, ½-sieve	1 6– 5 0	Melons, each ...	2 6– 3 6
— Nova Scotia, brl.	8 0–12 0	Peaches, dozen ...	15 0–21 0
Grapes, new, per lb.	4 0– 6 0	Pine-apples, Eng., lb.	1 0– 1 6
Kent Cobs, 100 lb. ...	60 0– ...	— St. Michael, each	6 0–16 0
Lemons, per case ...	13 0–21 0	Strawberries, per lb.	3 0– 6 0

Vegetables—Average Retail Prices.

	s. d. s. d.		s. d. s. d.
Artichokes, per doz. ...	4 0– ...	Lettuce, Cos., Fr., each	0 6– ...
Asparagus, French, per bundle... ...	2 0– 6 0	Mushrooms, punnet	1 6– 2 0
— English, per 100	5 0– ...	Mustard and Cress, punnet	0 4– ...
Beans, Kidney, lb. ...	2 0– ...	Onions, per bushel ...	4 0– ...
Beet, red, per dozen	1 0– 2 0	Parsley, per bunch...	0 6– ...
Carrots, per bunch...	0 6– ...	Peas, per quart ...	4 0– ...
Cauliflowers, per dozen	3 0– ...	Potatos, per cwt. ...	4 0– 5 0
Celery, per bundle ...	1 6– 2 0	„ kidney, per cwt.	4 0– 5 0
Cucumbers, each ...	0 6– 1 0	Rhubarb, per bundle	0 6– ...
Endive, per dozen ...	3 0– ...	Seakale, per punnet	2 6– ...
Green Mint, bunch...	0 6– ...	Shallots, per lb. ...	0 3– ...
Herbs, per bunch ...	0 4– ...	Spinach, per bushel...	4 0– ...
Leeks, per bunch ...	0 3– ...	Sprue, bundle ...	1 0– ...
Lettuce, per dozen ...	1 6– 2 0	Tomatos, per lb. ...	2 6– ...
		Turnips, new, bunch	1 0– ...

Potatos.—Old samples very much advanced in price. Regents, 140s.; Magnums, 150s.; Champions, 100s. per ton. Jersey Rounds (new), 4d. per lb.; Maltese, 20s. per cwt.

Plants in Pots.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz.	6 0–18 0	Fuchsias, doz. ...	4 0–12 0
Arum Lilies, dozen...	9 0–12 0	Genistas, per doz. ...	6 0– 9 0
Azaleas, per dozen ...	18 0–30 0	Hydrangeas, doz. ...	9 0–12 0
Cinerarias, per doz...	6 0– 9 0	Lilium longiflorum, per dozen ...	24 0–36 0
Cyclamens, dozen ...	9 0–12 0	Lily-of-Val., 12 pots	12 0–18 0
Cyperus, per dozen .	4 0–12 0	Lobelias, dozen ...	4 0– 6 0
Dracæna terminalis, per dozen ...	30 0–60 0	Marguerite Daisy, per dozen ...	6 0–12 0
— viridis, per doz.	9 0–24 0	Mignonette, doz. ...	6 0– 9 0
Erica, various, per dozen ...	18 0–42 0	Musk, per dozen ...	3 0– 6 0
Euonymus, in var., per dozen ...	6 0–18 0	Myrtles, per dozen...	6 0–12 0
Evergreens, in var., per dozen ...	6 0–24 0	Palms, in var., each	2 6–21 0
Fairy Roses, doz. ...	8 0–12 0	Pelargoniums, dozen	6 0–18 0
Ferns, in variety, per dozen ...	4 0–18 0	— scarlet, per doz.	4 0– 8 0
Ficus elastica, each .	1 6– 7 0	— Ivy-leaved, doz.	4 0– 6 0
Foliage plants, various, each ...	2 0–10 0	Rhodanthe, dozen ...	6 0– 9 0
		Roses, various, doz...	18 0–30 0
		Solanums, per dozen	9 0–12 0
		Spiræa, per dozen ...	9 0–12 0

Cut Flowers.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Abutilons, 12 bun ...	2 0– 4 0	Narcissus, 12 bun. ...	2 0– 4 0
Anemone, 12 bun. ...	2 0– 4 0	— double, 12 bun...	6 0– 9 0
Arum Lilies, 12 blms.	3 0– 5 0	Pansies, 12 bunches	2 0– 3 0
Azaleas, 12 sprays ...	0 6– 0 9	Pelargoniums, 12 spr.	0 6– 1 0
Bouvardias, per bun.	0 6– 1 0	Primroses, 12 bun....	0 6– 1 0
Camellias, 12 blooms	1 0– 3 0	Primulas, double, 12 sprays	0 9– 1 0
Carnations, 12 blms.	1 0– 3 0	Roses, Tea, per doz.	1 0– 2 0
Daffodils, double, 12 bunches	1 6– 3 0	— coloured, dozen.	2 0– 4 0
Eucharis, per dozen	4 0– 6 0	— red, per dozen ...	1 6– 2 0
Gardenias. 12 blooms	1 6– 3 0	— Saffrano, dozen...	1 0– 1 6
Heliotropes, 12 spr.	0 6– 1 0	Spiræa, 12 bunches..	6 0– 9 0
Jasmine, white, bun.	0 6– 0 9	Stephanotis, 12 spr.	2 0– 4 0
Lilies of the Valley, 12 sprays	0 6– 1 6	Tropæolums, 12 bun.	1 0– 2 0
Lilium longiflorum, 12 blooms	4 0– 6 0	Tulips, 12 bunches ...	2 0– 4 0
Marguerites, per 12 bunches	3 0– 6 0	Tuberoses, 12 blms....	1 0– ...
Mignonette, 12 bun.	3 0– 6 0	Violets, 12 bunches...	0 4– 0 9
Myosotis, 12 bun. ...	3 0– 6 0	— Parme, French, per bunch	3 0– 4 0
		Wallflowers, 12 bun.	3 0– 6 0

SEEDS.

London: *May* 18.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., report to-day's market presented no new feature, either of interest or importance. Occasional straggling orders for Clover seed, &c., come to hand which are executed on very moderate terms. Stocks remaining over are in small compass. Spring Tares continue unprecedentedly cheap. There is no change to be noted in the trade for Hemp and Canary seed. Sowing white Mustard remains steady. Rape seed keeps firm. Choice blue Peas are in limited supply.

CORN.

Averages.—Official statement showing the average price of British corn, imperial measure, in the week ended May 14:—Wheat, 33*s.* 6*d.*; Barley, 22*s.*; Oats, 16*s.* 7*d.* For the corresponding week in 1886:—Wheat, 31*s.* 11*d.*; Barley, 25*s.* 3*d.*; Oats, 20*s.* 3*d.*

FRUIT AND VEGETABLES.

Columbia (East London): *May* 18.—Moderate supplies of all kinds, trade active at following rates:—Cauliflowers, 5*s.* to 12*s.* per tally; Cabbages, 3*s.* to 5*s.* 6*d.* do.; Sprouting Broccoli, 1*s.* 6*d.* to 2*s.* per sieve; Spinach, 2*s.* to 2*s.* 6*d.* do.; Greens, 2*s.* to 3*s.* per dozen bunches; spring Onions, 1*s.* 6*d.* to 2*s.* 6*d.* do.; Rhubarb, 1*s.* 6*d.* to 2*s.* 6*d.* per dozen bundles; Beet-roots, 6*d.* to 9*d.* per dozen; Onions (English), 7*s.* 6*d.* to 8*s.* 6*d.* per cwt.; foreign do., 6*s.* to 7*s.* 6*d.* per bag.

Stratford: *May* 17.—The supply and trade have been good during the past week Prices:—Cauliflowers, 1*s.* to 1*s.* 6*d.* per dozen; Carrots, household, 24*s.* to 30*s.* per ton; do., cattle feeding, 18*s.* to 21*s.* do.; mangels, 9*s.* to 16*s.* do; Swedes, 20*s.* to 22*s.* do.; Onions, English, 100*s.* to 125*s.* per ton; Watercress, 6*d.* per dozen; spring Onions, 2*s.* to 2*s.* 6*d.* per dozen bundles; Rhubarb, 1*s.* to 1*s.* 6*d.* do.; Parsley, 3*d.* per bundle; Mint, 3*d.* do.; Radishes, 9*d.* to 10*d.* per dozen; Lettuce, 1*s.* to 1*s.* 3*d.* do.; Apples, 14*s.* to 15*s.* per cwt.; do., 4*s.* to 5*s.* per bushel; frame Cucumbers, 3*s.* to 3*s.* 6*d.* per dozen; Dutch do., 1*s.* 9*d.* to 2*s.* do.

POTATOS.

Borough and Spitalfields: *May* 17.—There have been fair supplies and steady trade at the following quotations:—Regents, 90*s.* to 120*s.*; Magnum Bonums, 100*s.* to 150*s.*; Champions, 80*s.* to 90*s.* per ton. New Malta round, 12*s.* to 14*s.*; and Lisbon, ditto, 10*s.* to 12*s.* per cwt.

Columbia (East London): *May* 18.—Quotations:—York and Lincoln Magnums, 80*s.* to 100*s.*; do. Regents, 80*s.* to 90*s.*; do. Champions, 60*s.* to 70*s.*; Kent and Surrey Regents, 80*s.* to 85*s.*; do. Magnums, 80*s.* to 95*s.*; do. Champions, 60*s.* to 70*s.*; Cambridgeshire Regents, 75*s.* to 90*s.*; do. Magnums, 80*s.* to 100*s.*; do. Champions, 60*s.* to 70*s.*; Scotch Regents, 80*s.* to 120*s.*; do. Magnums, 80*s.* to 140*s.*; do. Victorias, 95*s.* to 100*s.*; do. Champions, 60*s.* to 70*s.* per ton.

Stratford: *May* 17.—Quotations:—Best Magnums, 90*s.* to 110*s.*; do. Fenland, 70*s.* to 80*s.*; do. Champions, 80*s* to 90*s.*; do. Scotch Champions, 75*s.* to 80*s.* per ton.

HAY.

Averages.—The following are the averages of the prices obtained at the various Metropolitan markets during the past week:—Clover, prime, 88*s.* to 100*s.*; inferior, 70*s.* to 84*s.*; hay, prime, 70*s.* to 92*s.* 6*d.*; inferior, 45*s.* to 80*s.*; and straw, 30*s.* to 44*s.* per load.

"ARCHIMEDEAN"

AMERICAN LAWN MOWERS.

AWARDED

HIGHEST PRIZE

AT THE

Paris Exhibition, 1878;

and the JURY, in their REPORT, say:—

"The 'ARCHIMEDEAN' did the BEST WORK of any Lawn Mower exhibited."

ALSO AT

Sydney Exhibition, 1879-80

AND AT

Melbourne Exhibition, '80-1

Opinions of the Press:

"Far superior to any of ours."—Vide *The Field*.

"Remarkably easy to work."—Vide *Gardeners' Magazine*.

"The quickest, most simple, and most efficient mower ever used."—Vide *Gardeners' Chronicle*.

"We feel bound to recommend it to our readers as one of the best mowers we have as yet made acquaintance with."—Vide *Floral World*.

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Delivered Carriage Free to all Railway Stations in Great Britain.

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BOULTON & PAUL, NORWICH,

HORTICULTURAL BUILDERS and HEATING ENGINEERS.

Our GREENHOUSES and HEATING APPARATUS are Erected in every part of the Kingdom.

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PEACH HOUSES,

FORCING HOUSES, &c.,

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To

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41, Wellington Street, Strand,

LONDON, W.C.

_____ 1887.

Please send me "The Gardeners' Chronicle" *for* _____ *Months, commencing* _____, *for which I enclose P.O.O.* _____.

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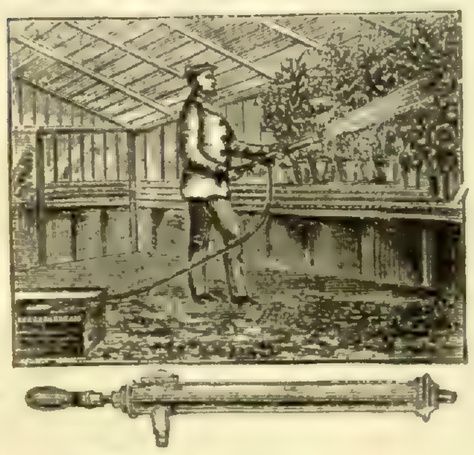
Cheques should be crossed "DRUMMOND."

G. C., May 21, 1887.

PATENT FLOWER AND PLANT SUPPORTS.

B. 2694. B. 2917.

PATENT LIGATURES, for PATENT METEOR GARDEN SYRINGE, No. B. 3088.



Rose, Fruit, or Forest Trees.

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BIRMINGHAM.

Complete Price List on application.

GFS

HORTICULTURAL SHEET GLASS

14×12	20×15
16×12	20×16
18×12	22×16
20×12	24×16
16×14	20×18
18×14	22×18
20×14	24×18

21-oz. Foreign of the above sizes, in 100 and 200 feet boxes, 3ds and 4ths qualities, always kept in stock.

A large stock of similar current sizes of **15-oz.** glass in 200 feet boxes.

Propagating and Cucumber Glasses, and all Miscellaneous Glass Articles, can be obtained from

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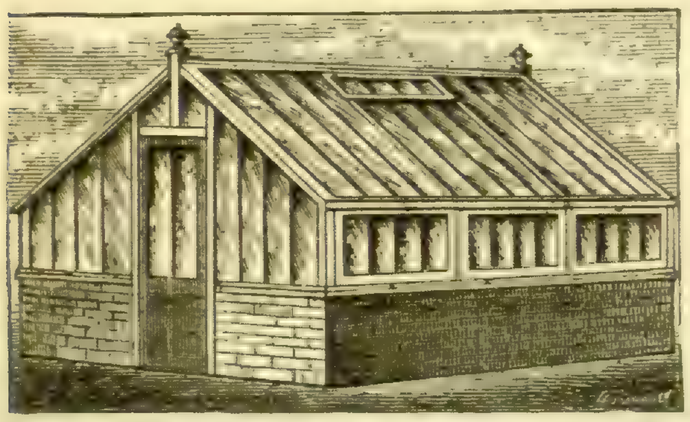
Stock List and Prices on application. Quote *Chronicle.*

BECKETT BROS.,

HORTICULTURAL BUILDERS AND HEATING ENGINEERS,

CHELMSFORD.



Length.	Width.			Length.	Width.		
10 by	8 ft.	£7	7 0	30 by	12 ft.	£23	19 6
15 by	10 ft.	11	15 0	40 by	14 ft.	34	9 0
20 by	12 ft.	17	4 6	50 by	14 ft.	42	1 0

LEAN-TO and THREE-QUARTER SPAN same prices as above.

PIT FRAMES equally cheap.

WRIGHT & HOLMES.

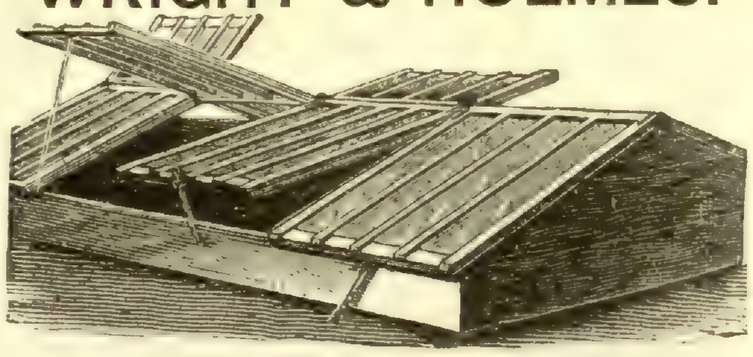


Figure 5.—Three-quarter Span Frame.

SILVER MEDALS 1884 and 1886.

The above Frames are well made, durable, and strong; the principals are cast-iron, to which the back and front are bolted. Lights 2 inches thick, glazed with 21-oz. English sheet glass, painted three coats. Delivered, carriage paid, to any railway station in England or Wales.

Length.	Width.	Price.
8 feet ...	6 feet ...	£4 10 0
12 ,, ...	6 ,, ...	6 3 0
16 ,, ...	6 ,, ...	7 18 0
20 ,, ...	6 ,, ...	9 12 6
24 ,, ...	6 ,, ...	11 10 0

Illustrated CATALOGUE post-free on application to

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GREENHOUSES.

No. 4, Span-roof, plain, but of the best construction. Price, erected complete (with brickwork), within 15 miles of London Bridge; proportionate prices in any part of the country. Lean-to's in proportion.

Loughborough Hot-Water Apparatus (fixed) extra as below.

Size.	Price.	H.W. Ap.	Size.	Price.	H.W. Ap.
11ft. by 8ft.	£20 0	£5 15	25ft. by 15ft.	£58 0	£10 15
15ft. by 9ft.	£30 0	£6 5	30ft. by 15ft.	£71 0	£12 5
20ft. by 12ft.	£42 10	£8 15	40ft. by 17ft.	£111 0	£22 0

ILLUSTRATED SHEETS of CONSERVATORIES, GREENHOUSES, &c., with Prices for Erecting and Heating, FREE.

SURVEYS MADE IN ANY PART OF THE COUNTRY FREE OF CHARGE. Designs and Estimates FREE.

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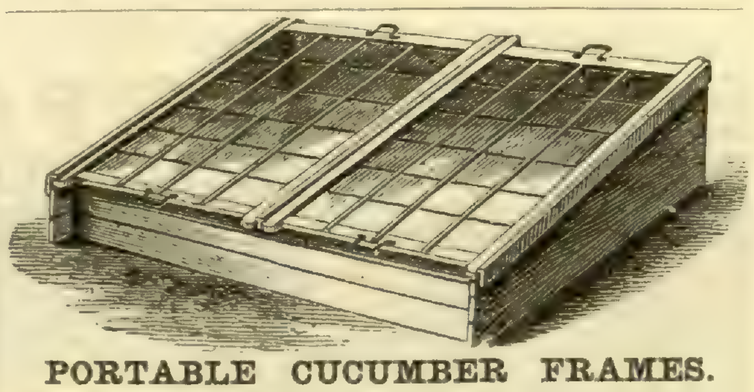
46A, King William Street. } *LONDON BRIDGE.*



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R. HALLIDAY AND CO. desire to draw special attention to their Cucumber Frames, of which they always have a large stock, ready glazed and painted. They are made of the best materials, and can be put together and taken apart in a few minutes by any one.

Prices delivered to any station in England:—		£ s. d.
2-light frame, 8 feet by 6 feet	Packing Cases free	3 10 0
3-light frame, 12 feet by 6 feet		5 5 0
6-light frame, 24 feet by 6 feet		10 0 0

The glass is nailed and puttied in. Lights and framing for brick pits at proportionately low prices.

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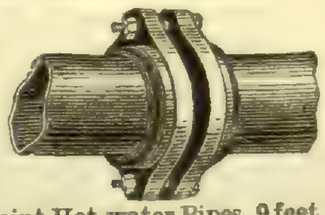

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Garden Engine and Water-Barrow Combined.

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CASH PRICES (Carriage Paid).

15 gallon size, £3 15s.
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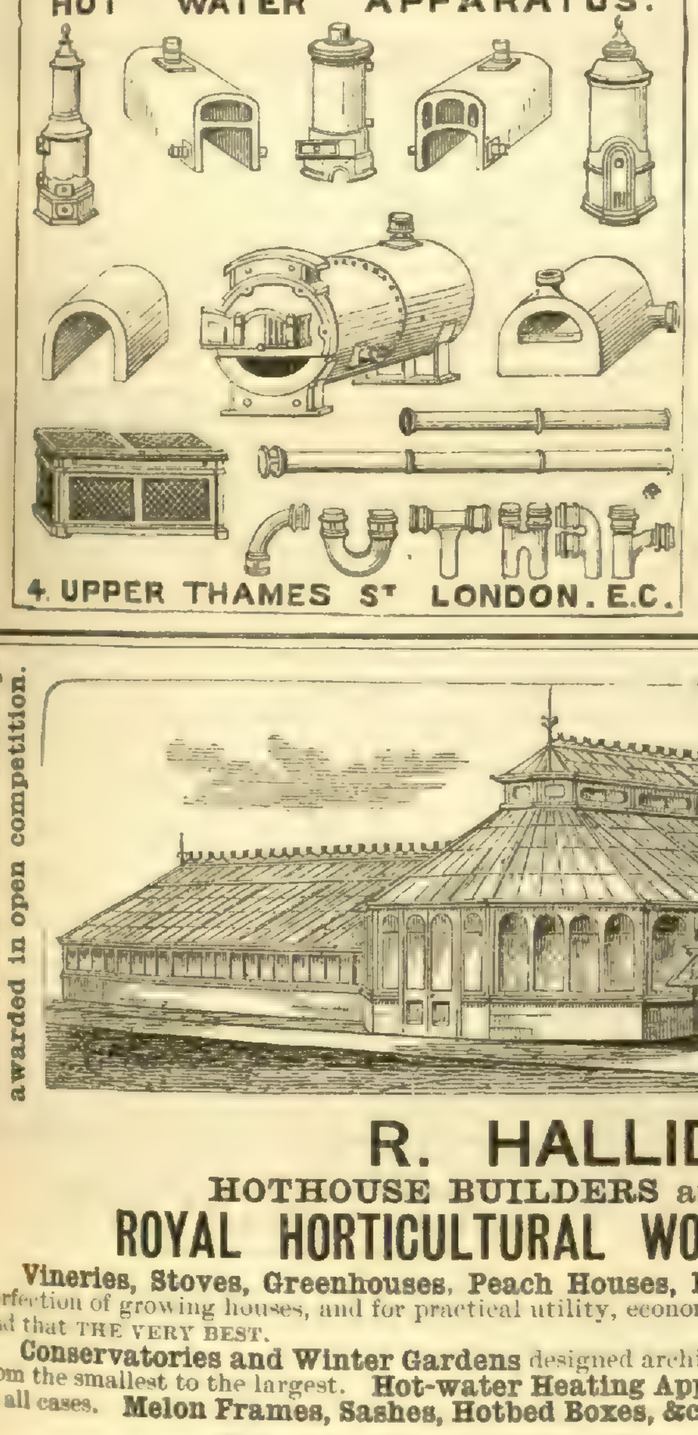

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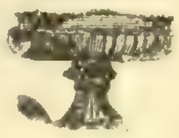
THE ABOVE and many other PATTERNS are made in materials of great durability. The plainer sorts are specially suited for KITCHEN GARDENS, as they harbour no Slugs or Insects, take up little room, and once put down incur no further labour or expense, as do "grown" Edgings, consequently being much cheaper,



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8 "	..	0	5	0	19 "	..	0	10	6
9 "	..	0	5	6	20 "	..	0	11	0
10 "	..	0	6	0	21 "	..	0	11	6
11 "	..	0	6	6	22 "	..	0	12	0
12 "	..	0	7	0	23 "	..	0	12	6
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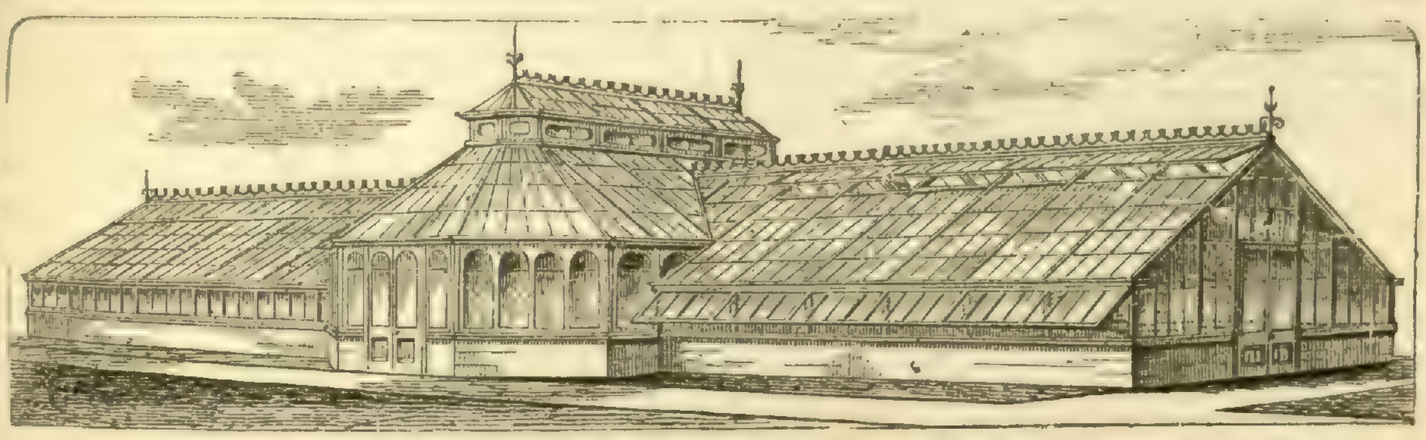

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Vineries, Stoves, Greenhouses, Peach Houses, Forcing Houses, &c., constructed on our improved plan, are the perfection of growing houses, and for practical utility, economy, and durability cannot be equalled. We only do one class of work, and that THE VERY BEST.

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Our Maxim is and always has been—

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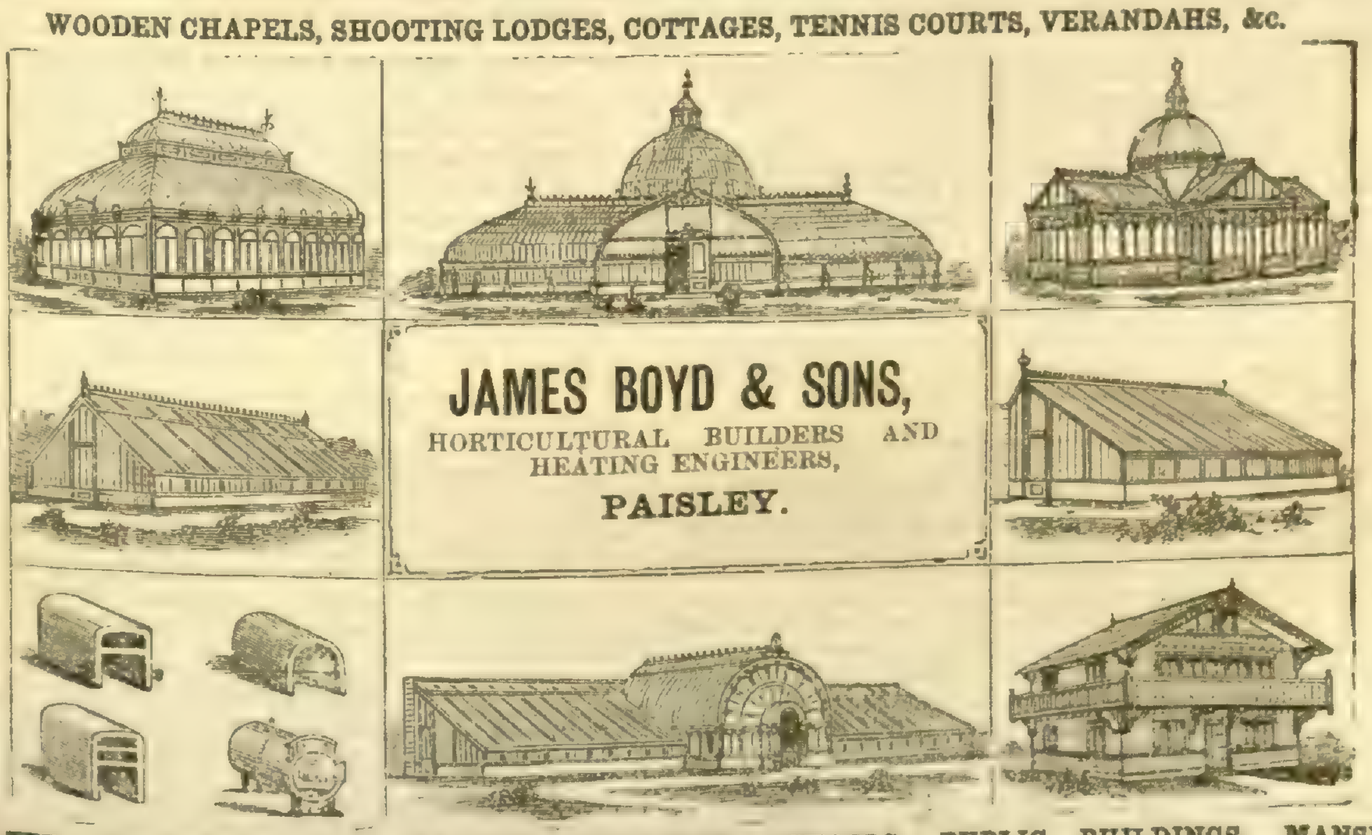

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HORTICULTURAL BUILDERS AND HEATING ENGINEERS,

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HOT-WATER APPARATUS for WARMING CHURCHES, SCHOOLS, PUBLIC BUILDINGS, MANSIONS, HARNESS ROOMS, DRYING ROOMS, HOTHOUSES, and BUILDINGS OF EVERY DESCRIPTION.

HILL & SMITH'S BLACK VARNISH

for preserving Ironwork, Wood, or Stone.

(Registered Trade Mark.)

An excellent substitute for oil paint, at one-third the cost. Used in all London Parks, at Windsor, and Kew Gardens, and on every important estate in the Kingdom. Has stood the test of forty years' trial. Requires no mixing; can be applied cold by any ordinary labourer.

Price 1s. 6d. per gallon at the manufactory, or carriage-paid to any railway station, 1s. 8d. per gallon in casks of 36, 20, or 10 gallons.

CAUTION.—Every cask bears the above Registered Trade Mark. Beware of cheap imitations.

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A large quantity of all descriptions and sizes in stock, at the lowest possible prices.

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ESTABLISHED, A.D. 1818.

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Horticultural Builder and Hot-water Engineer,

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Plans and Estimates on application.

Experienced Workmen sent to any part of the Kingdom.

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(The Oldest London House in the Trade, Estd. 1780),

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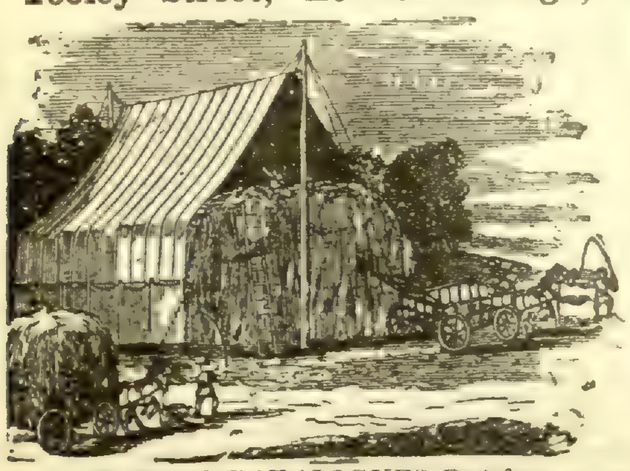

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SCRIM CANVAS, 1 yard wide, 3*d.*; 1½ yard, 4½*d.*; and 2 yards, 6*d.* per yard.
TIFFANY, 38 inches wide, in 20 yard pieces, 3*s.* 6*d.* per piece.
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His Grace the late **Duke of Leinster**, Carton, said:—"It has given great satisfaction, it works extremely well, and saves much labour."

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The originals of many voluntary Testimonials from parties now using the Machine, written in the most complimentary terms, may be inspected on application to the Proprietors,

THOMAS MOORE & CO., 67, MIDDLE ABBEY STREET, DUBLIN,

TO WHOM ALL ORDERS SHOULD BE ADDRESSED.

NEW FERN,

"ADIANTUM CUNEATUM ELEGANS."

CHARLES KERSHAW now offers this beautiful FERN, which will probably supersede all others for cutting and decorating. Hitherto almost the only Fern used for these purposes has been the "cuneatum." This new form of it is *hardier, stands better when cut, and will produce more than twice the number of fronds than that old favourite.* Nothing more need be said of its merits than to give the following condensed description of it from the *Gardeners' Chronicle* for August 1, 1885, by the highest authority on Ferns, Mr. Moore:—

He says:—"This is an elegant variety of the old favourite Adiantum cuneatum. The fronds are of about the same size, and the light airy appearance which its small and wide-set pinnules give to it, gives it a perfect claim to the title of elegans which we propose to apply to it. Less dense than the typical form, and less gossamer-like than the variety gracillimum, it is about intermediate between the two, perfectly distinct and equally effective as a decorative plant."

The Editor of the *Gardeners' Chronicle*, October 2, 1886, says:—"This variety retains the elegant character which suggested its name—it is pleasing and graceful in appearance The plants before us are of a dense stocky habit, and carry an enormous number of fronds, and are well fitted for furnishing and decorative purposes."

Extra Strong Plants, each 2s. 6d., or free per Parcel Post 3s.

Price to the Trade on application.

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NEW EDITION, CORRECTED UP TO DATE.

THE COTTAGER'S CALENDAR OF GARDEN OPERATIONS.

By the late Sir JOSEPH PAXTON, M.P. Reprinted from the *Gardeners' Chronicle.*

Price 3d., post-free 3½d.; twenty-five copies, 5s.; fifty, 10s.; and one hundred, 20s.

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W. RICHARDS, 41, WELLINGTON STREET, STRAND, LONDON, W.C.

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CONTENTS.

Amaryllis Colonel Burnaby ... 709
Auriculas, new ... 703
Birkenhead's beetle-trap 714
Books:—
Through the Fields with Linnæus ... 711
Genera Plantarum, Supplement to ... 712
Bromeliaceæ, drawings of 710
Calanthes and their culture ... 704
Carriage of fruit to London ... 710
Coffee culture in Rio Janeiro ... 710
Covent Garden Prices ... 713
Cultural memoranda ... 706
Crystal Palace, the ... 710
Dendrobium polyphlebium ... 702
Foreign correspondence . 714
Fruit crops ... 713
Fruit register ... 707
Fruits under glass ... 707
Gardeners' orphan fund . 708
Gardeners' self-help societies ... 714
Helionopsis umbellata ... 711
Kew notes... ... 706
Maxillaria tenuifolia ... 702
May, the month of ... 701
Mistleto ... 714
Narcissus Glory of Leyden ... 704
Newcastle Exhibition ... 706
Onion seed, bad germination of ... 714
Peaches, &c., glands of... 710
Peziza tuberosa ... 712
Plants and their culture 707
,, variation in ... 705
Primulas, hardy ... 714
Roses, new, the ... 702
Societies:—
Crystal Palace... 716
Dresden... 715
Preston and Fullwood 717
Royal Horticultural, 708, 714
Texas, climate in ... 705
Thanatophore, the ... 713
Tillage, intercultural ... 708
Trees and shrubs ... 711
Tree Ferns of New Zealand ... 713
Turnip sowing, early ... 714
Urginea macrocentra ... 702
Weather ... 717

ILLUSTRATIONS.

Amaryllis Colonel Burnaby ... 709
Hypericum chinense ... 705
Narcissus Glory of Leyden ... 704
Peziza tuberosa ... 712
Tree Fern surrounded by Panax arboreum ... 713

NOTICE TO SUBSCRIBERS.—All Numbers of the "Gardeners' Chronicle" from January 1 of this year are still to be had.

CRYSTAL PALACE.
GREAT ROSE SHOW of SEASON,
SATURDAY, July 9.
For Schedules and Entry Forms apply to
Mr. W. G. HEAD, Garden Superintendent, Crystal Palace, S.E.

ALEXANDRA PALACE,
London, N.
GREAT ROSE SHOW, JULY 14, 15, and 16. Entries close July 7, 1887. For Schedules and full particulars, apply to J. S. COOKE, Secretary of the Show, Alexandra Palace, N.

BRIGHTON and SUSSEX FLORICULTURAL and HORTICULTURAL ASSOCIATION.
GRAND SUMMER EXHIBITION, JULY 6 and 7, at the Royal Pavilion. 1st prize for 10 Stove and Greenhouse Plants, £10. 1st prize for 8 Orchids, £5. 1st prize for 12 Foliaged Plants, £5. 1st prize for 48 Roses, £5. 1st prize for Collection of Fruit, £5. Schedules of prizes ready.
EDWARD CARPENTER, Secretary.
Secretary's Office: 96, St. James' Street,
Brighton, March 28, 1887.

5000 ECHEVERIAS, consisting of E. secunda glauca (from open), E. metallica, and E. metallica glauca, fine plants, in 5-inch pots.
Special prices on application.
JAMES DICKSON AND SONS, Newton Nurseries, Chester.

Verbenas, Alternantheras, Coleus, &c.
JOHN SOLOMON offers VERBENAS, White, Scarlet, Purple, Pink, and Crimson. ALTERNANTHERAS, Amœna, and other sorts. COLEUS, Verschaffelti. HELIOTROPES, light and dark, all through good plants at 6s. per 100, 50s. per 1000. LOBELIA PUMILA MAGNIFICA, warranted true, from cuttings, at 2s. 6d. per 100, 20s. per 1000; or any of the above, established in small pots, at 12s. per 100. Terms cash, package included.
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Through Death of Proprietor and Breaking-up of Establishment, one of the oldest
COLLECTIONS of PINES is now for Sale; principally Queens, some Black Jamaicas, and C. Rothschild, in Fruiting, Succession, and Sucker sizes; about 100 plants.—Apply for particulars to
E. S. WILLIAMS, The Victoria and Paradise Nurseries, Upper Holloway, London, N.

FINEST LILY OF THE VALLEY CROWNS for Early Forcing, by Gustav A. Schultz, Berlin. For price write to
JACOB AND VALENTIN, 56, Cheapside, London, E.C.

HARDY RHODODENDRONS and AZALEAS.—The most extensive stock in the Kingdom of the finest hardy varieties known.
☞ The Rhododendrons in Rotten Row and the Botanic Gardens, Regent's Park, are supplied by
ANTHONY WATERER, Knap Hill Nursery, Woking, Surrey.

CREEPERS FOR WALLS, in Pots, can be moved at any time.—By planting what is suitable, an ugly object may easily and rapidly be made beautiful. Descriptive LIST and advice free.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

TROPÆOLUM SPECIOSUM. — The well-known hardy Scarlet Climber. Extra strong plants out of pots, each, 1s.; half-dozen, 5s.; dozen, 9s.; post-free.
HOWDEN AND CO., The Nurseries, Inverness.

MARÉCHAL NIEL ROSES, in 5-inch pots, Young plants, strong and good, at 50s. per 100. Sample dozen, 6s. Packing free for cash with order.
C. ALLEN, Stone Hills Nursery, Heigham, Norwich.

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PRIMULA, "Double White," 5s. per dozen, 35s. per 100.
Price for quantities on application.
Terms, Cash with Order.
TAYLOR AND CO., Nurserymen, Timperley, Cheshire.

PEACHES — PEACHES.— Highest Market Prices guaranteed for really good and well-packed FRUIT of the above.—WISE AND RIDES, Covent Garden, W.C.

SQUELCH AND BARNHAM, North Row, Covent Garden, W.C., are OPEN TO DISPOSE OF any quantity of MUSCATS and BLACK GRAPES, TOMATOS, CUCUMBERS, FRENCH BEANS, STRAWBERRIES, CHOICE FLOWERS, &c. Highest Market Prices obtained. Account Sales daily; Cheques weekly or as preferred by Sender. Baskets and Labels supplied. References given.

MESSRS. GREGORY AND EVANS, NURSERYMEN, Sidcup, and 285, 286, 287, 288, Flower Market, Covent Garden, W.C., are open to RECEIVE CONSIGNMENTS of Choice CUT FLOWERS in any quantity for their Commission Department. Boxes and Labels supplied.
Telegraph Address—"COMMISSION, SIDCUP."

WANTED, Two MAGNOLIA GRANDIFLORA EXMOUTHII, not less than 5 feet high, in pots. Send price and all particulars to
J. GARAWAY AND CO., Durdham Down Nurseries, Clifton, Bristol.

WANTED, Large PALMS, TREE FERNS, and other large ORNAMENTAL FOLIAGED PLANTS, in EXCHANGE for ORCHIDS or OTHER PLANTS. Send full particulars to
The LIVERPOOL HORTICULTURAL COMPANY (John Cowan), Limited, The Vineyard and Nurseries, Garston, Liverpool.

Cœlogyne cristata.
WANTED, Large White well-grown AZALEAS, indica, alba, Fielder's White, and Flag of Truce, in EXCHANGE for grand pairs of CŒLOGYNE CRISTATA, equal to the Chatsworth variety.
TURNER BROS., Green Hill Nursery, Allerton, Liverpool.

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JAMES DICKSON AND SONS, "Newton" Nurseries, Chester.

VERBENAS—VERBENAS.—100,000, all strong, healthy, and well-rooted, in 4, 8, or 12 varieties, 6s. per 100, 50s. per 1000. Package free. Terms cash with all orders.
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BEGONIAS, Superb Bedding and other varieties. GERANIUMS Dr. Orton, Henri Jacoby, West Brighton Gem, Flower of Spring, Crystal Palace Gem, Mrs. Pollock, &c. CALCEOLARIA Golden Gem; and other Bedding Plants. Special TRADE LIST on application to
B. R. DAVIS, The Yeovil Nurseries, Yeovil.

PRIMULAS—PRIMULAS—PRIMULAS.—Eighteenth year of distribution. Williams' Superb Strain, 1s. 6d. per dozen; 10s. per 100. CINERARIAS, same price. Package and carriage free. Double White PRIMULAS, 6d. each. Volunte Nationale alba, the best winter white PELARGONIUM, strong rooted plants 1s. each.
JOHN STEVENS, The Nurseries, Coventry.

JOHN LAING AND CO. beg to announce that their New and General Plant CATALOGUE for 1887 is now published, and will be forwarded Gratis and Post-free to all applicants. The Nurseries, Forest Hill, London, S.E.

A Few Large Healthy
PALMS, 3 to 5 feet high for immediate disposal — Latania borbonica, Seaforthia elegans, Chamærops excelsa, and Phœnix reclinata—from 10s. per pair.
GARDENER, Holly Lodge, Stamford Hill, London, N.

FOR SALE, LOMARIA GIBBA—Good stuff. Best variety, perfectly clean, just ready for 48's, 16s. per 100. G. SAVILLE, The Nursery, Lee Park, Lee.

AURICULAS on Sale, from the best Show varieties, stock of the late Ed. Pohlmann.
F. POHLMANN, Summergate, Halifax.

CHEAP PICEA NORDMANNIANA, 1½ to 2 feet, 10s. per dozen; 2 to 2½ feet, 15s. per dozen; 2½ to 3 feet, 24s. per dozen; 3 to 3½ feet, 30s. per dozen. All EVERGREENS and FRUIT TREES cheap; CURRANTS and GOOSEBERRIES from 7s. 6d. per 100. 25 per cent. discount allowed for cash to clear. For LIST apply
T. L. MAYOS, Highfield Nurseries, Hereford.

EIGHTY THOUSAND CLEMATIS, in Pots, of all the finest Double and Single Varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants; extra strong plants repotted into 5½-inch pots, 2s. 6d. each. Descriptive LIST on application.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Mangel Wurzel and Turnip Seeds.
H. AND F. SHARPE are now prepared to make special offers of home-grown MANGEL WURZEL and TURNIP SEEDS, raised in 1886 from specially selected Bulbs. The quality is excellent and the prices are very low.
Seed Growing Establishment, Wisbech.

ASPARAGUS.—This delicious vegetable does not require half the expense often incurred. Strong roots, 2s. 6d. per 100; extra strong ditto, two years old, 3s. 6d. per 100; three years, 5s. per 100.
RICHARD SMITH AND CO., Worcester.

FIELD AND HEARSON'S NICOTYL VAPORISER. For the Destruction of Aphis, &c., WITHOUT SMOKE. CATALOGUE post-free.
BENJAMIN FIELD, F.R.B.S., 75A, Queen Victoria Street, E.C.; Depôt, Swan Place, Old Kent Road, S.E.

Important Notice.
To Florists, Seedsmen, Horticultural Builders, &c.
PLANTS, FLOWERS, FRUITS and VEGETABLES a Specialty.
WM. J. WELCH begs to call particular attention to his productions for
ILLUSTRATING BOOKS, MAGAZINES, CATALOGUES, and for ADVERTISING PURPOSES.
For Specimens see *Gardeners' Chronicle*, 1883 to 1886.
ADDRESS:—25, Wellington Street, Strand, London, W.C

SALES BY AUCTION.

Wednesday Next.—(Sale No. 7423.)
POYLE MANOR, COLNBROOK.

MR. J. C. STEVENS will SELL by AUCTION, on the Premises as above, on WEDNESDAY, June 1, at half-past 12 o'Clock precisely, by Order of the Executors of the late Dr. Meadows, the Collection of ESTABLISHED ORCHIDS, comprising splendid specimens and rare species; also a fine lot of CROTONS, DRACÆNAS, PALMS, STEPHANOTIS, FERNS, EUCHARIS, AZALEAS, and other STOVE and GREENHOUSE PLANTS; No. 1 PULSOMETER or PUMPING ENGINE, &c.

On view the day prior to and morning of Sale, and Catalogues had on the Premises, and of Mr. J. C. STEVENS, Auctioneer and Valuer, 38, King Street, Covent Garden, London, W.C.

Collection of Established Orchids without the least reserve.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, June 2, at half-past 12 o'Clock precisely, by order of Geo. F. Wilson, Esq., of Weybridge, in consequence of his hardy and half-hardy plants now requiring all his available time, his Collection of ESTABLISHED ORCHIDS, comprising Odontoglossums (amongst the O. Alexandræ will be found many grand and distinct varieties), Masdevallias, Ada aurantiaca, Cypripedium insigne Maulei, Cœlogynes, Pilumnas, &c.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7424.)
ORCHIDS in FLOWER and BUD, &c.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W. C., on THURSDAY NEXT, June 2, about 200 Lots of ORCHIDS in FLOWER and BUD, comprising some splendid forms of Odontoglossum Alexandræ, O. hybrids, O. vexillarium; a fine lot of Cattleya Mossiæ, including several plants on trunk of tree with about 50 flowers and buds, C. Mendelii, C. Gaskelliana; Lælia elegans, Anguloa Ruckeri, Cypripedium Godefroyæ, C. concolor Tonkienensis, Trichopilia crispa marginata, Masdevallia Harryana, M. Chelsoni, M. Chestertoni, M. Bull's-blood variety, &c.

On view morning of Sale, and Catalogues had.

Specimen Orchids in Flower, from the Collection of W. E. BRYMER, Esq.

MR. J. C. STEVENS has received instructions from W. E. Brymer, Esq., of Dorchester, to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, June 6, at half-past 12 o'Clock precisely, about 100 SPECIMEN PLANTS in Flower, from his renowned Collection, which will be exhibited at the Bath and West of England Show, and removed from there. Further particulars in next week's Advertisement.

A Further Portion of the Collection of Rev. J. B. Norman, of Edgware.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, June 6, about 300 fine established plants of ODONTOGLOSSUM ALEXANDRÆ, and OTHERS, many with spikes, from the above well known Collection.

On view morning of Sale, and Catalogues had.

Special Sale of Orchids in Flower and Bud.

MR. J. C. STEVENS begs to announce that his next SPECIAL SALE of ORCHIDS in flower and bud will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, June 15, and he will be glad if Gentlemen desirous of entering Plants for this Sale will send particulars as soon as possible.

Important Sale of Choice Orchids at EDINBURGH, JUNE 9.

MR. DAVID MITCHELL, HORTICULTURAL AUCTIONEER, will DISPOSE OF, by PUBLIC AUCTION, at Freemasons' Hall, 98, George Street, Edinburgh, on THURSDAY, June 9, at 12 o'Clock noon, a very Choice and Select COLLECTION of ORCHIDS, the property of Messrs. William Thomson & Sons, Clovenfords, by Galashiels, comprising:—

CYPRIPEDIUM VEXILLARIUM.
" ŒNANTHUM SUPERBUM.
" NITENS.
" JAVANICO × SUPERBIENS.
" VERNIXIUM.
CATTLEYA SKINNERI ALBA.
LYCASTE SKINNERI ALBA.
CATTLEYA LABIATA, true autumn-flowering variety.
DENDROBIUM AINSWORTHII ROSEUM, grand specimen.
" SPLENDIDISSIMUM.
" ENDOCHARIS,
VANDAS, of sorts.
CATTLEYA TRIANÆ, "General Gordon."
ODONTOGLOSSUMS.
MASDEVALLIAS, &c.

The whole of the Plants are guaranteed true to name, and in splendid health.

Commissions will be carefully attended to by addressing the Auctioneer, or Messrs. W. THOMSON AND SONS, and from whom Catalogues can also be had.

Edinburgh, May 25.

Important Sale of an Exceptionally fine Collection of CHOICE SELECTED CATTLEYAS.

MESSRS. ARTINGSTALL AND HIND respectfully announce that they are instructed by O. O. Wrigley, Esq., to SELL by AUCTION, at the Manchester Botanical and Horticultural Society's Show Ground, Old Trafford, on MONDAY, June 6, at 2 o'Clock, the renowned COLLECTION of VALUABLE CATTLEYAS, which will be exhibited at the Whitsuntide Horticultural Exhibition, thus giving buyers an opportunity of inspecting and making a careful selection prior to sale. There are at least fifty distinct varieties of these magnificent Orchids, and it offers an opportunity to purchasers seldom met with.

Catalogues will be issued shortly. For further particulars, apply to Mr. BRUCE FINDLAY, Botanical Gardens, Old Trafford; or the Auctioneers, at their Offices, 45, Princess Street, Manchester.

Important Sale of the Woodlawn Collection of Valuable PLANTS, comprising several thousands of choice Orchids, Nepenthes, Sarracenias, Eucharis, Lapagerias, Ericas, Azaleas, and a general assortment of grand Stove and Greenhouse productions, which include some of the most rare and finest specimens in the country. Also Eight First-class Plant-houses, with Heating Apparatus complete.

MESSRS. ARTINGSTALL AND HIND beg to announce that they are favoured with instructions from Joseph Broome, Esq., who is leaving Woodlawn, situate at Didsbury, near Manchester, to SELL by AUCTION, at 12 o'Clock noon, on WEDNESDAY, THURSDAY, and FRIDAY, June 22, 23, and 24 (and NOT on TUESDAY, June 21, as formerly notified—that day being fixed by an Order in Council for the Jubilee Celebration), in the grounds of the above-named residence, the whole of the exceptionally fine COLLECTION of PLANTS, and the greater portion of Plant-houses.

Catalogues will be issued fourteen days prior to Sale, when they may be obtained, together with further particulars, on application (personally, or by post) to Mr. ALFRED COLE, Head Gardener; or from the Auctioneers, 45, Princes Street, Manchester.

Finchley Road, N.W.

ANNUAL SALE of thousands of well grown BEDDING PLANTS, CAMELLIAS, 1000 CHRYSANTHEMUMS, 1000 Tea and Other ROSES, 500 FERNS, LILIES, and other useful PLANTS.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, on the Premises, The Child's Hill Farm Nursery, Finchley Road, N.W., close to the Castle Hotel, on WEDNESDAY NEXT, June 1, at 12 o'Clock precisely, by order of Messrs. Morle & Co.

On view two days prior to Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

Friday Next.

Various Importations of ORCHIDS, received direct, for unreserved Sale.

1,200 ODONTOGLOSSUM ALEXANDRÆ, Pacho varieties.

MESSRS. PROTHEROE AND MORRIS will include in their SALE of ORCHIDS on FRIDAY NEXT, June 3, 1200 ODONTOGLOSSUM ALEXANDRÆ, in fine condition, amongst them being numerous large masses; three cases of Brazilian ORCHIDS, two cases of VANDA species from the Philippines; RENANTHERA COCCINEA, a consignment of DISAS and MYSTACIDIUM FILICORNE, offered for the first time; and about 100 lots of well-grown ESTABLISHED ORCHIDS, consisting of Odontoglossums, Dendrobiums, Masdevallias, Cypripediums, &c.

On view morning of Sale, and Catalogues had.

Friday Next.

CATTLEYA MENDELII, large and selected masses.
VARIOUS CATTLEYAS from the Amazon.
CATTLEYA SUPERBA SPLENDENS, true.
The whole with fine dormant eyes, and in the best possible condition.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. G. F, White to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, June 3, at half-past 12 o'Clock precisely, a fine importation of

CATTLEYA MENDELII,

large and selected masses. To these plants Mr. White desires to call particular attention, as having been specially collected for him in a locality producing the very best types. From his previous collections in this district many fine varieties have bloomed, and been certificated, some only quite recently. Also a consignment of VARIOUS CATTLEYAS from the Amazon, including large masses of ELDORADO SPLENDENS and WALLISII varieties, and a magnificent lot of the true CATTLEYA SUPERBA SPLENDENS, Rio Negro variety.

On view morning of Sale, and Catalogues had.

13th Bedding Plant Sale.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on SATURDAY, June 4, about 80,000 BEDDING and GREENHOUSE PLANTS, arranged in lots to suit all purchasers, consisting of Geraniums, Fuchsias, Heliotropes, Calceolarias, Lobelias, Alternantheras, Mesembryanthemums, &c., all well grown stuff and ready for immediate effect. The stock may be viewed and Catalogues had on application three days before the Sale, either of the Auctioneers, 67 and 68, Cheapside, E.C.; or to the Nursery, JAMES PAGE, The Hornsey Nursery, Hornsey, N.

Hammersmith, W.

SALE of well-grown STOVE and GREENHOUSE PLANTS, by order of Mr. J. Prewett, who is making alterations to some of his Greenhouses.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Swiss Nursery, Hammersmith, W., near Shaftesbury Road Station, on WEDNESDAY, June 8, at 12 o'clock precisely, a large quantity of well-grown STOVE and GREENHOUSE PLANTS, 12 large white Camellias, 4 to 9 feet; Specimen Azaleas, Stephanotis, Ferns, 50 pots Eucharis, clean and healthy plants; a few Established ORCHIDS, BEDDING PLANTS, &c.

On view the day prior and morning of Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

Shepherd's Bush.

DISSOLUTION of PARTNERSHIP. SALE of LEASEHOLD NURSERY, PLANTS, &c.
To Nurserymen, Florists, Gardeners, &c.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, The Willow Vale Nursery, Uxbridge Road, Shepherd's Bush, close to Uxbridge Road Station, on MONDAY, June 13, at 12 o'Clock precisely (unless an acceptable offer be made previously), the commanding long LEASEHOLD Property, known as The WILLOW VALE NURSERY, comprising a six-roomed Dwelling-house, double span Show-house, Fernery, Palm-house, Stabling, &c. Held for an unexpired term of fifty years at the low rental of £60.

Following the Sale of the Property, will be offered, in suitable Lots, the remaining stock of STOVE and GREENHOUSE PLANTS.

May be viewed. Catalogues can be obtained on the Premises; of Messrs. DOD, LONGSTAFFE, SON, AND FENWICK, 16, Berners Street, W.; and of the Auctioneers, 67 and 68, Cheapside, E.C., and Leytonstone.

Middlesex, near Waltham Abbey, close to the Enfield Lock (Ordnance Factory) Station on the Great Eastern Main Cambridge Line, and about 10 miles from London.

MR. W. W. JENKINSON will SELL by AUCTION, at the Mart, on THURSDAY, June 9, at 2 o'Clock, in One Lot, over 10 acres of FREEHOLD LAND, abutting on the Great Eastern Line, and possessing a good approach from Ordnance Road. The land, formerly old pasture, is now entirely planted with Manetti Briers, on which are budded all the most choice Roses, for the growth of which, or Fruit, the soil, a deep rich loam, is specially adapted.

Particulars and conditions of Sale of Messrs. FLADGATE AND FLADGATE, Solicitors, 40, Craven Street, W.C.; and of the Auctioneer, 6, Moorgate Street, E.C.

FOR DISPOSAL,
MR. LAING'S NURSERY, Twickenham.

Owing to the Death of Mr. LAING, this LONG-ESTABLISHED NURSERY, occupied by Mr. LAING for the last fifty years, with Lease, Goodwill, and Stock of GREENHOUSES, PITS, SHRUBS, PLANTS, and IMPLEMENTS, for EARLY SALE. Five minutes' walk from St. Margaret's, and close to Twickenham and Richmond Stations. For an energetic man wishing to commence business with a long-established connection, the opportunity is unexceptional.—Particulars now ready.

Apply to GEORGE PAUL, The Old Nurseries, Cheshunt.

To Market Gardeners.

FOR SALE, a very valuable PLOT of OLD MARKET GARDEN GROUND, nearly 2 Acres in extent, admirably situate near the Town and Station of Uckfield, in direct line with Brighton, Eastbourne, and Tunbridge Wells. The Land is well stocked with thriving Fruit Trees, &c. A capital site for the erection of Greenhouses or Pits.

For particulars apply to Mr. J. PLUMER CHAPMAN, Auctioneer and Valuer, Lewes.

FOR SALE, in consequence of Mr. Imrie's death, the old-established and well-known NURSERY BUSINESS so successfully carried on for upwards of sixty years at Ayr. The Grounds extend to about 40 Acres, adjoining the Railway Station, and are well stocked with saleable Trees and Shrubs. Further particulars on application to

IMRIE AND COMPANY, The Nurseries, Ayr, N.B.

To Cut Flower, Tomato, and Fruit Growers, NURSERYMEN, &c.

TO BE SOLD or LET on LEASE, at once, a First-rate BUSINESS as above, close to all the best markets in the Midlands. Good nine-roomed House, 6000 feet of Glass Houses, well heated, and about 3½ acres of Land, all fully stocked and in full profit.

B., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

To Gardeners.

TO BE LET, a HOUSE and GARDEN in a small but rising Seaside Town in West of England, where there is an opening for a thoroughly competent Gardener and Florist; care of a Gentleman's garden adjoining could be at once arranged for.

Apply, by letter, to G., Messrs. Street Brothers, 5, Serle Street, London, W.C.

To Florists.

TO BE LET, for the Culture and Exhibition of Flowers and Plants under Glass, an extensive area of LAND adjoining Kennington Park, in front of South Place and Newington Terrace.

Apply to Messrs. MEYNELL AND PEMBERTON, Solicitors, 20, Whitehall Place, S.W.; or, to Messrs. BRIANT AND SONS, Estate Agents, 200, Kennington Park Road, S.E.

A NURSERYMAN having two Nurseries in and near a large Provincial Town in the South of England, and being anxious to retire, would TAKE A PARTNER on advantageous terms, or DISPOSE of the WHOLE BUSINESS.

Apply to WEEKS AND WATTS, Business Agents, Wokingham.

Landscape Gardening.

H. F. MALLER (of the firm of B. Maller & Sons), late Pupil of the Crystal Palace School of Landscape Gardening, is prepared to FURNISH PLANS, or undertake any kind of the above work.—61, High Street, Lewisham.

To Farmers, Market Gardeners, and Others.

THE METROPOLITAN BOARD of WORKS have at their Main Drainage Pumping Station, situated upon the southern side of the Thames, at Crossness, near Abbey Wood, Kent, a very large quantity of SOLID MATTER, pressed from Sewage, which they are prepared to deliver, free of cost, to any parties sending either barges or carts for the same.

The Board will also, if desired, deliver the SEWAGE-CAKE, free of cost, to the Abbey Wood Station, on the North Kent Railway, but the Board will not pay or be responsible for the payment of any charges in respect of the carriage upon that or any other line of railway.

Parties desirous of obtaining a supply of the SEWAGE CAKE must apply to the Superintendent of the Pumping Station, at Crossness, who will arrange for either loading the Cake into barges or carts, or delivering it at the Abbey Wood Station, as may be required.

J. E. WAKEFIELD,
Clerk of the Board.

Spring Gardens, May 16, 1887.

ROSES IN POTS.

HYBRID PERPETUALS, all leading varieties, bushy plants for Bedding-out, 10s. 6d. per dozen, 75s. per 100.
CLIMBING ROSES, Maréchal Niel, Devoniensis, W. A. Richardson, and all most suitable varieties, strong plants with long shoots, 16s. per dozen.
NEW ROSES, Her Majesty, The Bride, Clara Cochet, American Beauty, W. F. Bennett, Ye Primrose Dame, and all best varieties of 1886-1887, 24s. to 30s. per dozen.
TEA-SCENTED ROSES, SINGLE ROSES, FAIRY ROSES, a complete collection.
LIST of Roses in Pots, Bedding Plants, &c., post-free.
GEO. COOLING AND SONS, The Nurseries, Bath.

RATING OF NURSERIES.

A PUBLIC MEETING of NURSERYMEN will be held, under the auspices of the Nursery and Seed Trade Association, Limited, on TUESDAY, 28th June, 1887, at the HORTICULTURAL CLUB, Henrietta Street, Covent Garden, W.C., (by kind permission of the Committee), to take into consideration the excessive Rating of Nurseries, and to agree on a combined course of action with a view to the Reduction of Assessments. The Chair will be taken by J. Wood Ingram, Esq., of the firm of Messrs. Wood & Ingram, The Nurseries, Huntingdon, at 4 P.M. Nurserymen will oblige by early intimating to the Secretary their intention to be present, and also by forwarding to him in strict confidence (if the amount of the assessment is in excess of the rent), either the Amounts of their Rents and Assessments, or the proportion which the difference between the Rent and the Assessment bears to the rent itself.

Mr. F. C. GOODCHILD, Secretary,
Nursery and Seed Trade Association.
25, Old Jewry, London, E.C.

The "Good Things" at

HARTLAND'S, Cork.

Packets of Seed, 6*d.* each.

AURICULA ALPINA.—Extra superb. Own special saving.
ANEMONE FULGENS.—Own saving of the scarlet Windflower.
" NARCISSIFLORA.—Small white flowers in clusters.
AQUILEGIA.—New Hybrids. Most varied forms.
CANTERBURY BELLS.—New Double rose. [flowers.
" " New. Cup and Saucer like. Own saving. Wonderful
CELSIA ARCTURUS.—A beautiful yellow Orchid-like bloom, of golden yellow.
DELPHINIUM CARDINALE.—Scarlet Larkspur.
IBERIS GIBRALTARICA HYBRIDA.—Beautiful rose bloom.
PAPAVER NUDICAULE.—Most varied forms of perennial Poppies.
" ORIENTALE SPLENDIDISSIMUM. — Dazzling golden-scarlet blooms, as large as breakfast cups.
PRIMULA.—Hardy Alpine sorts. Most varied.
COWSLIP.—Danesfort yellow. Hose-in-Hose. Wonderfully sweet-scented.
POLYANTHUS.—Giant Munstead. Yellow and white, mixed.
PRIMROSE.—Similar to what is seen at Munstead. Most beautiful.
PHLOX NELSONI.—Dwarf snow-white Alpine Phlox.

All the above 16 Packets for 7*s.*, free. Single Packets, 6*d.* each.

WM. BAYLOR HARTLAND, Seedsman, Cork.

Cheap Bedding Plants—Special Offer.

WILLIAM BADMAN offers as under, from Store-pots, all well-rooted, and fit for present potting. The present is a good time for making up losses sustained during the winter:—

VERBENAS, Purple, White, Scarlet, Crimson, Rose, 6*s.* per 100, 50*s.* per 1000; 12 choice named varieties, 8*s.* per 100.
LOBELIA Bluestone, pumila magnifica, true, from Cuttings, 2*s.* 6*d.* per 100, 20*s.* per 1000; Brighton Blue, fine, 3*s.* per 100, 21*s.* per 1000.
CALCEOLARIA Golden Gem, 5*s.* per 100, 40*s.* per 1000; Camden Hero, fine dark, 6*s.* per 100.
HELIOTROPE Jaun d'Amour, Miss Nightingale, dark, 6*s.* per 100, 50*s.* per 1000.
AGERATUM Imperial Dwarf, blue, 5*s.* per 100, 40*s.* per 1000.
COLEUS VERSCHAFFELTI, bedding crimson, 6*s.* per 100, 50*s.* per 1000.
IRESINE LINDENI, dark crimson, good bedder, 6*s.* per 100, 50*s.* per 1000.
PELARGONIUM Vesuvius, finest bedding scarlet, 8*s.* per 100, 75*s.* per 1000; Master Christine, 12*s.* per 100; Mrs. Levers and Jenny Dodds, fine pink, 10*s.* per 100; Henri Jacoby, best crimson, 12*s.* per 100; Madame Vaucher, white, 12*s.* per 100; Queen of Belgians, finest white, 3*s.* per dozen, 20*s.* per 100; Niphetos, bedding white, 12*s.* per 100; Waltham Seedling, Lucius, Jean Sisley, and White Vesuvius, 10*s.* per 100.
SILVER VARIEGATED May Queen (Turner's), Princess Alexandra, Flower of Spring, 12*s.* per 100; Little Trot, dwarf, 12*s.* per 100; Prince Silverwings, 10*s.* per 100.
GOLD-LEAF Crystal Palace Gem, 10*s.* per 100; Happy Thought, 12*s.* per 100.
BRONZE McMahon, Black Douglas, The Czar, the best bedders, 15*s.* per 100.;
TRICOLOR Mrs. Pollock, 15*s.* per 100; Sophie Dumaresque, Lady Cullum, Sir R. Napier, 18*s.* per 100.
DOUBLES, F. V. Raspail, fine scarlet; M. Thibaut, pink; M. Baltet, best white, 12*s.* per 100.
TROPÆOLUM Vesuvius, 8*s.* per 100; coccinea elegans, best dwarf scarlet, 10*s.* per 100.
FUCHSIAS in twelve good named sorts, 8*s.* per 100.
PELARGONIUMS, Show and Decorative, from single pots, good, 20*s.* per 100, 3*s.* per dozen.

NOTE.—Not fewer than twenty-five of any one sort supplied at above rate. Packing included. Terms Cash.

Cemetery Nurseries, Gravesend, S.E.

CLEARANCE SALE of healthy PALMS for Table and Conservatory Decoration.—LATANIA BORBONICA, SEAFORTHIA ELEGANS, and PHŒNIX RECLINATA, 12 inches high, 6*d.* each, 4*s.* per dozen, 25*s.* per 100; same kinds, 20 inches high, 1*s.* 6*d.* each, 6 for 8*s.*, 12 for 14*s.* Packages and parcels post-free.

COCOS WEDDELLIANA, ARECA LUTESCENS, and EUTERPE EDULIS, 2*s.* to 5*s.* each; KENTIAS, 4*s.* to 10*s.* each; large PALMS, 3 feet to 6 feet high, 5*s.* to 50*s.* each. All of splendid value.

GARDENER, Holly Lodge, Stamford Hill, London, N.

CABBAGE PLANTS.—Very fine autumn sown Enfield Market, Wheeler's Imperial and Robinson's Champion, 3*s.* 6*d.* per 1000, 30*s.* per 10,000, on rail; sample 100, 1*s.* 6*d.* free. Aigburth BRUSSELS SPROUTS, Green KALE, Golden Globe and Norwegian SAVOY, Tripoli ONIONS, Cottage LETTUCE, and Purple BROCCOLI, 5*s.* per 1000, 45*s.* per 10,000, on rail; sample 100, 1*s.* 6*d.* free. Spring sown from cold frames. Early London CAULIFLOWER, 7*s.* 6*d.* per 100, on rail; 1*s.* per 100 free. Red and White CELERY, 9*d.* per 100, free; TOMATOS, 6*d.* per dozen, 3*s.* 6*d.* per 100, free; Telegraph CUCUMBER, 3 for 1*s.*, free; VEGETABLE MARROW, 4 for 1*s.*, free. Cash with order.

EDWARD LEIGH, Cranleigh, Surrey.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

Donations and Collections already promised or sent towards the

JUBILEE FUND OF 1887:

The DUKE of WESTMINSTER, K.G.	£50	0	0
Baron FERDINAND DE ROTHSCHILD, M.P. ...	52	10	0
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R. STRAND, Denne Hill Gardens, Canterbury ...	0	5	0
JAS. PRUST, Daglensworth Gardens, Cirencester ...	1	1	0
B. SMITH, Bothys Park, Chertsey	0	10	0
C. COOPER, Seed Merchant, Plymouth	1	1	0
JOHN CHOWN, The Gardens, The Hollies, Weybridge	0	10	0
J. SHEPSTONE, High Elms Gardens, Watford ...	0	10	6
JOHN MURRELL, Leigh Park Gardens, Bristol ...	0	4	0
E. CORDING, Stanlake Gardens, Twyford	0	2	6
JESSE WILLARD, Holly Lodge Gardens, Highgate	0	10	6
WM. BROWN, Merivale Gardens, Atherston ...	1	1	0
JOHN HEAL, Messrs. Veitch & Sons, Chelsea ...	0	5	0
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W. B. HARTLAND, Esq., Cork...	2	2	0
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JOHN DOMINY, Chelsea	1	1	0
F. REED, Gardener, East Moulsey	0	2	6
JNO. BELL, Strathfieldsaye Gardens...	0	10	6
WM. LEE, Powis Castle Gardens	0	5	0
W. RHYMES, Gardener, East Moulsey	0	2	6
HENRY DOWNING, Norbury Park Gardens ...	1	10	0
E. QUECKENDEN, Seedsman, Harefield	0	5	0
G. H. RICHARDS, Somerley Gardens, Ringwood ...	0	10	0
WM. SCHOLEY, Burnham Hall Gardens	0	10	0
BOB. LAING, St. Margaret's Gardens, East Grinsted...	1	1	0
R. SAWFORD, Danesbury Gardens	0	5	0
E. GANDY, Stratton Gardens, Mitcheldever ...	0	5	0
S. CHINERY, Edwardston Gardens, Bexford ...	0	16	6
GEORGE FORD, Wrest Park Gardens, Beds ...	1	0	0
JOHN WILSON, The Gardens, Newton-le-Willows...	1	5	0
JAS. CHILD, Houndswood Gardens, St. Albans ...	1	10	0
GEORGE TAYLOR, Messrs. Veitch & Sons, Chelsea	0	5	0
EDW. HUGHES, Edenhurst Gardens, Sevenoaks ...	0	15	0
J. HILL, Mouse Hill Gardens, Godalming	0	5	0
R. GREENFIELD, The Priory Gardens, Warwick .	2	15	0
R. MARIES, Nursery, Lytham	1	1	0
M. DUNN, The Gardens. Dalkeith	3	3	0
A. HALL, Park End Gardens, Wark	0	5	0
JAS. BATLEY, Wentworth Gardens, Barnsley ...	0	5	0
ISAAC GIBBONS, Stratton Park Gardens, Cirencester	0	2	6
R. KING, Taplow House Gardens, Taplow	0	5	0
JAMES BAYLESS, Belvedere Gardens, Mullingar .	0	2	6
A. LUFF, Northreppa Gardens, Norwich	0	10	0
HENRY NEWMAN, Summerleaze Gardens, Shepton Mallett	0	5	0

SPECIAL OFFER OF ORCHIDS.

See previous issue of May 21, 1887.

The undermentioned are all good established Plants, clean and healthy, and will be certain to give satisfaction. Better value cannot be obtained anywhere in the Trade.

C, Cool; I, Intermediate; S, Stove. Each.

S	Dendrobium bigibbum	... 4 to 5 bulbs,	3*s.* 6*d.*, 5*s.*, 7*s.* 6*d.*
S	Calceolaria ...	... 6 to 10 ,,	5*s.*, 7*s.* 6*d.*
I	Cambridgeanum	... 4 to 5 ,,	2*s.* 6*d.*, 3*s.* 6*d.*, 5*s.*
I	chrysanthum ...	... 4 to 6 ,,	3*s.* 6*d.*, 5*s.*
I	chrysotoxum ...	... 6 to 8 ,,	3*s.* 6*d.*, 5*s.*
S	crassinode ...	... 4 to 5 ,,	3*s.* 6*d.*, 5*s.*
I	crepidatum ...	... 4 to 6 ,,	3*s.* 6*d.*, 5*s.*
I	cretaceum ...	... 4 to 6 ,,	3*s.* 6*d.*, 5*s.*
S	Dalhousianum ...	... 8 to 10 ,,	5*s.*, 7*s.* 6*d.*, 10*s.* 6*d.*
S	Dearei	... 5 to 6 ,,	3*s.* 6*d.*, 5*s.*
I	Devonianum ...	... 5 to 6 ,,	3*s.* 6*d.*, 5*s.*
S	Draconis ...	... 4 to 6 ,,	2*s.* 6*d.*, 3*s.* 6*d.*
S	Falconeri ...	...10 to 14 ,,	5*s.*, 7*s.* 6*d.*
I	fimbriatum ...	... 8 to 10 ,,	5*s.*, 7*s.* 6*d.*
I	,, occulata ...	... 5 to 6 ,,	3*s.* 6*d.*, 5*s.*, 7*s.* 6*d.*
S	formosum giganteum...	5 to 8 ,,	2/6, 3/6, 5/–, 7/6.
I	Fytchianum ...	... 5 to 7 ,,	2*s.* 6*d.*, 3*s.* 6*d.*
S	hedyosmum ...	... 5 to 6 ,,	2*s.* 6*d.*, 3*s.* 6*d.*
I	heterocarpum ...	... 5 to 6 ,,	3*s.* 6*d.*, 5*s.*
I	infundibulum ...	... 5 to 6 ,,	3*s.* 6*d.*, 5*s.*
I	Jamesianum ...	... 5 to 6 ,,	3*s.* 6*d.*, 5*s.*
I	luteolum ...	... 5 to 6 ,,	2*s.* 6*d.*, 3*s.* 6*d.*
I	moschatum ...	... 5 to 7 ,,	5*s.*, 7*s.* 6*d.*
I	nobile, unflowered plant from importation, 5 to 7 bulbs, 5*s.*, 7*s.* 6*d.*		
I	nodatum... ...	...12 to 15 bulbs,	3*s.* 6*d.*, 5*s.*
I	Parishi	... 5 to 6 ,,	5*s.*
I	Pierardi	... 5 to 6 ,,	2*s.* 6*d.*, 3*s.* 6*d.*
I	latifolium ...	... 6 to 7 ,,	5*s.*, 7*s.* 6*d.*
I	primulinum giganteum	4 to 6 ,,	5*s.*
I	pulchellum ...	...10 to 13 ,,	3*s.* 6*d.*, 5*s.*
I	thyrsiflorum ...	... 6 to 7 ,,	3*s.* 6*d.*, 5*s.*, 7*s.* 6*d.*
I	Wardianum, strong	... 4 to 6 ,,	2*s.*6*d.*, 3*s.*6*d.*, 7*s.*6*d.*
I	Epidendrum macrochilum	... 6 to 7 ,,	3*s.* 6*d.*, 5*s.*
I	nemorale... ...	... 6 to 7 ,,	5*s.*, 7*s.* 6*d.*
I	Stamfordianum	... 4 to 6 ,,	5*s.*, 7*s.* 6*d.*
C	vitellinum majus	... 6 to 8 ,,	3*s.* 6*d.*, 5*s.*
I	Galeandra Baueri ...	... 2 to 3 ,,	5*s.*, 7*s.* 6*d.*

To be continued in next issue of this Journal.

Apply for Special LIST to

WM. GORDON,

PLANT IMPORTER, THE NURSERIES.

TWICKENHAM, MIDDLESEX.

Experienced Gardeners recommended.

The best ORCHID PEAT to be had, per sack, 5*s.* 6*d.*; in trucks in lots of 2 Tons and upwards, price on application.

FLETCHER, SON AND CO., FLORISTS, &c., Chesterfield, offer the following Plants:—

PANSIES—PANSIES.—Good strong well-rooted Plants, in all the leading Fancy and Show varieties, all true to name, just coming into flower: 100, in 50 varieties, 15*s.* per 100; £6 10*s.* per 1000. In 25 varieties, 12*s.*; £5 per 1000.
VIOLAS.—Good and well-rooted, in 12 or more varieties, 8*s.* per 100; £3 10*s.* per 1000.
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SNAPDRAGONS.—Named, strong plants, named varieties, 2*s.* 6*d.* per dozen; 16*s.* per 100.
CERASTIUM TOMENTOSUM, 6*s.* per 100; 50*s.* per 1000.
VERBENAS.—Clean, healthy, well-rooted, in leading varieties, 6*s.* per 100; 50*s.* per 1000.
HELIOTROPES.—Light and dark, 6*s.* per 100; 50*s.* per 1000.
IRESINE HERBSTII and LINDENI, 6*s.* per 100; 50*s.* p. 1000.
AGERATUM, Cannell's Dwarf, 6*s.* per 100; 50*s.* per 1000.
MESEMBRYANTHEMUMS, cordifolium varieties, 6*s.* per 100; 50*s.* per 1000.
ALTERNANTHERAS—amœna latifolia, amœna spectabilis, paronychioides aurea, paronychioides major, amabilis, spathulata, magnifica, versicolor grandis, &c. Good, strong, well-rooted stuff, 6*s.* per 100; 50*s.* per 1000.
GERANIUMS.—Bronze McMahon, Black Douglas, and Beauty of Calderdale, 12*s.* per 100; £5 per 1000.
" Mrs. Pollock, 16*s.* per 100; £7 10*s.* per 1000.
" Silver Tricolor, Italia Unita, and Gleneyre Beauty, 15*s.* per 100; £7 per 1000.
" Madame Vaucher and other whites, 10*s.* per 100. [100.
CALCEOLARIA Golden Gem, all transplanted, good balls, 8*s.* per

Please note the above Plants are nearly all from single pots, and cannot fail to give satisfaction, being clean, healthy, and well rooted. Package free. Terms strictly nett cash with all orders.

TEA ROSES.

Good plants, in 5-inch pots.

HER MAJESTY and W. F. BENNETT, 30*s.* per dozen.
SUNSET, GRACE DARLING, NIPHETOS, ISABELLA SPRUNT, DEVONIENSIS, Climbing DEVONIENSIS, MARECHAL NIEL, SAFRANOT, MADAME FALCOT, W. A. RICHARDSON, ETOILE DE LYON, &c. } 18*s.* per dozen.

A personal inspection invited.

JOHN STANDISH AND CO., Royal Nurseries, Ascot.

CHEAP BEDDING PLANTS.

GERANIUMS, Zonal, strong autumn-struck plants, from single pots—Vesuvius (scarlet), Jean Sisley, Dazzler (crimson), Master Christine, Madame Vaucher, Happy Thought, 2*s.* per dozen, 12*s.* per 100; Miss Tottie Hardy (rosy-salmon), Queen of Pinks (magenta), Stour Valley Beauty (peach), 3*s.* per dozen.

PELARGONIUMS, show and decorative, named, fine plants, from single pots, 3*s.* per dozen.

LOBELIA (true), from cuttings, Emperor William, 2*s.* 6*d.* per 100, 20*s* per 1000.

DAHLIAS, Single, named sorts, of all shades of brilliant colours, including White Queen and Paragon, 2*s.* 6*d.* per dozen, 18*s.* per 100, from single pots; Double, best named show varieties, 2*s.* 6*d.* per dozen, 18*s.* per 100, from single pots.

CHRYSANTHEMUMS, selection of finest named Show varieties, strong, and well-grown, 2*s.* 6*d.* per dozen, 18*s.* per 100, from single pots. Package free. Plants allowed for carriage.

Terms cash. CATALOGUE gratis.

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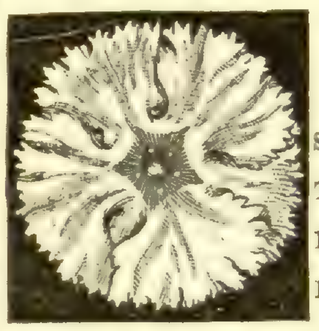

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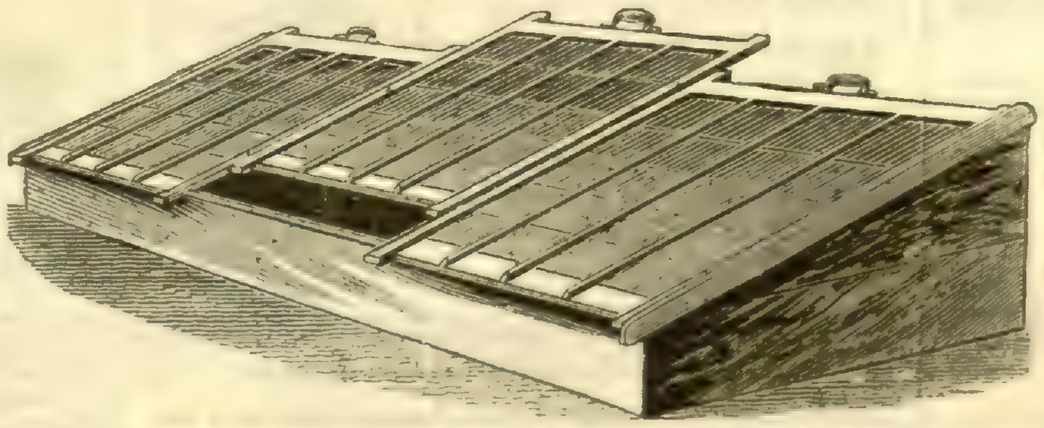

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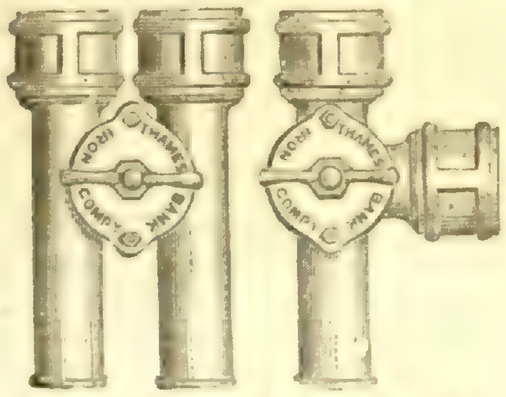

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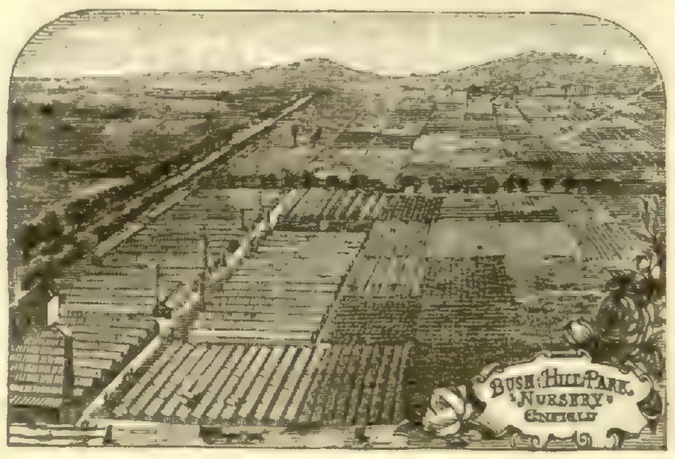

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1887—DAHLIAS—1887

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To this section I pay a very considerable amount of attention, and I am, in the present season's Catalogue offering some two dozen really first-class and showy varieties, perfectly distinct from the Shows and Fancies, and all, more or less, following the style of the well-known old Cactus variety, Juarezi. The new varieties of the present season are especially deserving of notice.

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My collection of these is one of the most complete in the trade, consisting of about three dozen varieties of really first-class, distinct sorts, all invaluable for bedding and for cutting.

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My collection of these includes all the well-known old varieties, as well as the best of the new ones.

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The collection is this year considerably improved by the addition of a dozen exceptionally choice new sorts, which are offered in this year's Catalogue for the first time. In addition to these my Catalogue comprises all the choicest of the varieties of previous years' introductions.

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GRAND JUBILEE EXHIBITION OF ORCHIDS,

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VICTORIA & PARADISE
UPPER HOLLOWAY, LONDON.N.
NURSERIES.

As a Supplement
TO THE
GARDENERS' CHRONICLE
FOR
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THE
Gardeners' Chronicle.

SATURDAY, MAY 28, 1887.

THE MONTH OF MAY.

"For thee, sweet month, the groves green liveries wear,
If not the first, the fairest of the year;
For thee the Graces lead the dewy hours,
And Nature's ready pencil paints the flowers."
CHAUCER.

MAY 1.—Great as is the pleasure of a garden, no matter in what position, yet this pleasure is much enhanced should it be so near the house that one can step from the opening window-door among the flowers which seem to flow round and embrace the dwelling. From such a window with northern aspect it is delightful from time to time to watch the sun go round the blossoms. No doubt the morning sparkle has its delicious freshness, but just now, before the trees show more than a shower of emerald buds, it is the western sun that brings the greatest beauty. Never is the gold of the Daffodils so burnished as when the sun falls aslant their nodding blooms; never is the Narcissus fairer than in the evening light; never do the Tulips gleam so brightly as when the sun's rays cross their scarlet petals, shining as through an old cathedral window pane. After sunset, as twilight closes, the Tulips melt into the night, but the Daffodils show out clearly, clustered like constellations among the terrestrial stars.

Sunshine we have now in abundance, but rain is surely needed in garden and pasture land. Not a Buttercup to be found in the meadows, where no landrail could hide, but the Daisy, seeking good in every ill, not only empearls the grass, but is so thickly strewn that at a distance the fields look frosted, or as if snow were just melting through the verdure.

Beautiful at present is the blossoming of the trees, not yet "in verdure clad." The pale grey branches of the Ash, with full black buds at their very ends, and as it were a filagreework of blossom, half brown and dusky green beneath the darkened buds, are lovely, looked at with the clear blue sky beyond. The Elms, too, with not a leaf expanded, have their lightest branches closely pressed with reddish blossoms, and the silvery Birch dangles its brown and yellow tassels

in the breeze, while the crimson buds of the Sycamore look like flowers against the sky.

Berberis stenophylla, though it has not the red-gold gleam of Darwini, shows a more graceful habit of growth. Fastened against a trellis in the garden the long trailing sprays down which the golden blossoms seem to flow, fall on either side, in no way hindered by the straight support. It is easily propagated in early spring by rooted suckers, which it sends up freely, running quickly underground in search of fresh nourishment. After the blossoming has passed the dark glossy leaves form a fine background for white flowers. The long spreading branches of the Rève d'Or Rose, with their dark red leaves, are very effective, as one catches glints of the rich colour through the garden, and the Doronicums now in blossom never look so well as when growing in front of one of these Rose bushes. It seems extremely hardy, retaining its leaves through all the winter storms until replaced by the fresh spring growth.

May 14.—Now is spring's fairest sight—the Apple blossoms overhead and the Bluebells at our feet! How much we owe these old gnarled Apple trees, untouched by any pruning-knife. Early in April the silver buds creep down the long dark stems; then come the deep pink tips of blossom, and one fair day in May the full soft flush, the rosy cloud of bloom that breaks against the summer sky; and in autumn what more beautiful latticework can there be for the purple Clematis than these very branches, laden then with gold and crimson fruit!

While the sun is so scorching overhead, how enchantingly cool are the Bluebells in the wood! With just a flicker of leaves expanding overhead the Bluebells seem to float above the sweet fresh grass beneath that hides their stems. These are not true "Bluebells," but a variety of stronger growth (Scilla hispanica) with tall stems bearing from twenty to thirty flowers of a charming purple-blue. The pure white variety is lovely, dropped here and there like strings of pearls. Narcissus poeticus also looks beautiful, rising from among them as stars set in a Bluebell sky. Pushing out into the sunshine by the drive are tall blue Irises, mingling with the low growing Sycamore branches. A few of these deep bronze-hued branches, with Iris stems cut some 3 feet long, are beautiful indoors in a large jar of simple pottery ware; but still more lovely are tall sprays of Apple blossom in a similar jar. How easy it is to decorate a room with simple flowers, if only they are cut so as to display their natural mode of growth, and not nipped off short and put tightly together in a vase.

In the garden the old red Tulips with dark blue blotches at their base when open in the sunshine are very dazzlling, and the soft green foliage of Papaver umbrosum spreading around them enhances their brilliance. This Poppy, sown in autumn and planted out early in spring, commences to flower in May, when red blossoms are not very plentiful. Not far from the Poppies are some groups of large white Pansies, which, with the movement of the wind, look just like butterflies alighted on some plant. Now is the best time for taking Pansy cuttings, choosing the hard, wiry growths that come from the centre of the plant. Struck now, and planted out in autumn, they will be finer next spring than the parent plants. The old Golden-ball Wallflower I grow in like manner, making cuttings early each May, and throwing away the old plants as soon as their bloom is over. The young ones I find stand the winter much better, and are nice healthy little bushes, that produce large heads of bloom, instead of the ugly, straggling appearance old plants frequently have.

Many beautiful plants are coming into bloom on the rockwork, but the fairest of all is Mitella prostrata in its white lacework. *L. A. L.*

New or Noteworthy Plants.

URGINEA MACROCENTRA, *Baker, n. sp.**

This is a near ally of the officinal Squill (Urginea maritima). In habit it resembles Ornithogalum pyrenaicum, but is much taller. The curious points about it are the single, perfectly cylindrical Onion-like leaf, and the very large spur of the lower bracts, from which the name is taken. I have had it described in manuscript for some time for the yet unpublished bulb volume of the *Flora Capensis*, from specimens sent from the Transkei, by Mrs. Barber, and now we have flowered it at Kew from bulbs presented in 1884 by Messrs. Sander & Co., of St. Albans.

Bulb globose, 2—3 inches in diameter, Leaf solitary, contemporary with the flower in May, perfectly cylindrical, stiffly erect, 1½ foot long. Peduncle stout, terete, erect, 2½—3 feet long. Raceme dense, 5—6 inches long, 1 inch in diameter; pedicels ascending, ¼—½ inch long; upper bracts small, cucullate, with a minute basal spur; lowest with a convolute scariose spur ¾—1 inch long. Perianth campanulate, 1-6th inch long; segments oblong, white, tipped with green. Stamens shorter than the segments; filaments uniform, white, cylidrical; anthers oblong, brown. Ovary sessile, globose; style short, erect, white. *J. G. Baker.*

Maxillaria tenuifolia.

This is an attractive member of the genus, although its flowers are not borne in masses like some of the species. It belongs to the group known as Caulescentes, and having stems of climbing habit; and this species has gracefully arching grass-like leaves, forming an elegant plant if placed on a piece of Tree Fern stem firmly secured in a pan. A well established plant when in flower has quite an attractive appearance. The flowers are densely spotted with crimson-red on a deep yellow ground. It is closely allied to the very rare M. triangularis, for which another species sometimes does duty in gardens. The flowers of the two are very similar in general appearance, but the latter has very much broader leaves than M. tenuifolia. It is found growing on trees in Mexico, whence it was originally sent by Hartweg to the Horticultural Society. *R. A. R.*

Dendrobium polyphlebium, *n. hyb. (nat.?)*

This curious thing has flowered at Mr. Wrigley's at Howick House, Preston, under the excellent management of Mr. W. Swan. I am informed the growth is much like that of Dendrobium Pierardi latifolium—bulbs 1 foot to 18 inches long. "We had the plant only a short time ago from the Liverpool Horticultural Company, who stated it was probably a natural hybrid. The flowers stand in pairs or singly."

I obtained three good flowers, two of which belonged to the same raceme. Stalked ovaries much thicker than in Dendrobium Pierardi, greenish, reddish at top. Sepals and petals broader than in Dendrobium Pierardi, with a much stronger blunt chin, of a rosy colour. Lip rounded, shorter than sepals, a little fringed at border, full of stiff hairs at anterior border. Three strong keels from abrupt base before claw, running to disc. Very numerous divaricate purple veins, radiating both sides from callous keels, nearly contiguous, a light brownish-purple area before. Column with three teeth at apex, much stronger than in Pierardi, white with purple longitudinal stripes in front, and with a great neat purple anther, whose base is white. In shape the flower is much broader than in Dendrobium Pierardi, and the great relative shortness of the cucullate lip is most remarkable.

I am inclined to believe it is a good guess to name this a mule, and if so it might be of Burmese origin, and I would ask whether it is a descendant of Dendrobium rhodopterygium and Pierardi? What speaks much for the first is a slight Rhubarb smell. One leading reason to think it a mule is, that there is no predominant fresh character, and that the flowers are by no means brilliant. I learn from many of my English correspondents, what I found out generally myself, that if the mules are preferable for the strength of their growth, there is scarcely any case where the brilliancy of colours reaches that brilliancy the given parent boasted of. And I have still to add one remark. General E. Berkeley, whose keenness of observation is so well known, had as early as 1876 a plant very near this.

My documents are a letter, a sketch in colours, and three flowers, which were not very fresh when pressed, hence not very good for investigation. Further, Colonel Berkeley states there came only one plant to his hands, from Western China. "The form of the flower is like that of Dendrobium Parishii. It is very free flowering, throwing out its bundles of three flowers all down the stem. It is slightly sweet-scented, and robust in habit, like the plant you named D. rhodopterygium." This is not our plant; that has D. Pierardi growth, flowers single or in pairs, and a very short lip. I begin, however, to believe it may prove to be also a similar mule, as may Dendrobium polyphlebium. *H. G. Rchb. f.*

* *Urginea macrocentra*, Baker, n, sp.—Bulbo globoso, foliis solitariis synanthiis cylindricis sesquipedalibus ad apicem attenuatis, pedunculo valido stricto ad tripedali, floribus permultis in racemum densum dispositis, pedicellis brevibus ascendentibus, bracteis superioribus parvis cucullatis minute calcaratis, infimis calcare magno scarioso convoluto præditis, perianthio parvo campanulato segmentis oblongis albis dorso viridulis, staminibus perianthio brevioribus, ovario globoso stylo brevi erecto.

Roses.

SOME NEW ROSES.

I do not mean to enter upon any prophetic declarations as to the Roses that are coming out—they have been heralded as usual by loud trumpet notes, and every adjective that can express excellence in the French language has been applied to them, and indeed in some instances they have surpassed themselves, as one is described as having the appearance of a burning bush, and another as very "coquettish." I would rather refer to some that have not been generally seen, but of which expectations have been formed, and towards which many critical eyes will be turned during the Rose-showing season. They have been more or less seen during the past season, and while many hopeful expectations have been formed about them, a further test is required before they are admitted to the position of established show varieties. In taking the hybrid perpetuals first, I find among them some of which many Rose growers have already spoken well.

Edouard Hervé (F. Verdier fils).—This has been well spoken of by that good and somewhat particular rosarian, Mr. B. F. Cant, of Colchester: it is described as currant-red, shaded with crimson, very vigorous, and sweet-scented. Doctor Dor (Liabaud), shaded red, very large, full, perfume and form of the Tea Rose, very vigorous, and free-flowering; this is suggestive rather of what are called hybrid Teas. General Appert (Schwartz), velvety-purple, red-shaded, large and full, very vigorous, blooming well in the autumn; a seedling from Souvenir de Wm. Wood; but as this is a Rose of which we know very little, we do not gain much by this knowledge. Clara Cochet, one of Lacharme's seedlings, comes from a raiser who has not only sent us some of the best Roses we have, but has sent us very few bad ones. There are some French raisers who do indeed send us good Roses, but generally freight them with a number of others which are simply ballast, and like ballast have to be thrown overboard when a full cargo is taken on. This is one of those light-coloured Roses of which Lacharme has already sent us good examples in Captain Christy and Catharine Soupert. This seems from the description to be in advance of those already mentioned; it is very vigorous, and probably will require careful management as to pruning.

Turning now to British raised Roses of this class (I use the term advisedly, because some of them came from Ireland), we are standing on somewhat safer ground. We have had the opportunity of seeing these, and can judge from our own observation, and form our conclusions, even although we may have to modify them. Messrs. Alexander Dickson & Sons, of Newtownards, in the county of Down, have been for some years engaged in hybridising Roses, and are now letting out the first-fruits of their labours. I know them to be thoroughly honest and upright men, and have every confidence that they would not palm off on the public anything that they thought to be inferior; of course there is always the danger of over-estimating the charms of our own "belongings," but then when a Rose (Earl of Dufferin) has received seven First-class Certificates, and has been picked out as the premier Rose from amongst 1250 blooms, it is clear that there must be something in it. Messrs. Dickson have sent out a portrait of it, which, independently of the merits of the flower, is one of the best Rose plates I have seen. It is a splendidly coloured dark Rose, suggesting perhaps A. K. Williams in its blood, is said to be very vigorous, free, and a good autumnal bloomer. Another Rose of the same style, but a seedling from A. K. Williams, is Grand Mogul, sent out by Messrs. W. Paul & Son, is undoubtedly a flower of great merit. Its brilliancy of colour and exquisite shape are points which are sure to gain it favour with Rose growers. Her Majesty (Bennett) is a Rose which is doubtless in the possession of most Rose growers by this time, and will probably be largely exhibited this year, *i.e.*, if growers have been careful not to prune it too hard. We shall probably hear much of it during this season, and shall be able to determine more about it when the season ends. Mrs. John Laing, by the same raiser, is a bright flower of the character of Mons. Noman. It was regarded with great favour when it took the Gold Medal of the National Rose Society. Puritan, another Rose of the same raiser, is remarkable for the length of time it remains in bloom; it is somewhat suggestive of the Merveille de Lyon style of flower. Another Rose reaches us from America under the utterly misleading title of hybrid Tea, called American Beauty, but a writer in one of the gardening papers states that it is an old flower with a new name, viz., Madame Ferdinand Jamain, sent out by Ledechaux in 1874; if this be so, nothing can more forcibly show the absurdity of making this confusing class of hybrid Teas, as that Rose has been for ten years or more included amongst hybrid perpetuals, as in truth all these hybrid Teas must be.

Although a number of Tea Roses have been announced during the last two years the real additions are few. Again has the veteran grower Guillot, to whom we owe so many fine Roses of this class, sent us one which promises to be a useful addition to those we already possess—Comtesse de Ingreuse; its colour is a pure yellow, and as the flowers are large, with broad petals, it is likely to be a useful Rose, even taking into account the many good yellow Roses we already possess. Messrs, Dickson & Son, of Newtownards, have announced a new Tea, Miss Ethel Brownlow, which they describe as of a very robust habit; colour, salmon-pink shaded yellow at base of petals. Messrs. Dickson sent me the other day blooms from plants which had been grafted in February; they were small of course, but, as well as could be gathered from their condition after their long journey, it is a good flower, of great substance, and bright in colour. A Tea has reached us from America which has been received with much favour; it is a sport from Catherine Mermet, the pink of that Rose being replaced with white, and a slight *soupçon* of primrose at the base, about as much as we see in Gloire Lyonnaise; a box of it was exhibited this spring at one of the Royal Horticultural Society's shows by Mr. D. Gilmour, jun., and was greatly admired; but the general opinion, I think, was that as a white Tea Rose Niphetos still holds the palm. There may be other Roses which may come to the front, but I think these will be amongst the most noteworthy. *Wild Rose.*

Rose Niphetos.

This good old variety furnishes us with a supply of flowers for cutting purposes throughout the winter and spring months, until the early part of the summer. We have some specimens planted out and trained on the under wall of a Camellia-house, a position that suits them admirably. A plant of Maréchal Niel Rose is also growing in the same house which has furnished a good quantity of bloom lately, but it does not produce a succession of blooms, as does Niphetos. This variety cannot be too highly recommended for planting out under glass where a long succession of Rose bloom is desired. *E. Ward.*

Roses Out-of-doors.

Plants must now receive close attention to destroy any insects on their first appearance. The plants in the beds will be greatly benefited by a good washing with clear water occasionally. In order to secure a constant succession of bloom from Roses planted against walls, they must be kept perfectly clear of red-spider, aphides, and caterpillar. If those pests are allowed a lodgment the trees will present a sorry aspect before the half of the season is run, and the blooms will be poor indeed. It is of the utmost importance to preserve the first foliage clean and healthy, because on this depends the prospect of successional blooms. In order to keep the plants in vigorous health supplies of liquid manure and clear water should be given to the roots. Frequent syringing with clear rain-water, applied with the syringe or garden engine, will keep the foliage clean and healthy. Should greenfly obtain a footing, they should be syringed with tobacco-water at once. If the plants be kept perfectly clean and sufficient nourishment be given at the roots, a rich harvest of good Roses until quite late in autumn may be counted on. *W. M. Baillie, Luton Hoo.*

THE NEW AURICULAS OF THE LAST DECADE.

The establishment of the National Auricula Society (Southern Section) has not only stimulated the growth of the Auricula in gardens where it was previously cultivated, but has also been the means of introducing it into many gardens where its beauties were previously unknown. The first exhibition was held in the Crystal Palace on April 24, 1877, and no new seedling show Auriculas were exhibited. The Rev. F. D. Horner, who won the principal prizes, exhibited Booth's Freedom, Page's Champion, and some others of the scarce, difficult to obtain, and more difficult to manage old-fashioned sorts.

The next exhibition was also held at the Crystal Palace, on April 25, 1878, and two First-class Certificates were granted to seedling show Auriculas, viz., Silvia (Douglas), grey or white edge, and to Omega (Turner), white-edge.

In 1879 the Society removed to South Kensington; all the subsequent exhibitions have been held there under the auspices of the Royal Horticultural Society. On that occasion two more show Auriculas received First-class Certificates, viz., Ringdove (Horner), self; and Grey Friar (Llewelyn), grey-edge. As exhibited on that date, April 22, Ringdove was a very lovely variety, but it subsequently developed a very serious fault—the petals reflex, causing the fully developed truss to have a very odd appearance.

At the fourth exhibition, held on April 20, 1880, there was a great display of seedlings; no fewer than ten First-class Certificates were awarded to show Auriculas. In fact, this was altogether superior to any of the previous shows as an exhibition. The quality of the old varieties was above the average. The Rev. F. D. Horner had four First-class Certificates: Cyclops and Orion, green-edges; Thetis, grey-edge; and Heroine, self. It is, therefore, seven years since Heroine was first exhibited, and it has now proved itself to be the best self Auricula yet raised. Rob Roy (Smith), exhibited by Mr. Dean, and Rev. F. Tymons (Dean), both green-edged varieties, were also certificated. Conservative (Douglas), white-edge, was also shown for the first time and certificated. Mr. Simonite obtained two First-class Certificates for his violet-coloured self, Mrs. Douglas, which was shown in nearly all the winning stands last exhibition; and for Mrs. Dodwell, a violet ground white-edge, now grown under the name of Heather Bell. It was also well shown at the last exhibition. Lord Salisbury (Mellor), self, was also certificated.

In 1881, the day that Lord Beaconsfield died, the exhibition was not so good as the previous one. Four Certificates were awarded, viz., to Mr. Horner, for Snowdrift, white-edge, and Erebus, self; to Mr. Barlow, for King of Greens; and to Mr. Douglas, for Mabel, grey-edge. In 1882 nine certificates were awarded; Mr. Horner had three, viz., for Agamemnon, green-edge; Luna, grey-edge; Corona, self; Mr. Douglas had also three, for Jumbo, grey-edge; Mrs. Moore, grey-edge; and Duke of Albany, self-edge. Mr. Woodhead, a new exhibitor, came to the front this year, showing well in the classes, and taking First-class Certificates for Mrs. Dodwell, white-edge; and George Rudd, grey-edge; Brunette (Pohlmann), self-edged, was certificated.

In 1883 new varieties were scarce again. Greenfinch (Barlow), green-edge; and Ajax (Horner), grey-edge, were the only two that received certificates.

In 1884, the eighth exhibition, the Rev. F. D. Horner was the only exhibitor of seedlings who obtained awards. He received three certificates for the following:—Merlin, grey-edge; Magpie, white-edge; and Mrs. Horner, self-edged. All the three of them are superb; Magpie is, I believe, the best white-edged Auricula yet raised; and Mrs. Horner is a self of the most refined character.

At the ninth exhibition a clause had been introduced into the schedule by which seedlings that had hitherto competed for prizes and certificates were not allowed to do so; this clause remained on the rules for two years, but has now been rescinded in favour of certificates. Seedlings competing for prizes must be staged separately. Owing to this some of the best seedlings were not noticed at all—Greyhound (Horner), for instance, which created quite a sensation, was left out, although it received the premium prize as being the best Auricula in the exhibition.

The tenth exhibition was held in 1886, in conjunction with the Primula Conference, but the same prohibitive rule prevented good seedlings from obtaining certificates. The only Auricula certificated in those two years was William Brockbank (Mellor), exhibited by Mr. Brockbank, of Didsbury. At the last exhibition, on April 26 of the present year, the objectionable rule was rescinded, the judges having the power to select the seedlings from any class, and confer upon them the honorary reward of a First-class Certificate. No less than five were awarded to the Rev. F. D. Horner's seedlings.

Grayling, grey-edge.—This Mr. Horner considers the best grey-edge he has yet raised after Greyhound; in fact, it is a better type of flower, opening more kindly than either Greyhound or George Lightbody.

Magpie was certificated by mistake the second time, it having received the highest award in 1884. Here is the correct description of it:—Pips large, equal, circular, and flat, of very great substance; tube rich deep yellow, circular and proportionate; anthers bold and heavy, paste extremely dense and pure, very broad and circular; body colour intense velvety-black, deep, and proportionate; edge pure dense white, equal width with the ground colour. The flowers are of a lasting character, and die off a good colour.

Amanda.—This is the best of the violet ground white-edged varieties; it has what all the others sadly lack—a good gold tube. The flowers also last well; those exhibited had been open for three weeks. I confidently predict that these three will be popular many years hence.

Dulcie, self, is in some points before Heroine; the

paste is not so good, but the form of petal superb; it is rich dark maroon.

Rubra seems to be the best of its class so far. The petals are broad, and what the fanciers term Rose-leaved.

Others certificated were Edward Pohlmann (Turner), a fairly good green-edge; James Douglas (Bolton), a good green-edge, with a better tube than Prince of Greens; Samuel Barlow (Bolton), a large handsome grey-edged variety, of good properties, the colours bright and well balanced.

Abbé Lizst (Douglas) promises to be a good green-edge. I have but three plants of it, and they have obtained three First-class Certificates this year. The truss and flowers are of very much the same type as George Lightbody (Headley), the edge is a good green. Sir W. Hewett (Douglas) has also been three times certificated this year, so that they must speak for themselves; it is an intensely dark flower, which makes a good contrast with the pure white paste. It was placed before Heroine in the class for selfs at the recent exhibition; but this may sometimes happen when the variety taking the second position is the best as a variety. The condition of the competing flowers is a prime factor in such a contest. It may also be interesting to observe that in the eleven exhibitions the grey-edged Auricula George Lightbody (Headley) won "premium" five times. The exceptions were 1880, when Mr. Horner won "premium" with Page's Champion; in 1881 Mr. Douglas won with his seedling Mabel; in 1883 the same exhibitor took "premium" with another seedling, Conservative; Mr. Pohlmann won in 1884 with Prince of Greens; Mr. Horner in 1885 with his fine seedling grey-edge, Greyhound; and the present year Mr. White won with Prince of Greens. It may not be generally understood that the Auricula that wins "premium" is the best plant in the whole extent of the exhibition, selected anywhere from the prize stands. *J. Douglas.*

NARCISSUS GLORY OF LEYDEN.

Our illustration of this new Narcissus (fig. 134) was taken from the specimens exhibited on May 10 at the meeting of the Royal Horticultural Society. This flower has Emperor as one of its parents, and, as will be observed, takes much after it in form, and its colour is also very near that of Emperor, but is perhaps a shade lighter. The real value of this latest addition to the bicolor section, however, consists of the great size of the flower, an idea of which may be gathered from the figure. This variety was exhibited on the above-named occasion by Messrs. Barr & Son, King Street, Covent Garden, who obtained a First-class Certificate for it. The raiser is Mr. De Graaf, of Leyden.

HYPERICUM CHINENSE.

This handsome St. John's Wort, of which we give a figure on the next page, was much in request a century ago when there was comparatively small choice of greenhouse plants; and it was also a favourite garden plant in India, the Mauritius, and the West Indies. According to Philip Miller the plant was first introduced into this country from China, by Hugh, Duke of Northumberland, in 1753; and at the date he wrote, some ten years later, it was highly valued on account of its free-flowering character, and especially because it produces its flowers very freely in winter. Although hardy in the warmer parts of the kingdom it does not, so far as our experience goes, flower freely in the open air. Hypericum monogynum is another name for it. For our illustration (fig. 135) we are indebted to Mr. K. L. Davidson, of Wernoleu, South Wales.

The Covent Garden Lifeboat Fund.—We are pleased to hear that £70 was the result of the last concert of the Covent Garden Lifeboat Fund.

CALANTHES AND THEIR CULTURE.

Our plants of the deciduous species which did not show signs of starting so early as usual this year were potted as soon as they broke. I wrote on the introduction and culture of them at p. 105, vol. ix.; since that time I have noticed their growth in many gardens. Sometimes they are seen growing with the greatest vigour, at other times they are far from satisfactory. It is not difficult to explain the reason of this, as no hothouse plants are easier grown, and to this may be added the statement that few give more satisfaction to the grower, the flower-spikes being so useful to ornament the hothouse in November and December, or as cut flowers, the spikes lasting two or three weeks in a moderately cool room. Where they do not succeed, the failure is to be attributed to growing the plants in an unsuitable atmosphere or temperature, or using wrong potting soil. Over-potting is an error that some fall into. Peat is not essential in the compost, and as many persons cannot obtain it, this will be good news to them. Turfy loam three parts, one part leaf-mould, and one part decayed cow-manure, will grow them well. It may be necessary to add some rough sand and broken up charcoal. The pots require to be well-drained, but not so much as for Cattleyas, Odontoglossums, &c. Too low a temperature is a frequent cause of unsatisfactory results. They should have a minimum temperature of 65° to 70°; and if the temperature rises to 90°, or even 100°, by sun-heat, all the better—they rather like it if the atmosphere is saturated with moisture, like a tropical country in the rains. Sometimes an error is made by giving them too much water soon after potting. The bulbs have no live roots at first, and all the water required is just enough to prevent the compost drying up. When the roots are seen pushing from the base of the new growths water a little more freely, but do not give it too freely. In the height of the growth, when the compost is full of roots, they take a goodly supply of water. In potting, note that a 5-inch pot should contain three small or medium-sized bulbs, and a 6-inch pot three large ones.

I tried ten years ago to set the public right as regards the names, some of them being unnecessarily long. The first introduced species was C. vestita, white, with a yellow blotch in the centre. It is one of Dr. Wallich's discoveries in Moulmein; was introduced by Messrs. Veitch, and first flowered by them in 1848. It was exhibited before the Royal Horticultural Society in Regent Street, and received the award of the large Silver Medal, the highest ever given in Regent Street. The variety with the red blotch was introduced at the same time. C. Turneri and C. Turneri alba were also introduced by Messrs. Veitch through their collector, Mr. Thomas Lobb, from Java. This species is confounded with C. vestita, but is totally distinct from it. They are both deciduous, that is all. Recently another distinct species, said to be Bornean, has been introduced, and named C. vestita oculata gigantea. It is now in flower with us, and although the species is deciduous, the roots remain active all the year round. It is very vigorous, and an important addition to this section; the flowers are borne on long spikes, are large in size, creamy-white, with an

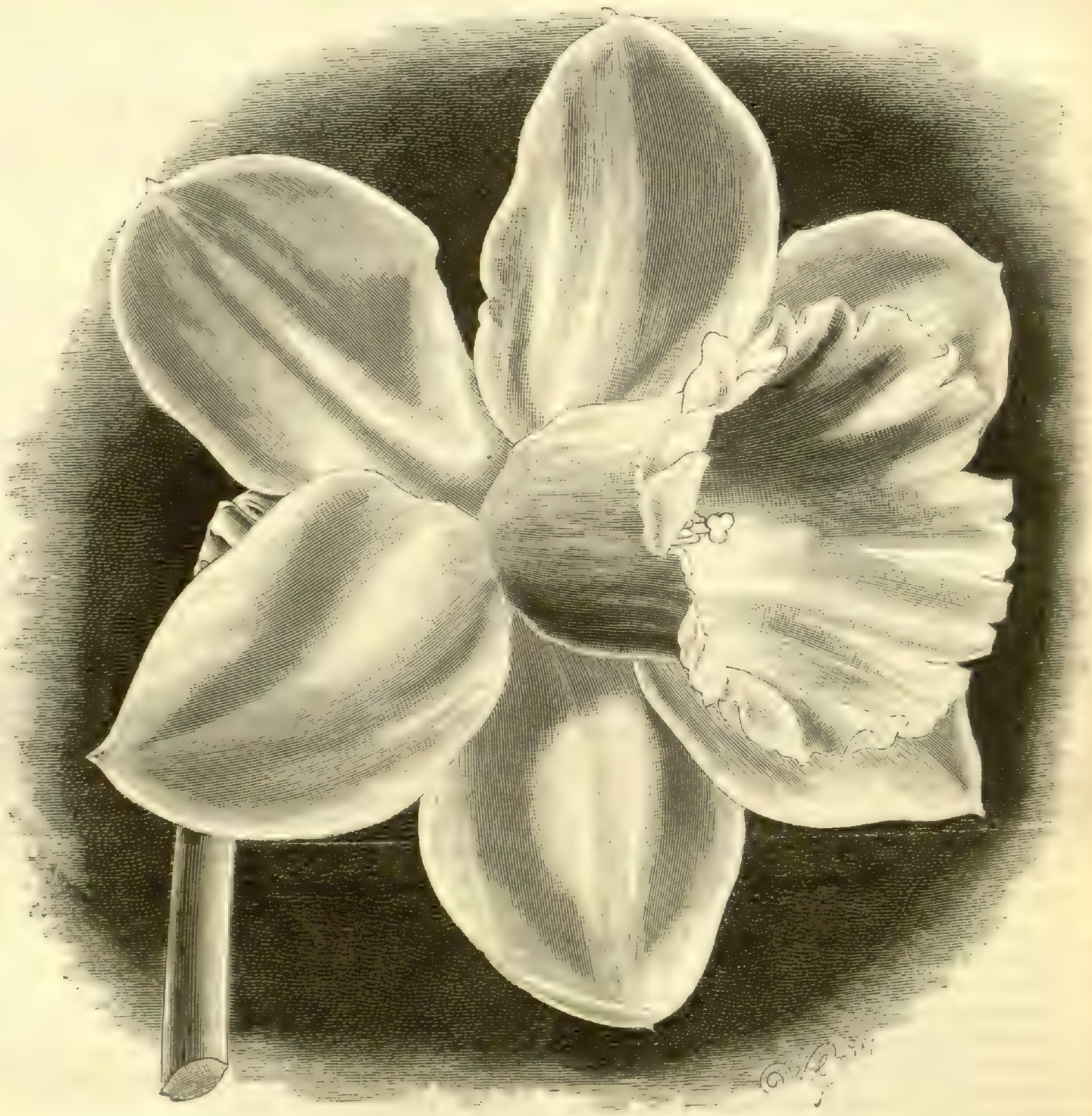

Fig. 134.—Narcissus Glory of Leyden.

orange-red blotch. C. Regnieri has also become plentiful. This is a Cochin China species, introduced into Europe by M. Regnier of Paris. Besides the above, some remarkably handsome hybrids have been raised by Sir T. Lawrence, Bart, M.P., Messrs. Veitch, of Chelsea, and Mr. Cookson, of Oakwood, Wylam-on-Tyne. C. Sandhurstiana, raised by Mr. Gosse, of Torquay, by crossing C. vestita with Limatodes rosea, is said to resemble C. Veitchii, but to be much finer. It cannot be other than a variety of C. Veitchii, which was raised from the same cross, and is fully described by Dr. Lindley in the *Gardeners' Chronicle* for 1859, p. 1016. C. vestita in this case was the seed-bearer. When I wrote in 1878 on this subject, it was stated that Calanthe blooms could be obtained for six months; now we may safely say they can be had all the year round. I saw a beautiful novelty in Messrs. Veitch's nursery in November last—a variety of C. Veitchii with pure white flowers. Its parentage is determined by the form of the bulbs, spikes, and flowers.

The evergreen species I say nothing about at present, but they require the same potting soil as the others, producing stout white fleshy roots in the nodules of pure loam. *J. Douglas.*

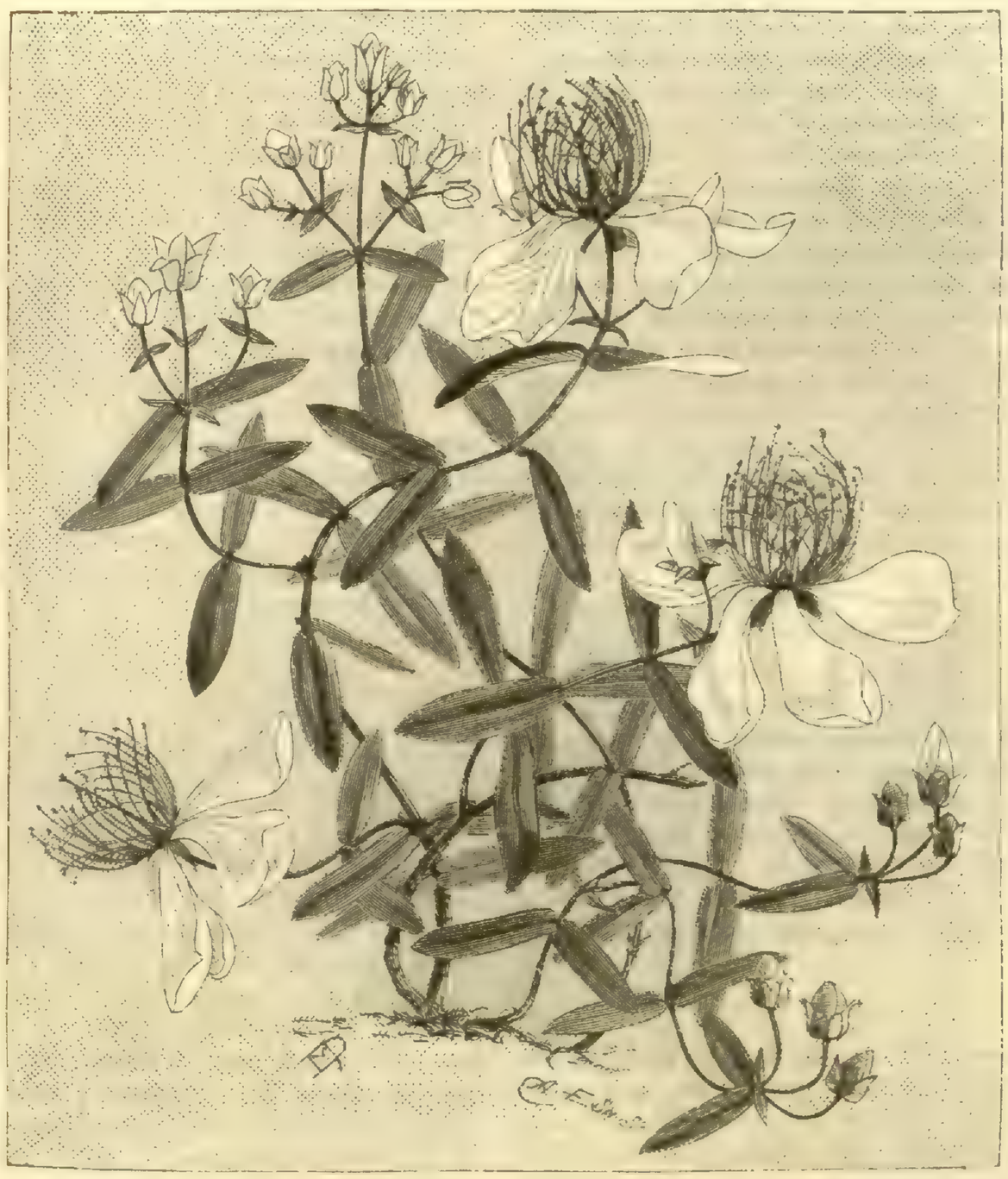

Fig. 135.—Hypericum chinense. (see p. 704.)

VARIATION IN PLANTS.

Darwin's theory thereon does not seem to rest or satisfy the coming generation, if we may judge by a communication read at the Linnean Society, April 21, by Mr. P. Geddes. The paper, entitled "On the Nature and Causes of Variation in Plants and Animals," may be summarised as follows:—

The factor of organic evolution is no longer denied, but its physiological factors have not yet been adequately analysed. Even those who regard natural selection as at once the most important and the only ascertained factor of the process, admit that such an explanation, being from the external standpoint—the adaptation of the organism to survive the shocks of the environment—stands in need of a complementary explanation, which shall lay bare the internal mechanism of the process, *i.e.*, not merely account for the survival, but explain the origin of variations. The relative importance of the external and internal explanations will moreover vary greatly in proportion, as variations are found to be "spontaneous" in some given direction continuously. Avoiding any mere postulation of an "inherent progressive tendency" common to both pre and post-Darwinian writers, the definite analysis of the problem starts with that conception of protoplasm which is the ultimate result of morphological and physiological analysis, viz., to interpret all phenomena of form and function of cells, tissues, organs, and individuals alike in terms of its constructive and destructive (anabolic and katabolic) changes. While the external or environmental explanation of evolution starts with the empirical study of the effect of human selection upon the variations of animals and plants under domestication, the internal or organismal one as naturally commences with the fundamental rhythm of variation in the lowest organism in Nature. It also investigates the nature of the simple reproductive variation upon which the origin of species, as well as individuals, must depend before attempting that of individual variation. The interpretation of all the phenomena of male and female sex as the outcome of katabolic and anabolic preponderance is shown largely to supersede the current one of sexual selection, and in some cases at least that of natural selection; *e.g.*, the specially important one of the origin of such polymorphic communities as those of ants and bees. In such cases natural selection acts, not as the cause of organic evolution, but as the check or limitation of it, and acquires importance rather as determining the extinction than the origin of species. The process of correlation, especially that between individuation and reproduction, is mooted by the author, and its application to the origin and modification of flowers, &c., outlined. A discussion is given of the embryological and pathological factors of internal evolution, with an application of the whole argument to the construction of a genealogical tree of plants and animals.

CLIMATE AND CULTIVATION IN TEXAS.

In a report on the trade and commerce of Texas during the year 1886, the British Consul refers to the present state of the trade in cotton seed as follows:—"Cotton-seed oil is a great export staple of Texas and other cotton-growing States, from which it is sent to Europe, chiefly to Italy, where it is refined, bottled, and sold all over the world as olive-oil, for which it really forms a wholesome substitute. Cotton seed was, therefore, not long ago a profitable article to the cotton farmers, but a syndicate has recently been formed under the name of the American Oil Mill Company, which has bought up nearly every oil mill in the Southern States. They have, in consequence, already run down the price of seed from 7 dols. 50 cents, the normal figure, to 5 dols. per ton, while they have run up the price of oil from 28½ cents (1*s.* 2½*d.*) to 40 cents, or 1*s.* 7½*d.* Having purchased the mills, they close down such of them as are not convenient for their operations, and thereby lessen the rates of labour and expenditure, while they contrive to break down such opposition mills as hold out for a time by paying high prices for oil-seed."

In a description of the climate and soil of Texas the following interesting notes occur:—Northern and Central Texas contain the best farming and orchard land in the State, with a good rainfall, in consequence of the proximity of the hills and forests of the Indian territory; there are also numerous creeks and rivers. Eastern Texas is in great part covered with Pine forests; there is a fair rainfall, and the soil, though sandy, is fertile. The drawback to farming more or less throughout the State, but especially in South-western Texas, is the prevalence of long spells of dry weather, which, since the felling and clearing of large tracts of forest in the interior, are undoubtedly on the increase. Texas is in the same degree of latitude as Algeria, Syria, Southern Persia, &c., and the climate will, no doubt, eventually become, at any rate in the south and west, much what it at present is in the above countries—afflicted with dry, hot summers, little or no rainfall, and agriculture entirely dependent on artificial irrigation. Irrigation has hardly been attempted as yet in Texas, though at least half its area is practically unfit for cultivation without it. Another climatic defect is the "northers"—cold piercing winds of the nature of the *mistral*, which suddenly descend during the cold months from the Rocky Mountains, often causing serious destruction both to vegetation and to live-stock. These "northers" will kill off all but the very hardiest subtropical vegetation, so that although the mean temperature of the climate for the year round is very much higher than that of European and Asiatic countries where the Orange, Lemon, Date, Pomegranate, Fig, Citron, &c., perennially flourish, these fruits can hardly be grown in Texas, the trees being continuously killed off by frosts. On the other hand the heat is too great for the fruits of temperate climates (except far to the north) such as the Vine, Apple, Pear, &c.

In January, 1886, a "norther" set in which in a few hours sank the temperature 45°. Galveston bay long before morning was a sheet of solid ice for many miles. Fishermen were frostbitten in their boats, and in two or three instances actually frozen to death. This frost killed every subtropical tree or shrub, Orange, Lemon, Oleander, Date, &c., in and around Galveston, and temporarily ruined the entire Orange industry in Florida for 4° or 5° to the southward. Cattle died of cold in thousands all

over the country. Southern and Eastern Texas have this year (February, 1887) suffered from a prolonged drought, no rain to speak of having fallen for nearly two months; and were it not for heavy dews, fogs, and mists which have set in occasionally, every blade of grass would have been burnt up. The climate of Texas is perpetually in extremes either of heat or cold, damp or dryness. *J. R. Jackson.*

KEW NOTES.

Plants in Flower in the Rockery.—Viola pedata var. bicolor is one of the most charming little Violets we have seen for a long time, and apparently as free a flowerer as the majority of the species in this pretty genus. The only real difficulty seems to be damp during winter, which may to a certain extent be got over with the aid of squares of glass or small bells. The colour—a rich velvety purple on the upper surface, the lower being blush tinted—is all that can be desired in a flower, and if taken in hand by our improvers and enlarged, would undoubtedly be a great boon.

Dianthus alpinus and D. glacialis, especially the former, promise a fine show this year; they are closely allied to each other, alpinus throwing its larger flowers well above the dark green blunt foliage, while glacialis has longer acutely pointed leaves, the flowers almost sessile and under the foliage. Both seem to be subject to a disease in the form of nematoid worms, but this pest attacks them most persistently when not in active growth; as soon as that commences they appear to throw it off for a time. Both are charming alpines, easily raised from seed, many flowering the second year after sowing; and they are easily raised in the open air. Gentiana verna appears to be quite at home here; it has been established about three years, and is now flowering vigorously. G. bavarica in the bog seems equally healthy, while G. verna var. atroviolacea is a fine colour and more robust than the type. Androsace sarmentosa is doing well at the base of a wall in a perfectly dry situation, being one mass of pretty pink flowers. The soil seems just sufficient to hold the roots of the central mass together, while the runners are numerous, clinging to every crevice where they can get a hold. The exposure is south, with overhanging ledges above to ward off the excessive moisture. The Phloxes are at their very best now; the varieties of subulata, purples, lilacs, and white, being very fine in masses, making a rockery interesting by themselves until the summer flowering plants come forward. P. reptans, P. amœna, &c., are also showy, and soon form large masses in well drained soil. Pulmonaria officinalis, azurea, mollis, angustifolia, &c., have very handsome foliage, and if judiciously mixed with other plants have a very pleasing effect. Mertensia sibirica, with handsome leaves and pale blue and white flowers, does well on exposed spots. The Aubrietias are always fine at this time of year, but the flowers appear to vary much in their various stages; Hendersoni, violacea and the new Leichtlini are all distinct on first opening, but as they become older, individual flowers from each plant may be picked, that are quite undistinguishable. They are all handsome, however, and well worth attention, as well as Olympica, tauricola, Campbelli, &c. Pyrethrum Tchihatcheffii is a charming white-flowered Composite for creeping over roots, &c., in the rockery, but hardly equal to Matricaria caucasica, which it somewhat resembles. The latter does not creep so much, has more finely cut and graceful foliage, and larger flowers; Houstonia cœrulea, var. alba seems to be one of the most floriferous plants on the rockery; it begins to flower now, and will continue to display a sheet of its white, yellow-eyed flowers until stopped by frost in autumn. It likes a cool place free from the mid-day sun, the soil well-drained and the mass left undisturbed. Doronicum glaciale, belonging to the section Aronicum, is a charming rock plant, dwarfer than any of the other species, flowers large, deep yellow, and very striking if well grown. Heuchera sanguinea, undoubtedly one of the best introductions of late years, is perfectly hardy in the open, on an exposed place in a dry sandy soil. It may be increased by division to almost any extent. H. Richardsoni is well worth growing on account of its fine velvety foliage. Dodecatheon splendidum is a fine dark variety, dwarf, and well worth growing, as is Jeffreyanum, giganteum and others, all of which are now at their best.

Tulipa Greigii is a wonder among Tulips; it is by far the largest, and most striking of any of the species, the flowers looking like great flames rising out of the pretty mottled leaves. It seems to like rather a dry situation where it can get plenty of sun. *D.*

CULTURAL MEMORANDA.

CLERODENDRON BALFOURIANUM.

This is suitable either for furnishing a pillar or for training round a trellis as a pot specimen. The flowers, deep red, with white calyces, are produced in the greatest profusion, and last several weeks if a somewhat dry, warm, and airy atmosphere be maintained. Cuttings taken off now with a heel and inserted in sandy soil round the edge of a 3-inch pot, watered, and in the absence of a propagating-house the pots plunged up to the rim in a Melon or Cucumber-frame, will root in due time. They should then be potted singly into the same size pots in a compost consisting of loam and leaf-soil in equal parts, with a sprinkling of sharp sand added, and again placed in heat near the glass, watered, and shaded from sunshine for a few days until the roots have taken to the soil. Afterwards shift the young plants into larger pots as occasion may arise, using three parts of good loam in a rough state and one of leaf-mould and sand, making the same moderately firm about the roots in potting.

Autumn-bearing Raspberries.

The young canes of autumn-bearing Raspberries which have sprung from the old stools within the last few weeks should be thinned out to 6 inches in the row, leaving the strongest and most promising canes. These, as soon as they require support, should be tied to tarred string, two or three lengths of which should be strained to a series of stout sticks stuck firmly in the ground. The suckers afterwards springing from the roots must be removed.

Salvias.

Young plants of Salvias raised from cuttings put in early in spring should be planted out in a sunny position in 6 or 7 inches depth of rich soil on a hard bottom, otherwise the plants will make too luxuriant and straggling a growth. Thus grown bushy and floriferous plants will be secured. The most useful varieties of Salvias to grow for the conservatory and greenhouse are gesneræflora, bright scarlet; Betheli, rose shaded white; splendens, bright red; rutilans (Pine-apple scented), magenta. To this list may be added the familiar patens, with bright blue flowers.

Tacsonias.

T. exoniensis (magenta), and T. Van Volxemii (crimson), are the most suitable varieties to grow, Young plants may be easily raised from cuttings of the young growth taken with a heel of the old wood attached, and inserted in small pots filled with sandy soil, then plunged in a propagating pit, watered and shaded from bright sunshine until they have emitted roots. T. van Volxemi may also be readily raised from seed. The Tacsonias, like many other rampant growers, should not be allowed too much scope for root-action. They do best planted in a narrow well-drained border, about 2 feet wide, 18 inches deep, including 3 inches of drainage laid on a concrete bottom, and from 4 to 8 feet long, according to extent of roof there is to be furnished. A layer of thin turf, grass side down, should be put over the drainage, following this with the necessary complement of compost, consisting of three-parts sound turfy loam and one of peat, with the addition of a few shovelfuls of coarse sand. As the roots push into the soil, with a corresponding increase of top-growth, the supply of water at the roots should be more frequent and liberal. The shoots are sure to become crowded if they are allowed to grow as they will. They should, therefore, be well thinned, but not stopped, as that would partially prevent flowering. *H. W. Ward.*

THE BULB GARDEN.

ORIGIN OF FRITILLARIA CONTORTA.

Fritillaria contorta is the garden name of a plant which Mr. Baker called attention to, and described in the *Gardeners' Chronicle*, May 29, 1886, p. 681, and about the true origin of which nothing was at that time definitely known. Mr. C. B. Clarke, of the Herbarium, Kew, to whom the credit of tracing its origin is due, lately gathered a form similar to the one cultivated in gardens growing wild in a field of F. Meleagris, near Cirencester—the only difference between the two being that the one found by Mr. Clarke is a monster of the chequered form, while the one grown in gardens belongs to the white variety. Mr. Clarke gathered the white variety also, but did not succeed in getting a monstrous flower. With the light thus thrown on this question, and on looking over numerous specimens of F. Meleagris, we noticed a tendency in a few of them to diverge from the abrupt shoulder and take the somewhat conical-shaped base of the variety contorta. The latter has been long cultivated in gardens, and is now pretty widely diffused. Mr. Ellacombe tells us that he received it from the Glasnevin Botanic Garden twenty-one years ago, but how long it may have grown there before that time no one seems to know. *D.*

HORTICULTURE AT NEWCASTLE JUBILEE EXHIBITION.

The firm of Messrs. Sutton & Sons, Reading, have an imposing stand of exhibits in the South Court. Erected against the south wall, it covers an area of many feet, and contains many features of interest, not the least of which are a number of very excellent specimens of the modeller's art in the way of roots, Gourds, Melons, and other edible products of the garden and field. There are fine displays of grasses grown from "Sutton" seed, and seeds of various kinds assorted for every climate. The stand is a perfect exhibition in itself, and well merits studying.

Messrs. William Fell & Co., nurserymen, Hexham, have planted two very large beds of choice Conifers, ornamental trees, Rhododendrons, and hardy flowering plants. In the extreme south of the garden Messrs. Fell & Co. have tastefully laid out in quite a different style another very large bed, which is sown down with their lawn grass seeds. There are four beds in all in this bed filled with specimen Conifers; while large specimen Conifers are placed at intervals on the lawn, and produce a grand effect. Messrs. Fell & Co. also are furnishing with flowering plants a large conservatory in the North Garden, exhibited by Messrs. McKenzie & Moncur, Edinburgh, and have supplied over 200 choice table plants to Messrs. Gibson & Co., for their spacious dining-rooms.

Mr. W. J. Watson, nurseryman and seedsman, Newcastle, exhibits in the South Court an effective case, in the centre of which Ferns spring out from a background of rockwork and mirrors. The Ferns and mosses are now thoroughly established, and during the fortnight they have already been in the Exhibition fresh fronds have daily made their appearance. At each side of the Fern case are smaller cases containing samples of garden and farm

seeds, adapted for sowing in the North, together with an assortment of divers articles in daily use in gardens. The same exhibitor has stocked the handsome conservatory erected by Messrs. Lowe & Sons, of Edinburgh, in the North Gardens, with a beautiful assortment of Palms and flowering plants, and intends keeping up a successional display during the time the Exhibition remains open. The large bed of Conifers and evergreens planted by Mr. Watson in the Central Garden, is now surrounded with verdant turf, which has been renovated with an application of the "Northumberland" lawn mixture, and should, as the summer advances, present an increasingly refreshing appearance.

The exhibition of Messrs. Little & Ballantyne is in the South Court, where is displayed with much taste an exhaustive collection of tree seeds; showing the varieties of woods used in the arts and manufactures; and an interesting collection of pasture grasses, botanically named, with samples of seeds of the same grasses used in laying down to permanent pasture and in alternate husbandry.

FRUIT REGISTER.

AUGUSTE NICAISE STRAWBERRY FOR POT CULTURE.

I have for many years read articles in the *Gardeners' Chronicle* and other gardening papers on the best Strawberries for pot culture, but do not remember having seen Auguste Nicaise recommended for that purpose to those who are not always successful with other varieties that they have grown. I have grown this sort in pots for several years, and have found that, with good treatment, it invariably produces excellent crops of very large fruit. I have this year gathered fruit from it, eighteen of which weighed a pound, and these from plants growing in 32-pots, with from twelve to twenty Strawberries to each plant. The treatment the plants received, from which the above-mentioned large fruits were gathered, was that they were layered in small pots as soon as the runners were procurable, contrary to the practice of many gardeners; but if plants are desired with good strong crowns before winter, there is nothing like making a timely show. When well rooted they were potted into 32's, and as soon as these were fairly well filled with roots they received weak manure-water two or three times a week until the autumn. They were wintered in a cold pit, and in the spring put into the vinery, not having the advantage of a Strawberry-house. The plants were taken in some time previous to closing the house, or putting on heat to start the Vines. This is very important, as the plants then start very slowly compared with what they would if put at once into heat, which weakens the plants to a great extent. As soon as the plants began growing freely they received manure-water liberally until the fruit began to ripen, when it was again discontinued. *E. Webber, Hall Grove.*

The Early Gamay Grape.

Of all the fruits introduced by Baltet Frères, of Troyes, France, it would appear that the above variety deserves particular notice. According to the *Revue Horticole*, "this is a very productive Grape, flowering sometimes three times in one year. The bunch is rather large, compact, and the large berries black, with an ashen-blue bloom, of good quality, ripening in the variable climate of France from the end of July onwards to the end of August, being therefore a month in advance of the ordinary vintage time. In the open it ripens with greater regularity, and as early as on an espalier." Good for sunny walls in England.

Apple Josef von Brichy.

A greenish late table fruit, raised by Mr. Loisel in Fanquemont, Belgium, in the year 1855; it is a tolerably large, pyramidal-formed, handsome fruit, with a greenish light yellow rind, reddish-yellow on the sunny side, and numerous russet specks. The yellowish-white flesh is firm, very juicy, of sub-acid flavour, and aromatic scent. Season from November to the end of January. The tree makes a perfect pyramid. *Garten und Blumen Zeitung.*

PLANTS AND THEIR CULTURE.

Decorative Flowering Plants.—For embellishment during the dull months Tydæas and the ornamental foliaged Gesneras are very acceptable. Their culture is by no means difficult, but they quickly receive injury if neglected; well-drained pots, a fibry loam, with sufficient sifted leaf-soil and sand to keep it light and open, are essential, and they should be repotted and shifted on into the flowering-pots before the roots become cramped for room. These plants also require a light position, near the glass, so that a sturdy growth is insured, but they must be shaded. Such varieties and species of Gesnera as zebrina and exoniensis in particular, soon lose the splendour of their foliage when exposed to bright sunshine, and each plant should be kept in an upright position with neat sticks, and supplied with clear liquid manure as soon after the final potting as the roots have penetrated all parts of the fresh soil. Late batches of Achimenes should receive similar treatment, and be carefully attended to, to prevent weak growth. Recently propagated Scutellarias, Eranthemums, Justicias, Pentas, Sericographis, Clerodendron fallax and C. fragrans flore-pleno, Goldfussias, Thyrsacanthus, and other fast-growing plants belonging to this class, must on no account be neglected as regards shifting into larger pots when needful. They succeed satisfactorily in good loam, leaf-soil, and sand, and to this some decomposed manure may be added when the plants are placed in their blooming-pots, when a front stage in a moderately warm low house or pit, where they can have the benefit of a free circulation of warm air in favourable weather, will be found to suit their wants. By occasionally stopping the strongest shoots during their season of growth a bushy habit will be formed, and their flowering capability increased. Where the number of Euphorbias, Poinsettias, Plumbagos, and the winter-flowering Begonia insignis, B. Moonlight, and B. nitida are below the requirement they should be made up without delay. Euphorbia jacquiniæflora should be afforded a moist stove treatment whilst making its growth; it does not, however, absorb so much moisture at the root as many plants do, and therefore needs discriminate watering; and its wood should be ripened in the autumn, to cause it to blossom freely, by more liberally ventilating the structure in which it is growing. The best lot of Poinsettias we ever had were grown during the summer months, after they had been potted into their flowering pots, in cool frames, which had been used for early Potatos, and the pots being plunged into the warm bed of leaves upon which the Potatos had been grown. They were subjected to a plentiful supply of fresh air, but at no time were the lights removed from over them. The system of planting out without the protection of glass, which answers under favourable conditions, does not do so here. We treat Bouvardias in a similar manner, the only difference being that they are planted out in a pit previously used for early Cauliflower, and they have no bed of warm leaves beneath them. *Thomas Coomber, Hendre Gardens.*

THE HARDY FRUIT GARDEN.

Morello Cherries.—These Cherries succeed best in soil of a light sandy nature; on soils of a heavy retentive nature resting on the limestone rock, the trees are seldom in a satisfactory condition, and where such is the case, and the planting of fresh ones is contemplated in the coming autumn, some soil of a lighter texture should be procured to mix with the staple at planting time. We have here a large number of trees of Morello Cherries growing in borders turfed over, and from which we gather our finest fruit. This is a system that we have pursued for many years with much success, and it is one I can highly recommend.

Trees of this kind of Cherry on walls in this district are sheets of blossom and give every promise of a heavy crop of fruit, as all danger from very sharp frost is now at an end. They should be disbudded in precisely the same way as recommended for Peaches, leaving a terminal shoot to keep the fruit swelling, and one at the base to replace the fruit-bearing shoot at pruning time. The greatest pest in the way of insects is blackfly, which can be kept in check by an occasional dusting over with tobacco-powder, and the use of the syringe or garden-engine, as soon as the fruit is set; and where considered necessary the trees should receive a thorough root-watering, afterwards giving the borders a heavy mulching of manure; this will greatly assist the fruit in their first swelling, and prevent them from dropping off. *E. Ward, Hewell, Bromsgrove.*

FRUITS UNDER GLASS.

Melons in Pits and Frams.—As the pits and frames in which Potatos and bedding plants are grown become vacant they should be got ready for Melons. The soil in which the Potatos have been grown being removed the leaves should be turned over, and, if necessary, some fresh ones added so as to raise the bed to within 15 inches of the glass, the leaves being firmly trodden together at the time of putting them in the pit. This done a couple of inches thick of rotten dung should be spread over the leaves, after which a hillock of three parts good fibry loam and one of lime-rubble should be put in the middle of each light. When this has been in the pits or frames a day or two it will be in a fit state to receive the plants, which should be shaded from the sun for a few days until the roots have taken to the soil, after which it should be discontinued. Syringe the plants overhead at closing time in the afternoon (about half-past 3 o'clock) during bright sunny weather. Put air on early in the morning—say half-past 7 or 8 o'clock—to prevent the leaves of the plants being scorched. The frames in which bedding plants have been hardened off can be placed on a south, west, or even an east border, and a barrow-load of soil of the description indicated be put in the centre of each light, afterwards setting thereon two plants 9 inches apart on the ridge in each light in the manner recommended above. When the hillocks need the addition of more soil—that is, when the roots protrude through the sides of the mounds—it should be well trodden all over the bed, especially along the sides and ends to prevent its coming away from the woodwork.

Strawberries.—These we grow on shelves suspended from the rafters on either side of the ventilating ridge in a low span-roofed range of Melon-houses, and every morning those plants, the fruits of which are approaching maturity, are shifted into houses in which Melons are ripe or ripening, so as to fill the space vacated by plants from which the fruit was taken the previous evening. The somewhat dry, warm, and airy atmosphere necessary to give flavour and colour to the Melons is also suitable for the Strawberries in this stage of ripening. In order to secure large well flavoured fruits liberal supplies of tepid liquid-manure should be given at the roots until the fruit begins to colour, until which period the plants should also be copiously syringed overhead morning and afternoon. *H. W. Ward, Longford Castle.*

THE KITCHEN GARDEN.

Cucumbers in Cold Frames.—Stationary frames that are used for wintering Lettuces, &c., in, may be easily adapted for growing Cucumbers during the summer and early autumn. The soil inside should be thrown out deep enough to allow of its being replaced with prepared fermenting material sufficient to promote a gentle bottom-heat, and on this a foot of good rich soil should be placed for planting in. A good hardy free-bearing sort, such as Pettigrew's Cardiff Castle, should be selected for this purpose, and the young plants raised and prepared accordingly.

Vegetable Marrows.—Those in frames will be filling the space allotted them, and the lights should therefore be raised to a convenient height by placing bricks underneath, so that the young shoots may find their way underneath and beyond the limits of the frame; some additional soil should at the same time be afforded the plants, and the growing shoots firmly pegged down. For a late succession to those planted outside seeds can be sown on ridges in the open, with hand-glasses being placed over them until the young plants are well advanced, and commence to grow freely. *J. Austen, Witley Court.*

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APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

THURSDAY, June 2—Linnean Society, at 8 P.M.
FRIDAY, June 3—Royal Botanic Society: Lecture, at 3 P.M.

SHOWS.

MONDAY, May 30—Bath and West of England and Southern Counties Association: Dorchester Show (five days).
THURSDAY, June 2—Reading Horticultural Society.
SATURDAY, June 4—Manchester Tulip Show.

SALES.

WEDNESDAY, June 1—Collection of Established Orchids, Roses, and Greenhouse Plants, &c., formed by the late Dr. Meadows, at Poyle Manor, Colnbrook, by Stevens. Bedding Plants, at Child's Nursery, Finchley Road, N.W., by Protheroe & Morris.
THURSDAY, June 2—Collection of Established Orchids, formed by G. S. Wilson, Esq.; also other Orchids in Flower, at Stevens' Rooms.
FRIDAY, June 3—Orchids, at Protheroe & Morris' Rooms.

Intercultural Tillage.

The explanation of the efficacy of stirring the soil about growing plants is based on the loosening and breaking up of the soil particles, in order to facilitate the progress of the roots, and admit the air which oxidises organic matters, and acts on the mineral substance so as to liberate the plant-food, to change the physical conditions of the soil with respect to evaporation and absorption, and, it may be added, to change mechanically the position of the plant-food within the interstices of the soil, and to facilitate the production and growth of roots. Intercultural tillage, therefore, is beneficial because it pulverises and stirs the soil, and because it breaks or prunes the roots, and facilitates the production of new ones, and thus has a physiological influence on the plant.

Breaking the roots gives a check to the growth of the plant, and tends to change the character of its growth. Thus intercultural tillage must be timed to the necessities of the plant. It is a means to an end, and judiciously employed promises much benefit. A drought which comes so seasonably as to check leaf-growth at just the proper time, or a springtime which, with a hot sun by day to warm the earth, has cool nights to retard the night's growth, acts in somewhat of a similar manner. Another consideration: an excess of manure tends to hasten leaf-growth, especially if the manure is strongly nitrogenous; and hence if the plant be left to itself growth becomes rank, and there is little production of flower or fruit. If, however, the growth be properly checked, then the forces of leaf-growth are diverted to the production of flower, seed, and maturation.

As an illustration, we can cite the Cabbage, which, in poor soil and in dry and hot seasons, will throw up prematurely the inflorescence, due in ordinary course the following year. And even in rich soils the Cabbage may be caused to break its head and send out a seed-stem, by judiciously checking its growth. The importance of these facts has long been recognised by horticulturists.

Thus, under the head of "resting," Lindley states "that the effect of a very dry atmosphere is to inspissate the sap of the plant, and this in all cases tends to the formation of blossom-buds and fruit. Very low temperatures, under the influence of much light, by retarding and diminishing the expenditure of sap in the growth of plants, comparatively with its creation, causes an early appearance of fruit." Again, "Whatever produces excessive vigour in plants is favourable to the formation of leaf-buds, and unfavourable to the production of flower-buds; while, on the other hand, such circumstances as tend to diminish luxuriance and to check rapid vegetation without affecting the health of the plant are more favourable to the production of flower-buds than of leaf-buds."

It is quite evident that all plants must either send their roots to the food in the soil, or the food must go to the roots, or the two processes must be combined. In the passage of water in the soil we have an agency for the disturbance of the relations of the food supply.

In the growth of the root we have another agency which brings the plant into contact with the food. Now it seems plain that that plant which occupies with its feeding roots the largest extent of soil, that plant whose roots fill the most interstices of the soil, must, other things being equal, have a greater command over the food supply of the soil. In root-pruning many plants we cause the main roots to divide, and send out more numerous small fibrils and root-hairs than existed on the root that was cut away, and we thus give that plant a greater access to the food-supply of the soil than it previously had; just as, for illustration, we can increase the leaves on a given area of a hedge, by a system of pruning which shall cause increased multiplication of branches within that area.

But on all plants the beneficial effects of root-pruning and interculture would seem to be more marked on fertile land than on poor soil, or even on land in ordinary condition. In all cases it should be applied according to the physiological requirements of the plants with which we have to deal.

Amaryllis Colonel Burnaby.—The fig. (136), for which we are indebted to the kindness of Messrs. J. Veitch & Sons, Chelsea, represents one of the best varieties of the new type of Amaryllis that have been raised by them by intercrossing the South American Hippeastrum pardinum and H. Leopoldi—which gave good form and substance to the flowers, but reduced their number—with the best of the Amaryllis of Continental origin. These hybrids produce from two to four blooms on a scape, which are large and usually of brilliant colours. It is also noticeable that the segments of the flower are getting more and more bluntly pointed in the later forms, so that we have flowers approaching the circular form so admired of florists. A. Colonel Burnaby is brilliant scarlet in colour, of extra large size and substance, and has received a First-class Certificate from the Royal Horticultural Society and a Certificate of Merit from the Royal Botanic Society.

The Gardeners' Orphan Fund.—A meeting of the provisional committee took place in the conservatory of the Royal Horticultural Society on Tuesday last, Mr. Geo. Deal presiding, when it was announced that, up to the 23d inst., the sum of £393 11*s*. had been promised in donations, and £193 as annual subscriptions, the greater part of the latter being in sums of 5*s*. The Hon. Secretaries reported that 16,000 circulars had been issued to some 9000 persons, and it is believed that a great many are holding back their replies until they know whether the Fund is to be established on a permanent basis. It was unanimously resolved, that the provisional committee are of opinion that the progress made in the direction of forming a Gardeners' Orphan Fund is sufficiently satisfactory to warrant them in calling a general meeting of supporters, with a view of establishing the same. It was further resolved that this meeting should take place in the conservatory of the Royal Horticultural Society on July 12. A sub-committee, consisting of Messrs. G. Deal, W. Roupell, J. Woodbridge, R. Dean, and the Hon. Sec. *pro tem.*, was appointed to draw up a report for presentation at the general meeting on July 12, and make the necessary arrangements for the same. A draft of the rules and regulations of the fund was read and considered, and referred to the Executive Committee, who will discuss them in detail, and submit them to the general committee for approval previous to going before the general meeting on July 12. A cordial vote of thanks was passed to the Chairman for the great support he has given to the movement.

Royal Horticultural Society.—It is announced that the Council of the Royal Horticultural Society has decided to call a special meeting of the Fellows to consider the present position of the Society with a view to future arrangements. The meeting will be held at South Kensington on Tuesday, June 14.

The Potato Crop, 1886.—Mr. Frederick William Foord, in his report on the Potato market this year, states that the quality of Potatos this season has been very inferior, and in very few instances have Potatos cooked as compared with previous seasons. There is now only about three weeks to finish up the season, and he strongly advises those senders who have now Potatos on hand to send on quickly, or they will miss the present good market, and will then have to sell them at much lower quotations.

Linnean Society of London.—The next meeting will be held on Thursday, June 2, at 8 P.M., when papers will be read on:—1. "Transpiration and Living Protoplasm;" by the Rev. G. Henslow. 2. "Light and Protoplasmic Movement;" by Mr. S. Moore. 3. "Algæ on Tortoise;" by Mr. C. Potter. 4. "Nuclei in Oscillaria;" by Mr. D. Scott.

The Grange Gardens, Hackbridge, Carshalton.—We are informed that Mr. A. H. Smee has given permission for any who are interested in horticulture to visit his garden ("My Garden") next week. There is at present a nice show of Orchids in bloom. The place is only about seven minutes' walk from Hackbridge station.

Hull and East Riding Chrysanthemum Society.—The annual report, together with the schedule of prizes for the fourth annual show of this Society, to be held in the Artillery Barracks, on Thursday and Friday, November 17 and 18 next, is issued. The total value of the prizes for this year is over £200; this being, we believe, the largest amount ever offered at any Chrysanthemum show, except the National Society's show. A special feature of the schedule is a Silver Challenge Vase, value 15 guineas

Fig. 136.—AMARYLLIS COLONEL BURNABY. (SEE P. 708.)

in the open class for forty-eight cut blooms, which must be won twice successively, or three times altogether, to become the exhibitor's property. Accompanying the vase is a 1st prize of £15, with 2d, 3d, and 4th prizes of £10, £5, and £2 respectively. A Silver Challenge Cup, value 10 guineas, is offered for the first time by the President of the Society, R. Falconer Jameson, Esq., for twenty-four cut blooms, open only to exhibitors in North Lancashire within 20 miles of Hull, and anywhere in the East Riding of Yorkshire; and a Silver Challenge Cup, value 10 guineas, for a group of Chrysanthemums in the open class. There is a Silver Challenge Cup, value 8 guineas, for the best twelve incurved and twelve Japanese cut blooms respectively, confined to amateurs. In the ladies' section a piece of challenge plate is offered, value 5 guineas, for a dessert table, 8 feet by 4 feet, completely laid out for 6 persons, only Chrysanthemums with any kind of foliage to be used in the decorations. In all cases money prizes are offered in addition to the challenge plate. A novelty is introduced in the form of a class for twelve blooms sweet-scented Chrysanthemums, and one for nurserymen only for the best display of cut blooms in a space 16 feet by 18 inches, set up in any style. This class is intended for new and decorative varieties not usually seen in exhibition stands, and may include all sections of the Chrysanthemum. The Hon. Secretaries are Mr. Robert Collison and Mr. Edward Harland, 5, County Buildings, Hull.

The Crystal Palace.—The novelty of seeing the Crystal Palace crowded with visitors on Sundays is likely to be realised after this week, as the directorate announce their intention of throwing the building open on that day to the public, free of charge, the "open sesame" being the mere production of a visiting card. The condition that the visitor dines at the Palace is not likely to be a material drawback, as he must dine somewhere, and the Palace tariff is moderate enough. The idea seems to be a move in the right direction, and may foreshadow that day, said to be coming, when the Palace will pass into the hands of the nation, and the entrance to it on all seven days will be on the principle which obtains in most of our public libraries, viz., the mere writing one's name and address at the turnstile.

Bambusa King-Mei. — A relatively strong-growing beautiful species of Bamboo from Japan, the stems growing to the height of 6 feet; it belongs to the so-called square-stemmed species.

Coffee Culture in Rio Janeiro.—Reporting on the general state of the province of Rio Janeiro the British Consul thus speaks of the Coffee crops. The tree, he says, is found growing in almost every part of the province—in the plains as well as in the highlands. The principal plantations are situated in the Cantagallo range, in the lands in the vicinity of the Parahyba River, the bed of which is from about 900 to 1050 feet above the level of the sea, at Commercio, Uba, Vassouras, and other places. The trees are there planted on the sides of steep hills. The Coffee blossoms from August to October according to locality, and is picked in March and April. A hectare of land is supposed to contain some 918 Coffee trees, which yield from 675 to 2000 kilos, according to the fertility of the soil. In the districts of Cantagallo, S. Fidelis, and other parts, for some years past, the Coffee trees have been subject to a disease manifested firstly in the yellowness of the upper leaves, and afterwards in the shoots, the trees soon drying up. In this way about one-tenth part of the trees in the above-named districts have perished. This disease is supposed to be propagated by an insect which lives in, and feeds on the roots. It deposits its eggs in the knots of the roots, causing the fibres of the same to rot. On this the eggs are seen, having the shape of Mushrooms. This generally takes place in the heaps of weeds or grass which rot at the foot of the trees, forming a fine soil for the new root fibres. As a remedy against this evil it is recommended by Dr. Glaziou that the weeds and grass should never be heaped up to rot near the roots, but should be left to be dried by the sun and afterwards brought together and burned. The Orange trees are also subject to be attacked by the same plague. Dr. Glaziou is convinced if this rule be attended to that in two years' time the Coffee estates will return to what they were formerly.

Stamford Park.—A grand display of Tulips arranged in beds covering a quarter of an acre is now to be seen in the front of Highfield House, Stamford. Some of the best and brightest colours are employed in single and double kinds, about 25,000 being planted.

Pinus koraiensis variegata (Shonsin Glogu-Matsou).—This species is remarkable on account of the young leaves being yellowish-white. When planted in the open it proves quite hardy, but is injured if placed in full sunshine. A native of Japan.

The Carriage of Fruit to London.—The *Canterbury Press*, May 21, states that a deputation of fruit growers from Sittingbourne and district (including some of the largest fruit growers in Kent) has waited upon the London, Chatham, and Dover Railway Company with the object of effecting a reduction in the carriage rates. The railway authorities formerly charged from 7¼*d.* to 7½*d.* per sieve (or bushel), and the rates for half or quarter sieve averaged 4*d.* per basket. The low prices obtained by the growers during the last two seasons rendered it positively out of the question for these rates to be maintained, and as the railway company remained obdurate, and would not lower the scale, an association was started last season for the purpose of conveying fruit to London markets by water instead of rail. The result exceeded the most sanguine expectations, but before operations were recommenced the railway authorities were once more sounded upon the subject. The deputation was offered a reduction of 20 per cent., which was accepted. This will have the effect of reducing the charges to 6*d.* per bushel. The fruit growers around Sittingbourne at a meeting on Friday, the 20th inst., resolved to send a deputation to the principal salesmen in the London markets, in order to obtain more satisfactory rates of commission, and to induce them to accept a percentage on the amount realised by the sales, instead of the fixed sum hitherto charged by them, regardless of the price the fruit realises.

Bambusa Okamé Sasa. — This Japanese novelty belongs to the Fortunei group of Bamboos, and is very similar to B. Fortunei aurea, is very dwarf, hardy, and clothes itself quickly with its grass-like foliage. The numerous stems reach a height of 9 inches to 15 inches. The leaves are of an intense green colour.

The Figs of Asia. — Fig trees form such a prominent feature in tropical vegetation generally, and in the vegetation of tropical Asia more especially, that a fully illustrated monograph of the Asiatic species of so difficult a genus will be hailed with delight by botanists, and prove useful to horticulturists. We have seen the first part of Dr. G. King's monograph, on which he has been engaged for some years, and a cursory glance at it is sufficient to convince us that it embodies much honest labour. This part contains nearly one hundred plates, and we hope to give a fuller notice of it very shortly.

Coloured Drawings of Bromeliaceæ.—We learn that the trustees of the Bentham Fund for Promoting Botanical Science have purchased the fine collection of original drawings of Bromeliaceous plants made by the late Professor Morren, of Liège, and it will be deposited in the Kew Herbarium. As Professor Morren for many years made a special study of this ornamental and peculiarly American natural order, and had a much larger number of the genera and species in cultivation than existed elsewhere, these drawings will doubtless prove a valuable addition to the ever rapidly increasing material accumulating at Kew. The larger Bromeliaceæ are necessarily very imperfectly represented in herbaria, as it is difficult, and indeed often impossible, to prepare specimens adequately representing the species. A portion of the living plants of Morren's was, we believe, also acquired for Kew.

Coca.—It is reported that Coca leaves (Erythroxylon Coca) are becoming a recognised article of export from Peru, a demand having "sprung up for them for the manufacture of cocaine, now so much used in surgical operations for killing pain." The quantity exported from Mollindo during the year amounted to 705 quintals, valued at 17,625 dollars.

The Russian Imperial Horticultural Society.—The following gentlemen have been named corresponding members of the above Society:—Mr. H. J. Veitch, Chelsea; Mr. Elwes, Cirencester; and Mr. Lynch, Cambridge Botanic Garden.

Production of Male Cones of Keteleeria Fortunei. — In a recent number of the *Revue Horticole* it is stated that Messrs. Rovelli Brothers, Pallanza, Italy, are in possession of a specimen of this rare plant, which, although it has borne female cones, has not previously produced males, and as no other European specimen has yet done so, no seed of this plant has ever ripened in Europe. It is to be hoped that fertilisation may take place, so that this interesting species may become more distributed.

New Industry.—One hardly expects to see an account of an industry for the employment of Hypnum vulgaris, yet the *Revue Horticole* announces that such is a fact. It is stated that Mr. Mouvault, a French weaver, is manufacturing carpets from this little moss.

The Glands of Peaches, &c.—These are interesting to the gardener from the circumstance that they are useful in distinguishing one variety from another, and from the singular circumstance that those varieties destitute of glands are the most subject to mildew. Further details as to these glands are contained in the following paragraph, which we take from the *Journal of the Pharmaceutical Society*:—"On the young leaves of Amygdalus communis, as well as on those of the Peach, Plum, and Cherry, nectariferous glands are found, which are stated by Signor L. Macchiati to vary in size according to the time of day, being largest in the morning and smallest in the afternoon. The object of these glands appears to be to protect the flowers against the attacks of caterpillars. The glands disappear altogther from the mature leaves." We commend these observations to the notice of our young gardeners, in the hope that they will be able to confirm or refute them, and add to our knowledge of these interesting structures.

Syndicat des Cultivateurs du Departement de la Seine.—According to a notice appearing in the *Revue Horticole* there is to be a horticultural society with the above title established for the department of the Seine, France. Mr. Désiré Vitry, 8, Rue Alexis Lepère, Montreuil, to whose efforts the Society owes its existence, is to be the President. The Society undertakes to watch over the Paris market in the interest of its members, and to become a medium of sale and export of products, and also for the importation of seeds, manures, &c. Workmen out of employment may enter their names in the books of the Society, so that employers may find hands when wanted.

Coffee and Banana Culture in Costa Rica.—Coffee and Bananas are said to be the two chief articles that are now attracting attention in Costa Rica—the former for the better prices ruling in Europe, and the probable failure or short Brazilian crop for the next year or two, and the latter for the

quick and ready returns the cultivation of Bananas gives. For instance, forest land, say of 200 acres can be cleared, sown, and be yielding a fair crop in eighteen months, whilst Coffee, Cocoa, and rubber require four to five years before any return can be made.

American Apples in England.—The value of the Apples sent from America to England last year is given as £700,000, of which Canada furnished £80,200.

Publications Received.—*Species of Ficus of the Indo-Malayan and Chinese Countries.* Part I.: *Palæomorphe and Urostigma.* By G. King, M.B., L.L.D., F.L.S. (London: L. Reeve & Co., 5, Henrietta Street, Covent Garden; Calcutta: Bengal Secretariat Press).—*Die Erziehung der Pflanzen aus Samen.* By H. Jäger and E. Benary (Erfurt, Germany: E. Benary).—*Gleanings in Old Gardening Literature.* By W. C. Hazlitt (London: Eliott Stock).—*Jack of Hearts.* By H. T. Johnson (London: 153, Fleet Street, E.C.)—*Fungus Hunters' Guide.* By W. Delisle Hay (London: Swan, Sonnenschein, Lowry & Co., Paternoster Square).—*Philanthropy and Five per Cent.* (London: Wightman & Co., 104, Regency Street, S.W.)—*Place Names Derived from Plants (in the neighbourhood of Bath).* By Rev. Canon Ellacombe, M.A. (Bath: *Herald* Office, Northgate).—*Annual Report of the Secretary for Agriculture, Nova Scotia, for* 1886. (Halifax, N.S.)

TREES AND SHRUBS.

CONIFERS IN BOGGY SOILS.

It is perhaps less generally known than it ought to be that many Conifers are particularly well adapted for bog planting. Nowhere have I seen such fine healthy-looking specimens of the Douglas Fir, of Lambert's Pine, the various species of Abies—particularly A. nobilis, A. magnifica, A. Nordmannia, and A. amabilis—the Hemlock Spruces, such richly tinted Retinosporas, or such tall shapely Larches, as in a reclaimed bog in Ireland. Too often do we hear it said that the Larch is unsuited for bog planting, but never a greater mistake was made, for in my own experience by far the finest timber of this kind I have ever seen, and destitute entirely of the disease to which of late years the tree has been so susceptible on most other soils, was that produced on deep peat-bog. Perhaps the two largest Larches in North England are growing on peat, one of these that I measured a few days ago being fully 90 feet high (20 feet of the leader had been broken off), and girthed at a yard up 13 feet odd. The other specimen was nearly as large, the trunks at 20 feet high being but of little less girth than at 3 feet, straight as arrows, and with a very gradual taper from base to tip. Wellingtonia gigantea and Taxodium sempervirens are quite at home in bog-soils; indeed, they grow with a rapidity there that I have but seldom seen equalled elsewhere; while the rarely seen Cephalotaxus Fortunei and C. drupacea, the rarer Junipers, and hosts of other choice subjects, put on a richness of foliage that is quite surprising.

Glonera jasminiflora.

Planted out against a wall facing south, but shaded somewhat by the Roses overhead, this plant blooms freely in the Rose-house at Gunnersbury Park, and continues in bloom for a long time. It is on a border raised 2 feet or so above the ground level, and it appears to like a moderate amount of moisture. In such a position it is a charming plant. *R. D.*

Rhododendron Lady Alice Fitzwilliam.

This is one of the very best of the early-flowering, sweet-scented greenhouse Rhododendrons; the flowers are large, finely formed, and borne in bold and striking clusters, and exquisitely fragrant—a plant or two quite perfumes a large house. It is a perfect picture in March and April treated to an intermediate-house. Mr. Roberts grows it at Gunnersbury Park, and has several fine specimens, which, having bloomed, are now making their young growth in a vinery. *R. D.*

HELIONOPSIS UMBELLATA

Is a curious Liliaceous plant, closely allied to the well known Helonias, which, indeed, it very much resembles, both in habit and appearance. It was introduced from Formosa a few years ago by Messrs. Veitch & Sons, of Chelsea, and when it becomes better known it is sure to be appreciated as a garden plant. In general, plants of this class are not the easiest to cultivate, though the present one is a striking exception to the rule; it grows and flowers freely in the open air, very little, if at all, affected by the severe weather we have been having lately. A damp site seems to suit it best, and a compost of peat, leaf-soil, and sand, made free with small pebbles; it likes exposure to the sun, and it should be placed out of the drip from trees, &c. The leaves are in rosettes, resembling Helonias bullata, lanceolate, abruptly mucronate, light green at base, and brownish towards the tips; stem leaves very thin and greenish-white. The scape carries from two to three flowers on petioles about half an inch long; the segments are narrow, free almost to the base, deep rose coloured, gradually becoming paler towards the tips; filaments about as long as the segments, terminating with dark blue anthers, making a pretty contrast; style exserted about half an inch. It flowers March and April, and may be freely increased by division of the roots. *D.*

NOTICES OF BOOKS.

Through the Fields with Linnæus: A Chapter in Swedish History. By Mrs Florence Caddy. (8vo. 2 vols, Longmans.)

In these volumes, dedicated to Dr. Trimen, we have a kind of diary of Linnæus' life, and more especially a record of his travels, by a lady who has gone over the same ground, and religiously followed in the footsteps of the great naturalist. The main facts of Linnæus' life are so well known that it was hardly necessary to repeat them, but it is interesting to visit, a century after Linnæus' time, the scenes of his early life, to travel over the same ground, to explore the academic halls rendered famous by his genius, and to inspect the quiet homes where so much of his work was done.

Mrs. Caddy's diary would have been better compressed into one volume. Her enthusiasm is apparently greater than her knowledge of natural history, and certainly more profound than her judgment; hence we find her indulging in long drawn out rhapsodies where conciser prose would have been more suitable, and introducing many matters that have little or no reference to the subject in hand, as when we are told that the Swedes use Roman letters, and seldom wear spectacles, while "the Germans blind themselves with horrible uncivilised print;" or where Mr. Fergusson is taken to task because his opinions on Scandinavian architecture do not coincide with those of the author. In spite, however, of these defects, the book is interesting, and it is the more valuable just now, when the principles, and more especially the practice, of Linnæus need to be recalled, especially to the long-winded unmethodic botanical authors who render German literature so severe a trial to the student.

As specially interesting to our readers, and as affording good illustrations of the author's style, we append two quotations relating to the famous "Hortus Cliffortianus," near Haarlem:—

"Linnæus was dazzled and captivated by this new experience. Never had he met with a sort of life so tucked in with velvet curtains, such sumptuous appearances of equipage and well-laid table, and everything so rich and bankery: but these things alone would never have tempted him had there not been ample liberty and the garden at command, and unlimited powers given him to use both to the best advantage. He could here cultivate science without restriction. He was truly happy. Hear himself:—'Thus Linnæus moved to Clifford's, where he lived like a prince; had one of the finest gardens in the world under his inspection; with commission to procure all the plants that were wanting in the garden, and such books as were not to be found in the library; and of course enjoyed all the advantages he could wish for in his botanical labours, to which he devoted himself day and night.' His energy had a tremendous impulse now that he was settled and at leisure. He was an excellent companion too. He 'had an immense fund of articulate gaiety in his composition, beautiful light humour,' never flying off into folly, 'yet full of tacit fires which spontaneously illuminated all his best hours.' This, which in his wife was such a charm to even the serious Carlyle, is a good description of the gay gleams which Carl Linnæus flung over a life which other scientific men contrived to render dry as dust. He could throw himself into wildest spirits in off-work hours. He would imitate the contortions, grimaces, and incantations of the Laplanders until his audience thought his acting equal to his science. Clifford felt he could never do enough for a youth who regilt life for him, wreathing it with flowers the while, and bringing back all the best aspirations of his younger days. The golden head brought back summer to the rich man, whose hair was already just flecked with snow, and showed him he still could enjoy 'more, indeed, than at first, when unconscious, the life of a boy.' He loved Carl like a son, and gave him (what Carl most valued) his duplicate dried plants.* Does this seem a bathos? It is really none. Now was Carl's time to bring forward his *Critica Botanica*,† his *Genera Plantarum*, and to commence a fine folio volume called *Hortus Cliffortianus*—a complete catalogue, splendidly illustrated, of the garden at Hartecamp.

"Tulips do not seem to have been of much account at Hartecamp, though I dare say the Admiral Enkhuizen, valued at 4000 florins, the 5000 florin Admiral Liefkenshoek, and the famous Semper Augustus, costing 13,000 florins, displayed their splendour in the conservatory; but the mania of a century before (1636), when Tulip roots passed from hand to hand like bank notes, could never be revived.

"'The Jacobea Lily (Amaryllis formosissima) now first blossoming in Europe, was a gem of the cool greenhouse, and 'Nature herself favoured Linnæus in causing through his diligence and care the fine Plantain tree‡ also to bloom in Holland for the first time, which was looked upon through the whole country as a wonder.§ Even Boerhaave himself came to Hartecamp to get a demonstration of this Musa, described for posterity in the treatise that was afterwards published under the name of *Musa Cliffortiana*, whereby every gardener has been enabled to bring forward its flowers.'‖ Linnæus here acquired great practical knowledge of plants, including Palms, which he called the princes of vegetation.¶ He visited every month the gardens of Amsterdam, Utrecht, and Leyden, but every day that of Hartecamp.** . . .

"The guide-books are wrong in saying it is a waste place or wilderness; though the glory of Hartecamp perished with Clifford it is a fine garden still, with alleys and avenues in all directions, and winding sea-shell-sanded paths by the ornamental water, enlivened by swans and crossed by a fanciful bridge. Bædeker says, 'The beautiful gardens attached to the house have long since disappeared.' He must be either extremely incurious in gardens, or else he visited Hartecamp through an agent. It is a delightful place, not being on such a dead level as the rest of Holland. The house is shut up during half the year, while its owner lives at the Hague.

"In the pleasant deep bay-window of the central ground-floor room, at the back of the house, or on the great balcony above, Linnæus often worked, and looked out upon the lawns and lakelet encircled with great Purple and Copper Beeches, and variegated Horse Chestnuts, which have white leaf-masses near the trunk and thick stems, though the rest is green, being able to suck in the sunshine better from being exposed. The windows command

* *Diary.* † In 1 vol. 8vo. This book is very rare.
‡ Musa paradisiaica. § Stoever.
‖ This tree flowers at Kew Gardens October to December. The fruit begins to set in April.
¶ "Man dwells naturally within the tropics, and lives on the fruit of the Palm tree; he exists in other parts of the world, and there makes shift to feed on corn and flesh."—Linnæus on Palms. "Honour the Date tree, for she is your mother."—Mahomet's Commandment. ** *Diary.*

views through glades right away to the dykes and dunes.

"The flower-border verges are left fringed with wild plants of all sorts, spreading into and embroidering the lush spring lawns. How we enjoy the delicious countrified look of all the plants and trees (we hail from London and Leyden), and having it all to ourselves like this!—for the young gentleman told the gardener to leave us alone to sketch. This civilised verdure—if one may so express it—is enchanting. From the avenue where I sit I see a brilliantly coloured vista of foliage beyond some emerald-green Elms, and one tree all over white blossoms, an Oak with golden-tufted buds, and then an amber-coloured tree, and beyond again a clump of crimson Beeches. The trees all round are grouped with great taste—some of them knew Linnæus; the borders are botanically arranged, as if the Linnæan traditions still held sway. The path leading from the front of the house to the conservatory has a border set amphitheatre-wise with lines of rare plants in sunken pots, sheltered by a Pine grove. The foregrounds are massed with clumps of Gunnera scabra and Lady Fern. The air is full of sounds of birds, the swans float by and halt, and lose themselves again in the thickets. The lawn in front of the house is planted like a park with various trees, well arranged with an eye to colour. The road, itself invisible, crosses the view, so that one can see the picturesque passers-by, who animate the scene at just the distance an artist would set them in his picture; beyond the road the park sweeps upward to a belvedere, high-raised (for Holland, that is) at the end of the vista. An immense oval bed of Roses is spread just before the house."

A Supplement to Bentham and Hooker's "Genera Plantarum."

We recently had the pleasure of announcing the early appearance of a general index to Bentham and Hooker's *Genera Plantarum*, which everybody engaged on botanical work must have hailed with the greatest satisfaction. Quickly following on that we have received the prospectus of a still more important contribution to botanical literature. The first part of Bentham and Hooker's classical work was published just a quarter of a century ago—a long period in the history of a science so young as botany, and one during which botanical collectors and systematic botanists have been exceedingly active. Very many distinctly new genera have been discovered and described in a great variety of publications; and either subdivision or different limitation of a considerable number of old genera has been proposed; hence extensive research beyond the pages of the *Genera Plantarum* is necessary to ascertain whether a genus not described therein has been described elsewhere, or is really new; and botanists distant from large botanical libraries are unable to do this, and therefore are at a great disadvantage. Further, there is the risk of the same genus being published under diverse names by different botanists.

Ever since the publication of the first part of the *Genera Plantarum* it has been the practice at Kew to enter in the names of all new genera with references to the books in which they are described; and the trustees of the Bentham Fund had in contemplation the publication of a supplemental volume embodying these additions, when it came to their knowledge that they had been in a measure anticipated by Dr. Francisco Benecke, of Munich.

In the prospectus before us, issued by Messrs. Borntræger, of Berlin, we are informed that a systematical and alphabetical conspectus of all the genera of flowering plants, Ferns, and Lycopods, published down to the end of 1885, is in preparation, and will shortly appear. In order to render it as useful as possible, Bentham and Hooker's *Genera Plantarum* will be followed as closely as the circumstances will permit. Full synonymy, number of species, place of publication, and geographical distribution of each genus will be given, together with references to the literature relating thereto. Notwithstanding the fact that Benecke's work to some extent forestalls them, it is to be hoped that the Bentham trustees will see their way to bringing together the descriptions of the absolutely new genera, with references to places where new ones have been proposed for certain species of old genera, as this would be a great help to persons working with small libraries.

FUNGUS OF ANEMONE BEDS: PEZIZA TUBEROSA, Bull.

At irregular intervals correspondents of the *Gardeners' Chronicle* send examples of a fungus named Peziza tuberosa, for a name. The fungus always comes from Anemone beds in gardens, and the correspondents invariably say the fungus has killed the Anemones.

The history of this comparatively large fungus is remarkable. Its general appearance is shown at A in the accompanying illustration (fig. 137); it will be observed that the fungi spring from a dark coloured

Fig. 137.—Peziza tuberosa.

body like the rootstock of an Anemone. The fungus grows in the spring; generally, or always, where Anemones grow. In situations where Anemone nemorosa grows the substance from which the fungus springs is so exceedingly like the rootstock of A. nemorosa, that Hedwig has described this part of the fungus as really an Anemone rootstock upon which Peziza tuberosa is parasitic.

But Fries, Sowerby, and Dickson noticed that the substance from which the fungus springs is different from the rootstock of the Anemone. These observers stated the rootstock-like growth to be of fungus nature, and Berkeley stated it to be a Sclerotium, probably S. fungorum var. lacunosum. A Sclerotium, it may be said, is a compact nodule of fungus spawn or mycelium, a kind of fungus rootstock, from which a fungus is destined to spring just as an Anemone is destined to spring from the rootstock of an Anemone. A fungus, named Peziza postuma, springs from a black Sclerotium, or nodule of mycelium, on Potato stems.

Every horticulturist and botanist will consider the fortuitous resemblance of the fungus rootstock to the Anemone rootstock to be remarkable, and the case is made more remarkable by the two bodies growing in close company with each other. To such an extent is the resemblance carried, both in form and colour, that the sharpest observer can sometimes hardly distinguish the rootstock of the Anemone from that of the fungus.

The microscope reveals many things that the unaided eyes cannot see. If a very thin and transparent slice of the rootstock of an Anemone is placed under the microscope and magnified 150 diameters, its cellular structure will be seen as at B. If a corresponding slice of the fungus rootstock be magnified to the same scale, it will be seen as at C; this latter is one mass of involved fungus threads, and in every way different in appearance from the Anemone section.

The fungus reproduces itself by spores. If minute fragments of the inside surface of the fungus cup are placed under the microscope and enlarged 400 diameters, it will be seen that the whole interior of the cup is closely packed with long transparent bladders (asci), as at D, and that each bladder (ascus) contains eight translucent spores, equivalents of seeds, as illustrated. The more slender bladder in the illustration is an abortive ascus; such growths are termed by botanists paraphyses. When this fungus grows in Anemone beds in gardens it does not grow in single examples; it grows in hundreds, or, in large flower-beds, it sometimes appears in thousands of examples: sometimes as many as seventeen specimens of Peziza will grow from one large fungus rootstock.

In the examples of the fungus rootstock as examined by me I have not been strongly reminded of a true Sclerotium; the loose cottony interior has rather reminded me of the loose fungus substance found inside caterpillars which have been destroyed by fungi. For an example of the latter see *Gardeners' Chronicle*, Feb. 26, 1887, p. 289.

Last year Mr. W. Wickham, a Fellow of the Linnean Society, a gentleman acquainted with plants and possessing a large garden, had a bed of double Anemone nemorosa destroyed by this fungus. But the underground growth of the fungus was so exactly like that belonging to the Anemone that Mr. Wickham could see no difference between one and other. Neither could I when I saw some of his examples without my microscope. I say "destroyed" advisedly, for when Mr. Wickham had his Anemone bed dug up no rootstocks were found which did not produce fungi instead of Anemones. He naturally asked what had become of the Anemone rootstocks that he had planted.

On April 28 last a respected correspondent of the *Gardeners' Chronicle* gave his experience of a bed of Anemone apennina. One part of this bed produced Anemones in full bloom, whilst another part was completely covered with and produced nothing but the fungus named Peziza tuberosa.

On digging the fungi up they appeared to be growing from the rootstocks of the Anemones.

The latter examples passsd muster in the *Gardeners' Chronicle* office as veritable Anemone rootstocks and they were sent on to me as such: this fact is mentioned to show that the resemblance of the fungus rootstock to the Anemone rootstock is sometimes sufficiently strong to deceive critical and experienced persons.

This subject evidently requires further investigation. Where and how does the Sclerotium (if it really be a Sclerotium) of the fungus amass its large substance? Apparently amongst Anemones. Is the Sclerotium indebted in any way to the Anemone itself for its formation? Such a state of things seems probable, for the majority of Sclerotia are formed upon and in vegetable substances. Is it possible that for many years a mistake has been made, and the supposed Sclerotium of the Peziza is, after all, the thin and decayed bark of an Anemone rootstock closely packed with fungus mycelium? [We strongly suspect this will prove to be the case. Ed.]

Whatever new facts may come to light the strong resemblance of the Sclerotium of the fungus to the

Anemone rootstock is remarkable. The close companionship or association of the two bodies makes the case still more curious.

One fact is certain: if Anemone rootstocks are harvested in infected gardens, no ordinary observer would be able to distinguish the rootstock of the fungus from that of the Anemone, so that both would be harvested together, and the fungus would be sold and planted in mistake for an Anemone, just as small Ergots are sold for grass seeds, and Ergots of Wheat sold for Wheat itself. The fungus growth appears to be preserved from destruction in gardens by its resemblance to an Anemone rootstock. *Worthington G. Smith, Dunstable.*

TREE FERNS OF NEW ZEALAND.*

Four years ago, while botanising in the high and dry woods near Matamau, I came upon a fine Tree Fern (Cyathea dealbata) whose caudex below was almost wholly surrounded by its former epiphytal foster child—a stout spreading specimen of Panax arboreum, from which, or out of which the Fern Tree luxuriantly grew, as if it were springing from a large vase. On the one side, or rather, speaking correctly, on three sides, the Fern was wholly enclosed, and this was all the more plainly to be seen from the fact of the trunk of the Panax being bare of epiphytal vegetation, so that its light coloured and clean bark showed in strong relief against that of the darker Fern tree in the few narrow interstices on the one side where it still slightly appeared. Another great curiosity was the entire unbroken appearance of the Panax on the one side, which was completely covered; there was no trace discernible of any cicatrices or joinings in its bark, which was even.

The tree or pair so strangely conjoined stood in a small glade or open space among the tall trees of the forest, which, together with the dark green foliage of the very large leaves and sprays of the Panax, half hiding its massy bunches of claret-coloured fruits, and almost forming clumps at the ends of its long slender branchlets, and so presenting a fantastic airy living canopy above and around the delicate and plumy white silvery fronds of the Fern, with the distant blue sky in the background appearing here and there, caused them to be seen to a great advantage; the *tout ensemble* was unusual and charming, and served to bring to mind portions of Ovid's metamorphoses of trees.

Another pleasing thought arose from the consideration of this tree, Panax, in its so clasping and sending out and down its root-like branches (which it never does when growing as a standard tree in its native woods), showing its real natural affinity in habit to those other genera of that same natural order in which it is placed (*e.g.*, Hedera, &c.), which so largely and constantly grows and adheres by their climbing rootlets, and yet the Ivy (Hedera helix) sometimes grows as a standard.

I visited that spot on several occasions during two years, and always with feelings of admiration, and was so much surprised and pleased with my "find," that I made a sketch of it (fig. 138). Such as it is I bring it before you, as by it you may be the better able to know somewhat of the relative sizes and appearances of two curiously entwined and coalesced plants.

I took accurate measurements of this botanical phenomenon, and the following is the result:—

1. Height of caudex of Cyathea from the ground to the springing of the living fronds, 7 feet 6 inches.
2. Height of Panax, about 18 feet.
3. Girth of both taken together at base, 6 feet.
4. At 5 feet 3 inches from the ground the Panax tree forked into two stout, erect main branches.
5. Girth of both plants, under the forking of the Panax, 5 feet 3 inches.
6. Girth of main branch of Panax, 2 feet 10 inches; of the other, 2 feet 3 inches.
7. Girth of Cyathea immediately under its crown of fronds, 5 feet.
8. Breadth of the narrow interstices of the stem of the Fern tree not yet covered by the Panax: at the base, 2 inches; above, in the widest part, 3 inches.
9. The fronds of the Fern extended about 9 feet each way, forming a flattish arch.
10. The lower horizontal branches of the Panax extended nearly equal with the fronds of the Fern.
11. The trunk of the Panax below was quite bare of epiphytal vegetation—only a small young creeping plant of Metrosideros scandens just climbing up at one corner—but above large fronds of Polypodium Billardieri, and other Ferns hung pendulous from between the two upright limbs of the Panax and the Cyathea.
12. The longitudinal edges of the root-like descending lower limbs of the Panax showed exactly the appearance of the bark of a healthy tree from which a limb has been clean cut off growing-in, with thick round advancing margins over the wound. *W. Colenso.*

Fig. 138.—Cyathea dealbata embraced by Panax arboreum.

* An extract from "A few observations on the Tree Ferns of New Zealand, with particular reference to their peculiar epiphytes, their habit and their manner of growth," being a paper read before the Hawke's Bay Philosophical Institute, August 9, 1886.

HOME CORRESPONDENCE.

COVENT GARDEN PRICES.—As a regular reader of your paper I regret lately having seen articles advocating the sale of English fruit and flowers by auction. In the first place it is urged, that if this be done by public sale at 10 o'clock, the grower can check the sale of his goods. To this I answer that all practical men know that the chief buyers, both for London and the provinces, have all finished their purchases by that time, and have taken the goods home, and that the costermonger and other buyers who only buy cheap lots at auctions, would secure the goods at a ruinous price at 10 o'clock. Secondly, the salesman who sells privately to his regular buyer can always get for his senders goods, at least double what is secured by public auction. In fact, this is so well known, that only those who are extremely inexperienced would be so foolish as to send their produce to be sacrificed by auction. It is this inexperienced class that I am anxious to warn against adopting such a course, as such warning is needless to those who have any practical acquaintance with the markets. The price that foreign produce is sold at by auction (often not covering railway expenses) ought to open the eyes of people to the danger of this mode of sale. The foreigners suffer through this, but that is no reason why English growers should likewise suffer. *A. Cattaneo, Salesman, Covent Garden.*

THANATOPHORE.—In answer to "J. M.'s" enquiry about the above I will relate my own experience. It is now about twelve months since I first saw it at work in Mr. Williams' nursery at Holloway, and I was so favourably impressed with what I saw and was told on that occasion that my employer at once procured one; and now, at the end of a year, after carefully testing it, we are convinced that it is a success beyond our expectation. It is an invaluable instrument to the grower of Orchids for the destruction of thrips, being effective and safe. We have tested it on many species of Orchids, and found that the only plant that showed signs of injury was Cœlogyne Massangeana, the flowers of which changed colour. The instrument not only destroys thrips and aphides, but scale likewise. It is instant death to the small white scale that is so troublesome amongst Cypripediums, and I am of opinion that cockroaches are either killed or driven away by it. Before we began the use of the thanatophore it required our constant attention to keep these in check, but since we began its use cockroaches are now seldom seen. These good results can only be attained by using the proper material, and careful working of the instrument. I have heard of failures in its use, and my first enquiry has been what quality was the nicotine used, and I found it was in that that the failure lay. The actual cost of the material used is no doubt slightly above that of tobacco paper, but when the safety of valuable plants and the effectiveness of the work done are taken into consideration the difference in cost is more than counterbalanced. The nicotine employed was that supplied by Mr. B. S. Williams, of Holloway, who is likewise the agent in this country for the instrument. *R. C. Fraser, The Woodlands, Streatham.*

FIGS.—As the young fruits are now beginning to swell the present is a good time to prune Fig trees as the necessary number of young branches of those which are best furnished with embryo fruit to form the trees may be selected; the branches should then be arranged in their proper places on the wall, giving the young shoots a space of from 4 to 6 inches between each other. A large space of wall is covered with Fig trees here, and we always defer pruning until the trees begin to push into leaf. *H. W. Ward, Longford Castle.*

FRUIT CROPS.—There is a prospect of good crops of all kinds of fruits. Peaches, Nectarines, and Plums on walls have set very abundantly, and the trees look well and promising. Standard trees of Plums, Pears, and Cherries are laden with bloom. Apple trees are only just coming into bloom, but look wonderfully promising. Bush fruits and Strawberries look most promising, and show for abundant crop. The dry and fine weather which we have had was most favourable for setting the fruit crop of those trees, and the wood being well ripened last autumn is likely to yield an abundant supply of fruit this season. The cold and frosty nights up to the present have not done any harm to the fruit crop here. We now require a fine warm summer to crown success. *Wm. Smythe, The Gardens, Basing Park, Alton, May* 18.

—— Certainly the bloom on hardy fruit trees so far has escaped sharp or harmful frosts, but frosts are not the only dangers through which the bloom has to pass. We have had some three or four days of fierce wind storms, amounting in places almost to a hurricane, accompanied by very cold rains with occasional falling hail; with this has been heavy cloudy days, during which gleams of sunshine have been but fitful. The wind at the close of last week was so fierce that it tore off almost every remaining petal on Pear, Plum, and Cherry trees, the fruit germs remaining, but whether for a crop it is not yet possible to say. It may presently appear that such violent denudation of the floral portion of the bloom has seriously affected the organs of fertility and that we shall be little the better off because frost has spared us. The Apple bloom, much less advanced, very plentiful, and more rigid, seems not to have suffered in any way. The chief danger, and that at a moment of the greatest importance, seems to lie in the coldness of the weather and absence of sunshine, whilst the strong winds and frequent rainstorms prevent insect activity amongst the blossoms. We are now finding out, with cold so late in the year, how it is that complaints arise as to gradual change of climate,

which affects our gardening work so appreciably. It is not so much the length or severity of the real winter season which we have to dread, but rather the extension of gloom and cold into the early summer months. The month of May has been ungenial, and all Nature is backward. Nothing can compensate us for the gradual shortening of our summers, and we certainly do not find that the heat in the reduced period of summer is any the more intense—on the other hand it seems gradually lessening. *A. D.*

BIRKENHEAD'S CRICKET AND BEETLE TRAPS.—I notice in a late number an answer to "A. H. C." respecting crickets. We have been for years pestered with these fast-breeding destructive insects; not satisfied by feeding upon our Vine, Fig, Melon, and Cucumber leaves, they partook of Cucumbers, forced Strawberries, and Pine-apples, to an extent that we have not unfrequently been disappointed from exhibiting to the public, fruits of the latter which had been selected for that purpose. For a time we thought mice were the culprits, little thinking that so insignificant a looking a creature as a cricket would be audacious enough to attack the "Queen of Fruits," but having confirmed our mistake we tried treacle jars for catching them with considerable success. Within the last year, however, we ascertained there were such articles as Birkenhead's traps; we purchased eight, and with them have weakened the colonies materially, and we hope by perseverance to completely annihilate the cricket from our houses. We have tried various kinds of bait to use in the traps, and have found oatmeal most appreciated. I would advise "A. H. C.," as well as others who are troubled with these loathsome pests, to lose no time in procuring a few of these simple yet excellent traps; they can be had from any of the principal nurserymen. *T. C.*

HYBRID PRIMULAS.—In reference to your note on hybrid Primulas from Saffron Walden on p. 677, my experience is that Primula elatior of Jacquin forms hybrids very readily with some forms of Primula veris in gardens. I have no doubt whatever about the seed-parent of these hybrids. They come up in a year or two wherever I plant P. elatior. They are remarkable for the large size of the umbel and the freedom with which they flower, and in these respects they far surpass the ordinary wild crosses of P. veris, generally called "Oxlips." I enclose specimens; they are nearly over, or I could also have sent red forms of P. elatior resembling the type in all other characters. Many Primroses cross freely here. A few years ago I had spontaneous P. farinosa ×P. scotica, which Mr. Churchill lately told me is very rare. I am sorry to say it has died out, but I think I can easily produce it again. *C. Wolley Dod, Edge Hall.*

MISTLETO.—It may be interesting to many persons to know that within a short distance of Astley Hall the Mistleto is found growing on the following trees:—Common Ash, Mountain Ash, Poplar, White Thorn, and very abundantly on the Apple trees. I had not previously seen it on either of the two former trees, and it is rather unusual. *F. Boorer.*

EARLY SOWING OF TURNIP SEED: THE TURNIP FLY (PHYLLOTERA NEMORUM).—As many of your readers have also charge of farms I should like to ask them if they ever noticed this destructive insect on the young seedlings before the first week of June? I have been a careful observer for several years of my Swede Turnip crops, which I have managed to have in the "rough leaf," and consequently beyond danger, before that time, and never observed it until the present week, which would be about ten days in advance of its appearance hitherto. This I ascribe to the unusually warm dry weather preceding May 23. We had no rain for the previous two months worth noting, during which time the insect prematurely developed from the larvæ. A heavy shower of hail yesterday seemed to have no effect on it. *W. J. Murphy, Clonmel.*

LIMEJUICE.—A great many letters having reached me as to where the limejuice can be obtained, the writer of the article begs to say that the address of the maker is Penton Stower, 86, Harrington Street, Liverpool; but no doubt local chemists could obtain it. *Walter Chitty, Pewsey, Wilts.*

THE WEATHER IN DEVON.—The thermometer at this place registered 6° of frost on the morning of May 21, and 4° on the morning of the following day; sad havoc has in consequence been made amongst the Potato crops in the allotment gardens hereabout; but crops and plants in our garden, which is sheltered from the north and east wind, appear to have escaped unhurt. *J. Mayne, Stowford Lodge, Ivy Bridge.*

BAD GERMINATION OF ONION SEED.—In answer to your correspondent, "Scientific," p. 682, on the germinating quality of Onion seed this year, I never remember mine to have come up better than this year; but I may add that the plants have grown more slowly than usual since they germinated; nor is it to be wondered at, considering the cold weather experienced these last few weeks. Not only Onions, but Parsnips, Carrots, Beet, have been at a standstill. The heavy winds have scattered the flowers of Plums, Pears, and Cherries all over the garden, and which lie on the ground like a fall of snow. The leaves of Strawberries are battered by the wind, and are quite black—truly a nice prospect for a poor fruit grower to contemplate. The varieties of Onions we grow here for market are Bedfordshire Champion and James's Keeping. The seed-bed is on winter-ploughed ground, which was in grand condition for the seed in March, and which was got in early in that month, and every seed appears to have germinated. *Joseph Murdoch, Crew Garden Farm, Kenilworth.*

THE GARDENERS' SELF-HELF SOCIETY.—As almost every journeyman gardener is interested in the formation of the above Society, so ably advocated by "Forester," perhaps you will allow me, on behalf of a few journeymen, with whom I am acquainted in this district, to say how much we have been interested in the discussion carried on in your columns on this subject. We think that "Forester" has clearly made out that such a Society is not only desirable, but that it has every chance of proving eminently successful when once fairly started. Some of us have been in nurseries waiting for situations, and invariably found that so doing was greatly to our disadvantage, as the former practice of head gardeners applying to nurserymen for journeymen is gradually becoming obsolete, perhaps on account of large numbers of young men having been sent out as journeymen who have never worked in private establishments, only having been a few years in a nursery, consequently knowing nothing of the duties which an all-round trained man would acquire in a private garden. The objection put forward by "A. D.," that the payment of a weekly sum might induce some to be less anxious than now to secure a situation, might apply to a few, as unfortunately there will always be some unworthy members in the craft; but I fancy members of the committee of gardeners and foresters would very soon be able to stigmatise such as they deserved, moreover, the dread of being expelled from the Society by their brother gardeners would prove a sufficient deterrent. In conclusion I will only say that we wish the scheme all success, and if many other journeymen gardeners are of the same opinion as ourselves the Society will soon have numerous members, who would only as the very last resource apply to the Society for help, especially during the first years of its existence, in order that it might have time to establish itself upon a firm footing. We are awaiting "Forester's" reply to "A. D.'s" objections with keen interest. *A Journeyman Gardener, Shrewsbury.*

—— "Forester" submits to criticism of his proposals with such kindly grace, that it is a real pleasure to grapple with such an excellent antagonist, if that term may be used in the present instance. He evidently wishes to find a safe basis for his scheme before launching it, and probably also desires to ascertain what are the views of gardeners generally in the matter. Had a similar course been taken by the promoters of some other movements, it is possible that the humiliation of failure would have been spared them. In reply to one of my criticisms in relation to the self-help scheme, "Forester" thinks that a managing committee could soon shape a basis upon which to found a table of contributions, to be safe or solvent. That, I fear, would be beyond the power of any committee to ascertain; indeed, it is indispensable ere any form of membership be floated, that such basis for contributions be obtained first. I am told that similar schemes exist in connection with other professions. It is a pity that some of these have not been named, for if such exist then the needful basis may be found at once. No society could be registered until its tables were shown to be arranged on a sound basis, and, unregistered, it would have no legal standing. The suggestion that, should the original basis prove illusive, a general meeting could form a fresh one, would hardly answer, as changes in the contributions might be rendered needful every year, and members would never be sure what they had to pay. I do not think there is to be found a greater number of idle persons amongst gardeners than among any other similar body of workers; very probably there are not many, but my impression is, that whilst numbers of the best men in the profession would not associate themselves with any such self-help scheme, the most needy amongst gardeners would do so, and their connection would be weakness rather than strength. I have no desire to exaggerate the poverty of gardeners, but rich ones are very rare, whilst the mass are no better off than ordinary mechanics. Each one, too, has his family responsibilities and his local demands to meet; he can now only just honourably pay his way, and further demands come in the form of the straws which break the camel's back. The impression that gardeners are as a body well paid and well off seems to pervade the minds of not a few who know little of the average gardener, or of his wages and expenses. Thus it is that considerable disappointment is being felt in certain quarters in relation to other proposals. Throughout the whole of the gardening profession the tendency at present is to reduce rather than to extend expenditure, therefore all thoughtful men are becoming economical as well as uneasy. As a rule there seems to be enough *esprit de corps* amongst gardeners to induce them to help where temporary help is required in meritorious cases. Friends can distinguish these from improper ones, but a society would have to treat bad and good alike. I do not think it is fair to say that when a man gets a situation after he has been in a nursery for months dependent upon the nurseryman's good nature, and his exertions to secure him the desired place, that he should be denounced or prevented from being under further obligation to the nurseryman for means to reach his new appointment. Of all men I should say that gratitude should lead to the nurseryman being regarded as his kindest friend, and that if business can be put in his way it should be. *A. D.*

FOREIGN CORRESPONDENCE.

NARCISSUS INCOMPARABILIS SEMI-PARTITUS.

In the report of the Narcissus Committee in your issue for May 14 mention is made of a double form of Incomparabilis semi-partitus, presented as an occasional sport by Mr. Ware. I take the liberty to inform you that I have cultivated for some time a double semi-partitus, and which has remained constant for several years, and which I suppose may be considered as well fixed. I send you a flower which, if it is not the same as Mr. Ware's form, may be a similar one. *J. H. Krelage.*

SOCIETIES.

ROYAL HORTICULTURAL.

May 24.—The exhibition on Tuesday last was of small dimensions, but the little quantity was fully redeemed by the good quality of the exhibits. Tree Pæonies, a group of which came from Mr. T. S. Ware, formed an attractive feature, and so did hardy Azaleas from Mr. A. Waterer and others, while a good display was made by Messrs. J. Carter & Co.'s Mimulus. Before the Fruit Committee there were the exhibits of Cucumbers in competition for Suttons' prizes, and a fair amount of fruit and vegetables for inspection. Messrs. J. Veitch & Son contributed much to the interest of the show by their varied collection of plants.

Scientific Committee.

Present:—G. F. Wilson, Esq., in the chair; Messrs. Pascoe, Michael, Murray, Ridley, O'Brien, Smee, Prof. Church, Dr. Lowe, Hon. and Rev. J. T. Boscawen, and Rev. G. Henslow.

Peristeria sp.—Mr. Ridley reported on the two forms exhibited at the last meeting, having discovered no trace of sexual difference; the colouring of the two supposed species being scarcely specific in character.

Plants Exhibited.—Helipterum (Astelma) eximium.

—Dr. Lowe exhibited specimens of this Everlasting, received from Lady Frere, and brought from South Africa. It was introduced into England in 1793 and figured *Bot. Reg.*, t. 582, and the *Journal of Horticulture*, p. 233, March 24, 1881.

Ranunculus cortusæfolius.—A fine plant, nearly 3 feet in height, was sent by Mr. Loder. It is a native of the Canary Islands and Madeira (*Bot. Mag.*, t. 4625). It is said to be hardy, but has not proved to be so at Floore, Weedon. It was remarkable not only for the large size of the golden-yellow flowers, more than 2 inches across, but from the seemingly total absence of the honey-glands at the base of the petals.

Cypripedium arietinum.—Mr. Ware sent a plant of this curious Orchid, figured in the *Bot. Mag.* in the year 1813, t. 1569. It is characterised by the anterior pair of sepals being free instead of coherent as in most species.

Monstrous Flowers.—Calceolaria, double, with the "slipper" repeated, sent by Mr. Veitch, and Primroses with foliaceous sepals free and coherent, also partially coloured, &c., forwarded by Mr. A. Dean.

Floral Committee.

Present: G. F. Wilson, Esq., in the chair; and Messrs. J. Douglas, J. Fraser, W. Wilks, H. Bennett, H. Herbst, R. H. Lowe, G. Duffield, G. Paul, R. Dean, B. Wynne, C. Noble, J. Dominy, H. M. Pollett, C. L. F. Pilcher, T. Baines, J. O'Brien, A. F. Lendy, H. Turner, E. Hill, S. Hibberd, W. Holmes, and J. Hudson.

The interesting collection of Tree Pæonies shown by Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, consisted of well-grown plants, bearing very large flowers, and also single cut blooms. We are pleased to observe the increasing favour with which these flowers are now being received, and in cool-houses they could be employed with success. In the group in question there was a good variety, among which the best were Lactea, a good-sized white flower, one of the best, and very double; Zenobia, rich magenta, well imbricated, a very full and excellent kind; Odorata Maria, blush, very large, were the finest; and other good forms were Athlete, Uranii, Rinzii, Reine Elizabeth, and Madame Stuart Low. (Silver Banksian Medal.) Mr. Ware also contributed a collection of hardy herbaceous plants, including varieties of Primula Sieboldi, Iris germanica, Cypripedium calceolus, and C. montanum, other species of Iris Narcissi, Tulips, Polemonium Richardsoni, &c.

Hardy herbaceous plants were also well shown by Messrs. Paul & Son, Old Nurseries, Cheshunt, their collection containing many interesting plants of, among others, Arnebia echioides, Tiarella cordifolia, Gentiana acaulis, G. bavarica, which should certainly be found on all rockeries; Kalmia glauca, alpine Phloxes, of which there were several, P. Nelsoni being specially attractive; Iberis jucunda, Globularia vulgaris, and a good Trollius—T. napellifolius. (Bronze Banksian Medal.)

Messrs. J. Carter & Co., High Holborn, London, W.C., exhibited a fine lot of their Queen's Prize strain of Mimulus, showing plants which were clean, even, and healthy in appearance, and of good habit, especially one variety called Carter's Jubilee Queen's Prize. As shown the plants were about 5—6 inches in height, each bearing one flower 3 inches across; the colour of the lobes was crimson-brown, with gold edgings, with same colours in the throat, but lighter.

A very pretty group of hardy double Azaleas was sent by Mr. Anthony Waterer, Knap Hill Nursery, Woking, all the plants being heavily laden with flowers and making a good show—Snowflake, a white var., and Peach Blossom, a form having flowers much like those of a Peach in colour, were the best, and hybrid A. mollis, masses of flowers, were also contributed by this exhibitor. (Bronze Banksian Medal.) Mr. Charles Vuylsteke, Loochristy, Ghent, Belgium, also sent similar but smaller plants, A. m. Desbois was a good variety with large crimson-orange flowers.

A seedling show decorative Pelargonium, J. Wood Ingram, came from Messrs. Wood & Ingram, Huntingdon Nurseries, Huntingdon. It is a rich crimson-coloured variety, with the two upper petals darker and heavily marked with black: very effective,

Mr. C. Turner, Slough, also sent a show decorative Pelargonium, Magpie, white, slightly suffused with crimson, and with very heavy blotches on the petals.

Three large plants of Myosotidium nobile, in flower, came from E. G. Loder, Esq. (gr., Mr. Goldsmith), Floore, Weedon. This was fully described in our columns for May 29, 1886, p. 680, where an illustration, taken from Mr. Loder's plant, will also be found. From the same source came a plant of Ranunculus cortusæfolius, a veritable giant Buttercup, growing 3 feet high and highly effective. The flowers remind one forcibly of R. acris, but are 2 inches across. It was stated by the exhibitor that although this plant is said to be hardy it is not so at Floore Gardens.

Orchids were unusually weak, there only being three exhibits, which were as follows:—Odontoglossum Pescatorei, Pollett's var., from H. M. Pollett, Esq., Fernside, Bickley (gr., Mr. Parks), a plant bearing a spike of fifteen flowers prettily and evenly spotted with purple-carmine, and faint rose tips to the segments; Phalænopsis speciosa, from Major-General E. S. Berkeley, Sibbertoft, Market Harborough; and Hexisia bidentata, from F. A. Philbrick, Esq., Q.C., Oldfield, Bickley—a straggly plant, but having bright-coloured little flowers.

From the Society's Gardens, Chiswick, there was sent a plant of the now seldom seen Tropæolum azureum, which, from its delicate blue flowers, ought to be a greater favourite than it is.

Mr. R. Dean, Ealing, showed Polyanthus Snowdrift and P. Governor, masses of fine bloom; and plants of his Royal Blue strain of Cinerarias.

Messrs. J. Veitch & Son, Royal Exotic Nursery, Chelsea, had a large and very interesting lot of various plants. Tree Pæonies were represented by some fine plants, and P. Banieri, a large rose-coloured variety, and P. Isis, semi-double, cherry-red, also fairly large, were excellent; others were Grand Duc de Bude, a good lilac; Uranii, much like Banieri; Rosea superba, like Isis; and Caroline, pale flesh. This firm also sent a basket of Syringa vulgaris Lemoinei fl.-pl., which was certificated in 1884; a basket of Azalea rosæflora (syn. Rollissoni), a pretty dwarf variety with double rose-coloured flowers of good substance—useful for small bouquets. Spiræa confusa was also shown; Abies excelsa mutabilis with its young growth of pale yellow was very attractive. Several good hybrid Azaleas of very delicate colouring were shown; Beauty, pale rose with yellow spotting, and Maiden's Blush, of similar but paler tints (A. mollis × A. occidentalis), were the best. There were also Hydrangea stellata fl.-pl., a thoroughly double form, and having a pretty star-like appearance; Rosa lucida, Rose-button, and Illicium floridanum, an old-fashioned greenhouse plant.

The following First-class Certificates were awarded:—

To Messrs. J. Veitch & Sons, for Abies excelsa mutabilis, with paler new growths than A. excelsa.

To Messrs. J. Veitch & Sons, for Azalea Beauty (hardy), delicate rose and yellow—single.

To Messrs. J. Veitch & Sons, for Azalea Maiden's Blush (hardy), pale rose and yellow—single.

To Mr. A. Waterer, for Azalea Peach Blossom (hardy), pale peach colour—double.

To Mr. A. Waterer, for Azalea Snowflake (hardy), white—double.

To Messrs. J. Carter & Co., for Mimulus Queen's Prize Jubilee, dwarf habit, large flower, crimson-brown with gold edging, throat lighter.

To Mr. H. M. Pollett, for Odontoglossum Pescatorei, Pollett's var., a form with pretty crimson-magenta spots.

To Messrs. J. Veitch & Sons, for Pæonia Moutan Banieri, rose-crimson—double.

To Messrs. J. Veitch & Sons, for Pæonia Moutan Isis, cherry—semi-double.

To Mr. T. S. Ware, for Pæonia Moutan lactea, white, with crimson at the base of the petals—double.

To Mr. T. S. Ware, for Pæonia Moutan odorata Maria, pale flesh, deeper at the base of the petals—very large double.

To Mr. T. S. Ware, for Pæonia Moutan Zenobia, magenta—double.

To Major-General Berkeley, for Phalænopsis speciosa.

To Mr. E. G. Loder, for Ranunculus cortusæfolius.

Fruit Committee.

Present: T. F. Rivers, Esq., in the chair; and Dr. R. Hogg, and Messrs. T. J. Saltmarsh, J. Lee, W. Warren, J. Woodbridge, H. Veitch, G. Goldsmith, G. Norman, J. Willard, S. Ford, T. B. Heywood, R. D. Blackmore, J. Smith, J. Fitt, and P. Crowley.

There was a good competition for the prizes offered by Messrs. Sutton & Sons, Reading, for Cucumbers grown from their seed. The 1st prize was taken by Mr. T. Lockie, gr. to Lord Fitzgerald, Oakley Court Gardens, Windsor, who showed Improved Telegraph—very fine fruits, 2 feet in length; the 2d place being accorded to Mr. C. J. Waite, gr., Glenhurst Garden, Esher, with Sutton's Purley Park Hero—capital large fruits; while J. Downing, Esq., The Shrubbery, Enfield, Middlesex (gr., Mr. P. Cornish), with same variety as 1st, was 3d; the bloom noticeable in the 1st prize fruits was absent from these.

Mr. Lockie also had seedling Melon Beauty of Windsor, a yellow-skinned white-flesh variety, not particularly rich in flavour (Dr. Hogg ×, and Victory of Bristol).

Strawberries came from W. T. Hume-Dick, Esq., Thames Ditton House (gr., Mr. Palmer), showing in good condition Auguste Nicaise, a good-shaped fruit; he also sent Asparagus.

From Mr. E. Ward, Stoke Edith Park Gardens, Ledbury, came Broccoli; and Mr. G. Beaton, The Gardens, Style Hall, Gunnersbury, Middlesex, contributed Pears, most of which were well kept; Suzette de Bavay, Winter Bon Chrétien, and Easter Beurré, were the varieties.

THE INTERNATIONAL EXHIBITION, DRESDEN.

May 7—15.—This exhibition was held on an irregular oblong portion of the Grosser Garten, an old park on the eastern side of the town, between the Lenné Strasse and the Grossen Wirthscraft. The borders of numerous elegant lawns, a nice water basin, and groups of trees were adorned and embordered by many buildings, some of them with Oriental and others with Gothic towers. At the end appeared a building with two towers, the "Haupthalle," behind it were the grounds for trees and shrubs going the way to the Grossen Wirthscraft, and forming a much narrower part. There was a great charm in the dimensions of all the buildings, some of which were very conspicuous. The lawns were enlivened by Magnolias, Conifers, collections of trees, Laurus nobilis cut like Orange trees, Phœnix dactylifera, which made way before the Haupthalle to the flower garden treatment by means of Cinerarias, Myosotis, Viola tricolor, Azalea, Phlox, &c.

The chief objects of Dresden garden industry were predominant; Rhododendrons, Azaleas, Roses, Conifers, were the other chief objects, the Camellias were out of the question by reason of the lateness of the season.

The old firm of T. J. Siedel, Striessen, Dresden, had an excellent extra building for the Rhododendrons only, where they stood arranged with great taste, collected in sorts on a green ground—a lovely sight. The firm is celebrated both for the hardiness of the varieties it grows, and for the wonderful clearness of the colours of the flowers, there being many admirable purple tints without any trace of mauve. The Carola Rhododendrons, dedicated to Her Majesty the Queen Carola, were exhibited in a splendid group of great elegance, and much admired by persons of refined taste.

The Azaleas appeared in dazzling masses; the greatest number being shown by Mr. Richter, Striessen. Of three-year seedlings in flower, Mr. O. Müller, Striessen, had the finest lot of specimens, of which the best were Cœlestine and Schnee. A pity no collection had enjoyed the same amount of attention Mr. T. J. Siedel devoted to his Rhododendrons. Messrs. T. J. Siedel and E. Liebig are both leading men in these beauties, many of which came from other gardens, as from Messrs. Vuylsteke, Loochristy; Vervaene, Ledeberg; Van Houtte, Ghent; Bauer, Bremen.

There were great numbers of Conifers. Those of Messrs. Peter Smith & Co., Begersdorf, have quite the English stamp, perhaps in consequence of the clime; while those of Mr. Mietzsch, Dresden, had the Continental hue, combined with bright health.

Roses were largely exhibited; many fine lots were observed, amidst which we name good groups shown by Mr. Harms, Eimsbüttle; Meitzsch, Dresden; and the Petersburg exhibits of Mr. Freundlich.

Fruit was in great perfection, both Mr. Gaucher, Stuttgart, and Mr. Späth, Rixdorf, Berlin, showing their best. Mr. Gaucher gained the prize of His Majesty the Emperor; his fruit trees appeared stiffer, perhaps more formal, and according to the French system, while Mr. Späth's trees and bushes enjoyed more freedom of growth.

Wonderful Crotons were abundant; those of Baron de Rothschild, Hohenwarte, Vienna, grown by Mr. Joli, were the finest; then came those of Count Hardenberg, grown by Mr. Runtzler.

Aroids took a high place. There was an enormous new hybrid in the way of Anthurium Andreanum,

from Baron de Rothschild, Hohenwarte, grown by Mr. Joli; and a fine dark purple A. Scherzerianum from Mr. Vuylsteke, Loochristy. Some seedlings of Anthurium more than 6 feet high were shown, but without the names of the parents being stated. In some of these the spathe was 8 inches broad and 6 inches in width, the foliage being comparatively as large. A glorious group of old, common, half-forgotten Calla æthiopica, to be proud of, was shown by Mr. Harbold, Striessen, Dresden. Anthurium Sanderianum, sent by Baron de Rothschild, Hohenwarte, was an exceedingly lovely attraction.

Bromeliaceæ were not numerous, yet Messrs. D'Haene, Rischer, Correvitz, and Koehler, Schodningen, had good things. An enormous flowering example of Æchmea Lalinde, came from Mr. D'Haene, Ghent; some charming examples of Bertolonias, Sonerilas, and Anæctochilus came from the same exhibitor; and a beautiful collection of Physurus, Goodyera, and Nerodes came from Mr. Van der Driessche, Ghent, which rivetted the attention of every one. The exhibitor will show these shortly in London. The varieties of Clivia nobilis exhibited by Mr. E. Neubert, Hamburg, were gorgeous in their beauty.

There were numerous Palms, Dracænas, Ferns. We were not, however, struck by any extraordinary things. Mr. B. S. Williams had indeed some good well grown Ferns. His few greenhouse plants, as Darwinia tulipifera, Erica Cavendishi, &c., were grand. A pity there were not more sent. Cyclamens, believed to be the best, were the Dresden plants.

The great charm for the visitors were the Orchids. Numerous exhibitors sent their plants. Mr. Bouché, of Poppelsdorf, Bonn, had an interesting set, including some very well grown Masdevallias. Mr. Vuylsteke, Loochristy, had especially fine plants, divided into various sets, some Odontoglossums of great excellence. Herr Hofmarschall, St. Paul, Fischbach, showed a Lycaste Skinneri with one bulb and fifteen flowers.

The Anæctochiluses of Mr. L. Vandermeulen, Ghent, were beyond all praise. Baron Hruby von Jeleni, Potschkau, Kolin, Bohemia (grower, Mr. Faust), had a glorious collection of the rarest things—immense masses of Masdevallia rosea, Masdevallia Carderi, Phalænopsis violacea, Lælia purpurata of extraordinary beauty, Cattleya nobilis, Skinneri alba, Schilleriana, and lots of other good things. Mr. Williams had a fine collection of Orchids containing a showy Cymbidium Lowianum, good Dendrobium Wardianum, Galeandra Devoniensis, and many other varieties.

A gorgeous sight, no one will ever forget of the many thousands who were entranced by the wonderful *ensemble*, made in the Haupthalle, by Mr. F. Sander, who showed the greatest number of any exhibitor, but whose exhibits as regards quality were inferior to those of Messrs. Vuylsteke and Baron von Hruby, an amateur. An immense mass of Odontoglossum crispum and its supposed mules, polyxanthum, luteo-purpureum, triumphans, Pescatorei, Rossi, citrosmum was broken up by numbers of the finest Cattleyas and Lælias, amidst which C. Mendelii and C. Lawrenceana were conspicuous. Numerous fine Dendrobia (amidst which glorious Dearei), Cypripedia, Angræcum Scottianum and others, were the gems of a collection that alone would have repaid a trip to Dresden: there were also numerous good plants of Masdevallias. The finest, however, belonged to the Baroness de Rothschild, Frankfurt, amongst them a rich mass of Masdevallia triangularis with an immense quantity of flowers.

Mrs. Sander had the honour of presenting to Her Majesty the Queen an extraordinary bouquet of Orchids, brought over to the villa of their Majesties at Strehlen, when Mr. Sander had the honour of being received privately. [Previously stated by us on p. 646.] The great prize of Her Majesty the Empress was awarded to Mr. F. Sander, as well as a Saxon mark of honour.

There were innumerable objects of industry, bouquets, optical instruments by the celebrated Paul Wachter, Berlin, and others; apparatus, berry wines, books and plans. The School of Horticulture at Bautzen, exhibited a complete apparatus of instruction, such as herbaria, plant-analyses, &c. No lack of anything one sees at any exhibition. As usual numerous industrial exhibitors tormented the jurors with protestations; and the gardeners came forward very well.

The leading man was Mr. T. J. Siedel, who originated the idea, and understood how to bring it to a great success, assisted by his excellent sons, by Mr. E. Liebig, Mr. Bertram, the landscape gardener; these favoured by Herr Oberbürgermeister Stübel and His Excellency Herr von Nostitz-Wallich, Minister of the Interior, and the Court.

The patronage of His Majesty King Albert was not a vain word, but an earnest fact. The zealous participation of the Court, the great labours of the commission, the exhibitors, the jury, the delegates, were the initiation of a new period for horticulture. There is now as sympathetic a feeling from the highest to the lowest for gardening and gardeners as in Belgium, as such amiable exhibitors as Messrs. D'Haene and Vuylsteke fully testify. To see commissioners, exhibitors, jurors, and delegates dining at the King's table—our venerable Regel at the side of Her Majesty the Queen Carola—was a new and great satisfaction.

The Minister of the Court and the Interior, Herr von Nostitz-Wallich, received nearly the same assembly, amidst which we noted Herr Hoffgartendirector Krause, who has so great merit for the improvements of the Royal Garden, and Herr Gartendirector Bouché, of the Grosser Garten, the worthy son of our late Berlin celebrity.

There was but one feeling of happiness and thanks felt by all. This feeling was expressed in many ways. one of the best and most frequent a serenade with Italian *lampions*, offered to the Siedel family at their villa at Strehlen. The enthusiasm was nearly Hungarian.

May these few lines be regarded as notes, not intended as a complete relation. One thing is sure—the Dresden Exhibition was an uncommon festival for soul and heart—a great success, whose consequences will be felt for many years.

Of novelties may be mentioned Gymnogramma Scherzophylla gloriosa, shown by Messrs. Lambert & Sons, Trier, a plant of great merit; Primula chinense Feronia, a double rose coloured variety of the fimbriata type: exhibitor, Mr. Mietzsch, Dresden. Another novelty is Myosotis palustris: fol. var. Sensation, shown by Mr. Engelhart, Striessen Latania borbonica fol. var., a pendant to Rhaphis flabelliformis fol. var., which has been known in gardens for some considerable time, shown by Messrs. Meyer & Sons, Celle, Hanover. Amongst Azalea indica, showing fine form in the flower, clearness and intensity of colouring, together with floriferousness, may be mentioned Juliette, La Superbe, Dame Melanie, Marie Lefevere, shown by Mr. D'Haene; Prinz Ludwig von Bayern, Phœbus and Gertrude, Monsieur Paul de Schuyver, shown by Mr. Emil Liebig, Planenwitz.

THE CRYSTAL PALACE SHOW: May 21.

Open Classes.—A capital exhibition of plants, stove and greenhouse, Orchids, Roses, &c., was got together at the Crystal Palace on the above date. As caterers for the public primarily the managers are always on the alert to make such changes in their show arrangements as have the zest of novelty, or is conducive to the convenience of the visitor, and to this desire on the part of the Palace officials is due the general distribution of the horticultural objects of competition over more than one half the area of the nave, which gave all the opportunity to examine everything without the vexatious crowding we have often had to deplore.

In greenhouse plants, nine, distinct, in bloom, the 1st prize was taken by the veteran prizeman, Mr. W. Chapman, gr. to J. Spode, Esq., Hawkesyard, Rugeley, the plants being of the usual sorts—Tremandra ericæfolia and the two Ixoras, Dixiana and Williamsii, being very excellent examples. Mr. Henry James, Lower Norwood, took the 2d prize with plants previously seen at the last Botanic Gardens show, an Anthurium Wardianum, with twenty spathes, and Boronia pinnata, being fine plants, the former showing signs of travel.

Mr. C. Turner, Slough, was worthily placed 1st for Indian Azaleas, showing nine distinct kinds, finely flowered, but formally trained—Cordon Bleu, Grandis, Charmer, and Duc de Nassau, being beautiful objects, and all were full of bloom, and fresh; Mr. H. James took 2d place with a fresh collection.

In the class for nine Ericas Mr. H. James took 1st honours, his plant of E. ventricosa being an excellent sample of Heath growing; there were three yellow Erica, in the group, which we think marred that effect—these being affinis, Cavendishi, and depressa.

Mr. T. H. Penfold, gr., Beddington House, Croydon, took the 1st prize for the best nine foliage plants—Phyllotænium Lindeni, Alocasia Veitchi, Carludovica Drudei, being the best. Mr. H. James came in 2d, his plants of Dieffenbachia Jenmanni and Panax Victoriæ being very good specimens. Mr. Penfold won the 1st prize for indoor Ferns: good, well grown, and full of fronds were all of them, but especially Lomaria cycadæfolia, Microlepia hirta, two Davallias, and Lastrea laserpitifolia, of a beautiful dark green, with a very dense habit. The 2d prize fell to Mr. J. Bolton, gr., Combe Bank, Sevenoaks whose plants were of a medium handy size.

For the best nine distinct species of Orchids Mr. Catt, gr. to W. Cobb, Esq., Silverdale Lodge, Sydenham, was 1st. The group contained a fine large Miltonia vexillaria, 2½ feet in diameter; Cœlogyne Massangeana with two racemes, Cattleya Mendelii of superb quality, Masdevallia Harryana, Dawson's variety, of an undescribably rich colouring. The 2d prize was awarded to Mr. F. Hill, gr. to H. Little, Esq., East Twickenham, who had fine examples of Odontoglossum Pescatorei, Cattleya Skinneri oculata, C. Mendelii. &c.

The prizes for nine distinct Crotons were competed for by Mr. J. R. Bird, gr. to J. A. Causton, Esq., Lodgemore, Dulwich; Mr. H. James, and Messrs. Hooper & Co., nurserymen, Twickenham, and who took the prizes in the above order; Mrs. Swan, a narrow-leaved pendant kind, green with yellow stripes running lengthwise, was the only novelty.

Mr. J. Lambert, gr. to H. W. Selegcke, Esq., Elfindale Lodge, Herne Hill, was the exhibitor of the best nine Dracænas, Lindeni, Gladstonei, and Anerleyensis, being the newest and handsomest.

In Caladiums, Messrs. J. Laing & Co., Stanstead Nurseries, who are as yet unapproached in their culture of these plants, were placed 1st for nine kinds, of which the most distinct and showiest were Leopold Robert Fritz Koechlin, Mithridate, and Clio. Mr. C. Simmonds, gr. to F. W. Wiltshire, Esq., South Norwood, took the 2d place, with younger and well chosen kinds.

Mr. C. Turner, Mr. D. Phillips, Langley Broom, Slough, and Mr. Wiggins, gr. to W. Clay, Esq., Kingston, took the prizes for nine show and decorative Pelargoniums, in the order of their names. The names of the exhibitors are sufficient guarantee of the fine quality of the plants. Mr. C. Turner took the only prize awarded for fancy varieties.

Gloxinias were shown in several lots, the 1st prize being awarded to Mr. Luff, gr. to R. R. Hyatt, Esq., Hethurst, Streatham; these were of the large crassifolia type, that does not produce so large a number of blooms at one time as the smaller-leaved section. Mr. Wakeham, gr. to H. Barrett, Esq., North Dulwich, took the 2d place.

In a larger class than that previously noted, Mr. C. Turner took the only prize, a 1st, for eighteen greenhouse Azaleas in not less than twelve varieties, and in pots not exceeding 9 inches.

Roses in Pots.—Three collections of eighteen plants were staged, and they made a fine display on the floor immediately in front of the great orchestra; they were all very good. Messrs. Paul & Son, The Old Nurseries, Cheshunt, had the freshest plants—nice medium-sized specimens, the leading varieties being—H.P.'s: Madame Lacharme, Beauty of Waltham, Marguerite de Roman, Violette Bruyere, Merveille de Lyon, Marquis de Castellane, Camille Bernardin, Mdlle. Julie Gaulain; Teas: Francisca Kruger, Madame Margottin; and Bourbon: Charles Lawson. 2d, Mr. C. Turner, Royal Nursery, Slough, with—H.P.'s: Camille Bernardin, Comtesse de Sereneye, Royal Standard, La France, Edward Morren, Marie Baumann, Madame Lacharme, Madame Victor Verdier, and Sir Garnet Wolseley; and Teas: Celine Forestier and Madame Margottin. 3d, Mr. W. Rumsey, Joyning's Nursery, Waltham Cross.

Calceolarias.—These made a charming display, and afforded very fine patches of colour. Mr. James, Woodside, Farnham Royal, was 1st, with an excellent lot of plants, bright self-colours predominating, and the quality of the flowers being very high; 2d, Mr. C. J. Salter, gr. to J. Southgate, Esq., Streatham.

Plants for table decoration were numerously shown; they came very close together, and the judges must have had some trouble in making their awards. Messrs. Hooper & Co., nurserymen, Twickenham, were 1st; Mr. J. Hudson, gr. to H. J. Atkinson, Esq., J.P., Gunnersbury House, Acton: and Messrs. J. Laing & Co., Stanstead Park Nursery, Forest Hill, were placed equal 2d. The plants consisted of Crotons, Dracænas, Aralias, Pandanus, &c.

In the class for Pelargoniums, eighteen plants of the show and decorative types, Mr. C. Turner was 1st with some charming plants, capitally flowered,

the leading varieties being Czar, Gold Mine, Edward Perkins, Alice, Martial, &c.; 2d, Mr. D. Phillips, Langley Broom, Slough, whose best varieties were Thistle, Zoe, Sappho, and Kingston Beauty.

Groups of plants arranged for effect also were a conspicuous feature in the nave; Messrs. J. Laing & Co. were 1st, Messrs. Hooper & Co., 2d; and Mr. H. James, 3d. Palms, Azaleas, Caladiums, Crotons, &c., were used with flowering plants with excellent effect in Messrs, Laing's case. Some of their very fine Begonias were prominent.

Specimens.

Orchids.—Mr. H. James was 1st, with a fine piece of Lælia purpurata; Mr. F. J. Hill, gr. to H. Little, Esq., Twickenham, being 2d with a very fine specimen of Cattleya Skinneri; and Mr. A. F. Catt, gr. to W. Cobb, Esq., Sydenham, with Odontoglossum Alexandræ.

Stove Plants.—In this class, Mr. J. Wakeman, gr. to H. Barrett, Esq., North Dulwich, was 1st with a fine piece of Clerodendron Balfourianum; Mr. W. Chapman, gr. to J. Spode, Esq., Hawksyard Park, Rugeley, being 2d, with a fine Ixora Dixiana; and Mr. James, 3d with a large Anthurium Scherzerianum.

Greenhouse Plants.—Mr. James was 1st with a huge Erica Cavendishiana; and Mr. W. Chapman 2d, with Aphelexis rupestris grandiflora.

Fine-foliaged Plants.—Here Mr. J. Lambert, gr. to H. W. Selegcke, Esq., Herne Hill, was 1st, with a fine Alsophila australis; and Mr. J. R. Bird, gr. to J. R. Causton, Esq., Dulwich, 2d, with Croton pictum.

Nepenthes and Sarracenias.—Of these two interesting collections of eighteen plants were staged; the best by Mr. Henry James, Castle Street, Lower Norwood; 2d, Mr. A. Luff, gr. to R. Hyatt, Esq., Streatham. The same exhibitors were 1st and 2d, with twelve Sarracenias, small specimens, but interesting in character.

Groups of Orchids.—Several of these were shown arranged on oblong tables along the nave. The best came from Mr. H. Simkins, gr. to R. J. Measures, Esq., Flodden Road, Camberwell, who had nice examples of Lælias, Oncidiums, Odontoglossums, Cattleyas, Masdevallias, Aërides, &c., mingled in a very tasteful manner with Palms, Ferns, Crotons, &c.; 2d, Mr. C. J. Salter, with a good group also.

Amateur Classes.

Stove and Greenhouse Plants.—In the class for six specimens Mr. W. Chapman was 1st, with excellent examples of the usual kinds shown. Mr. Offer was the only exhibitor of six specimens of Azaleas.

Orchids.—The best six specimens came from Mr. A. J. Catt; 2d, Mr. Hill; 3d, Mr. A. Luff, gr. to R. R. Hyatt, Esq., Streatham.

Pelargoniums.—The best six of the show type came from Mr. F. J. Hill, who was the only exhibitor, the varieties similar to those shown by him at the Regent's Park. The best six fancies came from Mr. D. Phillips, Mr. Hill being 2d. Here also the same varieties were shown as at the Royal Botanic Society's show.

Roses.—Mr. G. Kinson, gr. to L. Ludon, Esq., Claremont, West Dulwich, was the only exhibitor, staging fairly good specimens.

Calceolarias.—Four groups of twelve nice plants, dwarf, clean, and well grown, were staged. Mr. C. J. Salter was 1st, and Mr. J. A. Ford, gr. to D. C. Thomas, Esq., Muswell Hill, N., 2d.

Fine-foliaged Plants.—In this class Mr. W. King, gr. to P. Crowley, Esq., Wadden House, Croydon, was 1st, staging fine examples of Areca lutescens, Anthurium Warocqueanum, and A. crystallinum; 2d, Mr. A. Offer, with Phœnix reclinata, Croton Hendersoni, C. pictum, and Dasylirion acrotrichum.

Ferns.—Mr. J. Bolton had the best six. Cut flowers, Epergnes, table decorations were numerously shown, and created much interest amongst the visitors.

PRESTON AND FULWOOD HORTICULTURAL.

The members of the above Society met together on Saturday evening, the 14th inst., at the "Legs of Man" Hotel, when Mr. J. Atherton (Hon. Secretary) presented the ninth annual report, which was of a very satisfactory character. The spring show, held on March 17 and 18, was well attended. The exhibits were numerous and of a meritorious character, and so well were the prizes competed for in the several collections of groups for effect that it was a matter of difficulty with the committee to find space for all the groups that were brought. The report concluded with an expression of thanks to the Mayor of Preston, also the Chairman and Vice-Chairman of the Parks Committee for the permission given to their Curator, Mr. G. Rowbotham, to stage a collection of flowering and fine-foliage plants that added much to the interest of the show. The balance-sheet as presented by J. P. Dixon, the Treasurer, showed also that the finances were in an equally satifactory and sound condition. The year commenced with a balance of £8 7*s.* 9½*d.*, the subscriptions amounted to £95 12*s.* 6*d.*; entrance to the exhibition (two ways), £45 1*s.* 1*d.*: these amounts with other sundries made the total receipts £156 19*s.* 2½*d.* The expenditure amounted to £142 4*s.* 11*d.*, which included £71 17*s.* 9*d.* paid for prize money, and £12 2*s.* for the band of the Gloucester Regiment, stationed at Preston. Other items, such as printing, advertising, &c., brought the total to the amount stated. The balance in the Treasurer's hand was £14 14*s.* 3½*d.* On the motion of Mr. Waters, seconded by Mr. Parker, the report and balance-sheet were adopted.

At the close of the business some discussion took place on several plants, flowers, and fruit brought by the members. The Hon. Secretary had some plants of Hydrangea hortensis in small pots with immense heads of bloom. These had been grown in the immediate vicinity of Preston, and were much admired. A few Orchids were also named, and some remarks made upon them. The most praiseworthy exhibit was that of Mr. A. Waters, gr. to J. Eccles, Esq., Ffarington House, Preston, who had brought two bunches of black Grapes, both of which were examples of excellent culture. One was a bunch of Lady Downe's that was perfectly ripe with many other such bunches last October. A good number of the bunches were used during the autumn and winter, being cut direct from the canes; in the third week of January the remaining bunches were taken off, placed in bottles, and stood in a moderately cool fruit-room to which a fair amount of light was admitted. Here the bunches kept well, being free from mildew or rotting, so that by the middle of the present month the last bunches were still fit for the table, the berries plump, sound, and of capital colour. By the side of this long-ripened cluster was a capital bunch of Black Hamburgh, now just ripe and fit for use; this was excellent, the berries large, and of a deep black colour, with fine bloom on them. The Vine whence these Grapes were cut, was started in the middle of last November; it has three canes, and is now ripening thirty-three bunches. It is an indication of good cultivation to get Grapes fit for use thus early in the season, and when presented with a bunch of Lady Downe's, ripe last October, it certainly deserves recognition. A vote of thanks was given to Mr. Waters, who, in his reply, gave a short statement of his method of culture, stating that he had closely followed the advice and directions he had himself submitted to the members of the Society when last autumn he read a paper on Vines and Vine culture.

THE WEATHER.

THE PAST WEEK.

The following summary record of the weather for the week ending May 23, is furnished from the Meteorological Office:—

"The *weather* has been in a very changeable and unseasonable condition in all parts of the kingdom Heavy squalls of cold rain, hail, or sleet have been very prevalent; at several of our more southern stations they were accompanied by thunder and lightning.

"The *temperature* has been considerably below the mean in all districts, the deficit ranging from 3° in the east and west of Scotland, and the north-east of England, to as much as 6° in 'England, E.' The highest of the maxima, which were generally recorded either on the 17th or 23d, varied from 57° in the 'Channel Islands,' to 68° in 'Scotland, E.,' and 71° in the 'Midland Counties.' On most days the maxima were much lower than these readings; at Cambridge during a thunderstorm on Saturday the temperature at 2 P.M. fell to 37° The lowest of the minima, which were registered towards the end of the period, varied from 28° in 'Scotland, E.,' to 36° in 'Ireland, S.,' and 41° in the 'Channel Islands.' Some sharp ground frosts were experienced at most of the inland stations.

"The *rainfall* has been more than the mean in all districts, the excess in the west and north-west being rather large.

"*Bright sunshine* has been less prevalent generally than it was last week, the percentage of the possible amount of duration ranging from 12 in 'Scotland, N.,' to 36° in 'Scotland, E.,' and to 50° in the 'Channel Islands.'"

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 32° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature.				
		Accumulated.			
	Above or below the Mean for the week ending May 23.	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 4, 1887.	Below 42° difference from Mean since Jan. 4, 1887.
Principal Wheat-producing Districts.		Day-deg.	Day-deg.	Day-deg.	Day-deg.
0. Scotland, N. ...	4 below	29	13	+ 47	+ 42
1. Scotland, E. ...	3 below	48	10	+ 67	+ 42
2. England, N.E. ...	3 below	39	2	— 18	+ 82
3. England, E. ...	6 below	42	8	— 124	+ 169
4. Midland Cos. ...	4 below	47	4	— 106	+ 167
5. England, S. ...	5 below	45	0	— 116	+ 151
Principal Grazing, &c., Districts.					
6. Scotland, W. ...	3 below	39	5	— 18	+ 47
7. England, N.W. ...	5 below	37	2	— 90	+ 118
8. England, S.W. ...	4 below	48	0	— 104	+ 172
9. Ireland, N. ...	5 below	38	3	+ 1	+ 24
10. Ireland, S. ...	4 below	49	0	— 30	+ 97
— Channel Islands	4 below	57	0	— 168	+ 77

Districts.	Rainfall.			Bright Sunshine.	
	More or less than the Mean for the Week.	No. of Rainy Days since Jan. 4, 1887.	Total Fall since Jan. 4, 1887.	Percentage of possible duration for the Week.	Percentage of possible Duration since Jan. 4, 1887.
Principal Wheat-producing Districts.	Tenths of Inch.		Ins.		
0. Scotland, N. ...	4 more	87	16.0	12	22
1. Scotland, E. ...	4 more	65	8.0	36	32
2. England, N.E. ...	5 more	63	5.9	26	31
3. England, E. ...	3 more	58	6.6	19	36
4. Midland Cos. ...	2 more	56	6.4	26	31
5. England, S. ...	2 more	57	6.8	30	34
Principal Grazing, &c., Districts.					
6. Scotland, W. ...	8 more	70	14.4	35	32
7. England, N.W. ...	8 more	58	8.9	33	33
8. England, S.W. ...	2 more	59	8.2	42	42
9. Ireland, N. ...	8 more	68	10.8	25	32
10. Ireland, S. ...	3 more	59	10.2	29	40
— Channel Islands	1 more	66	7.2	50	47

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING JUNE 4. (AVERAGE OF THIRTY-THREE YEARS.)

May 29	57°.5	June 2	58°.6
,, 30	57°.9	,, 3	58°.8
,, 31	58°.1	,, 4	59°.2
June 1	58°.4	Mean for the week ...	58°.4

Dr. W. G. Grace.—Messrs. Iliffe & Son, of 98, Fleet Street, E.C., are issuing a biography of Dr. W. G. Grace, the cricketer, by Mr. W. Methven Brownlee. The work contains an interesting account of the past and present generations of the Grace family, and of Dr. Grace's cricketing exploits at home, in the Colonies, and the United States.

Enquiries.

"He that questioneth much shall learn much."—Bacon.

Young Vines on Old Borders.—In my vinery are eleven canes, seven of which are young ones, and which have been planted in the old border; when planted a little new soil was used around their roots, and for a few years they grew vigorously. But as soon as the roots began to push into the old material of the border the canes gradually declined in health, and now carry poor fruit; whereas the four old canes grow well, and produce fine fruit. Can any of your readers recommend me a way to improve the young canes without pulling them out or disturbing the old canes? I am aware that it was a foolish plan to plant young canes where old ones had been, but that was done before I came to the place. *J. W. T.*

Cannon Hall Muscat and Black Morocco Grapes.—Can any of your readers supply a flowering bunch of either or both of Cannon Hall Muscat and Black Morocco Grapes, to be forwarded to Mr. A. F. Barron, Royal Horticultural Society's Garden, Chiswick?

Notices to Correspondents.

Calanthes: *J. M.* See p. 704, this issue.

Chrysanthemum Mrs. Mary Moon: *J. F. S.* It is a good enough yellow flower, but Chrysanthemums in May are wanted by no one.

Dendrobium: *E. Berkeley.* It is a typical Dendrobium lituiflorum; D. Freemani differs from it in having larger and darker flowers.

Emigration: *Faithful Knifeman.* Any of the older settled parts of Canada, or in Nova Scotia, in which latter colony there are openings for practical fruit growers.

Insects: *F. and A. D.* Your Holly leaves are blotched by the small mining larva (which eat the parenchyma leaving the two surfaces of the leaves entire), which are the offspring of a little two-winged fly, Phytomyza Ilicis, described and figured by "Ruricola" in *Gardeners' Chronicle*, 1846, p. 444, *I. O. W.*

Leaves of Gesnera: *W. H.* We fail to detect anything on them, but they have all the appearances of having been exposed to a hot sun. These plants must always be shaded from the direct rays of the sun.

Mushrooms: *W. C.* We do not detect any *freak of Nature*, as you call it, and think you must have intended the perpetration of a joke.

Names of Plants: *F. C.* Ornithogalum nutans. — *G. Paton.* Narcissus incomparabilis aurantiacus.—*C. E. F.* Crepis biennis.—*R.* Saxifraga pennsylvanica; Oxalis stricta.—*T. E.* Gaultheria procumbens.—*B. S. B.* 1, Rhododendron Edgeworthi, probably, but cannot say without foliage; 2, Pteris longifolia; 3, Polypodium vulgare cambricum; 4, Olearia Haastii.—*E. Cockbile.* Dendrobium calciolus; Brassia verrucosa. — *G. C.* 1, Ligustrum lucidum; 2, Jasminum revolutum; 3, Lonicera brachypoda; 4, L. tartarica; 5, Rosa (insufficient specimen); 6, Eriobotrya japonica (Loquat); 7, insufficient specimen; 8, Pittosporum undulatum; 9, Cornus mas. Certainly save the Alyssum if you want it, but it is common enough.

Nerium Oleander Shedding its Foliage and Flower-buds: *G. H. T.* This will happen when not enough warmth and light are afforded in the early summer. It is a plant that requires the fullest amount of sun-heat during the growing and flowering period, together with abundance of water, and when the pots or tubs are full of roots some fertiliser should be employed as aid to growth. In the winter water should be given but rarely, and the plants at that season ought to be kept as cool as possible short of the freezing-point.

Peach Trees in a Peach-house and Green-fly: *H. C.* The trees on the wall were in a warmer position, and grew away more freely than those trained close to the glass which were in a colder one; and the fly has a preference for foliage and shoots whose growth is arrested from any cause. Get rid of them by fumigation with tobacco-rag or paper, or by syringing with tobacco-water diluted with one-half to three-quarters of pure water.

Polygonum Sieboldi: *A. P.* As was stated in an answer to a correspondent in our last issue, the young shoots are edible, and we should suppose that the method you propose to produce tender shoots—that is, by forcing the roots in heat—would have the effect of making the shoots less nauseous.

Seedling Potato from Champion: *J. Hughes.* The Potato boiled well, and was mealy and well flavoured.

Vines: *Vine.* The leaves seem to be those of Vines growing in an impoverished border, for they are very thin, and relatively small. You may also be doing harm to the Vines by cropping too heavily.

Woodlice in Frames: *G. B.* You will find scalding water poured into their haunts, and traps of hay placed in pots, which should be cleared daily, the best means to rid your frames of these creatures.

CATALOGUES RECEIVED.

Lucombe, Pince & Co., Exeter Nursery, Exeter—Stove, Greenhouse, and Hardy Plants.

Thomas Painter, Smallwood, near Scholar Green, Stoke-on-Trent—Dahlias.

Kent & Brydon, Darlington—Florists' Flowers and Bedding Plants.

Wood & Ingram, The Nurseries, Huntingdon—Bedding Plants, &c.

E. P. Dixon, 57, Queen Street, Hull—Chrysanthemums.

Communications Received.—E. M. (will answer shortly).—Maple & Co.—H. H. D'O.—F. J. H.—E. Camus.—A. M.—C. J. C.—W. W.—M. P. Andersen.—Scot.—H. Correvon.—B.—M. T. M.—J. R. J.—R. McLachlan (will answer shortly).—E. S. Berkeley.—A. D. W.—R. D.—W. B. & S.—E. C.—J. C. & Co.—J. G. B.—C. W. D.—R. H. S.—J. O'B.—W. S. M.—D.—G. E. R.—G. H.—Laughton & Darkin.—C. I. (thanks). W. G. S.—I. Z.—G. Hansen.—C. J., Paris.—R. Lindsay.

Markets.

COVENT GARDEN, May 26.

Business has been brisk during the week, but will quiet down again with the holidays. Better supplies. *James Webber, Wholesale Apple Market.*

Fruit.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Apple, ½-sieve	1 6– 5 0	Melons, each	2 6– 4 0
— Nova Scotia, brl.	8 0–12 0	Peaches, dozen	12 0–21 0
Grapes, per lb.	3 0– 5 0	Pine-apples, Eng., lb.	1 0– 1 6
— Channel Isl., lb.	2 6– 3 6	— St. Michael. each	3 0– 8 0
Kent Cobs, 100 lb.	60 0– ...	Strawberries, per lb.	3 0– 6 0
Lemons, per case	12 0–21 0		

Vegetables—Average Retail Prices.

	s. d. s. d.		s. d. s. d.
Artichokes, per doz.	4 0– ...	Lettuce, Cos., Fr., each	0 6– ...
Asparagus, French, per bundle	2 0– 6 0	Mushrooms, punnet	1 6– 2 0
— English, per 100	5 0– ...	Mustard and Cress, punnet	0 4– ...
Beans, Kidney, lb.	2 0– ...	Onions, per bushel	4 0– ...
Beet, red, per dozen	1 0– 2 0	Parsley, per bunch	0 6– ...
Carrots, per bunch	0 6– ...	Peas, per quart	4 0– ...
Cauliflowers, per dozen	3 0– ...	Potatos, per cwt.	4 0– 5 0
Celery, per bundle	1 6– 2 0	,, kidney, per cwt.	4 0– 5 0
Cucumbers, each	0 6– 1 0	Rhubarb, per bundle	0 6– ...
Endive, per dozen	3 0– ...	Seakale, per punnet	2 6– ...
Green Mint, bunch	0 6– ...	Shallots, per lb.	0 3– ...
Herbs, per bunch	0 4– ...	Spinach, per bushel	4 0– ...
Leeks, per bunch	0 3– ...	Sprue, bundle	1 0– ...
Lettuce, per dozen	1 6– 2 0	Tomatos, per lb.	2 6– ...
		Turnips, new, bunch	1 0– ...

Potatos.—Old samples very much advanced in price. Regents, 140*s.*; Magnums, 150*s.*; Champions, 100*s.* per ton. Jersey Rounds (new), 4*d.* per lb.; Maltese, 20*s.* per cwt.

Plants in Pots.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz.	6 0–18 0	Fuchsias, doz.	4 0–12 0
Arum Lilies, dozen	9 0–12 0	Hydrangeas, doz.	9 0–12 0
Azaleas, per dozen	18 0–30 0	Lilium longiflorum, per dozen	24 0–36 0
Cinerarias, per doz.	6 0– 9 0	Lily-of-Val., 12 pots	12 0–18 0
Cyperus, per dozen	4 0–12 0	Lobelias, dozen	4 0– 6 0
Dracæna terminalis, per dozen	30 0–60 0	Marguerite Daisy, per dozen	6 0–12 0
— viridis, per doz.	9 0–24 0	Mignonette, doz.	6 0– 9 0
Erica, various, per dozen	18 0–30 0	Musk, per dozen	3 0– 6 0
Euonymus, in var., per dozen	6 0–18 0	Myrtles, per dozen	6 0–12 0
Evergreens, in var., per dozen	6 0–24 0	Palms, in var., each	2 6–21 0
Fairy Roses, doz.	8 0–12 0	Pelargoniums, dozen	6 0–18 0
Ferns, in variety, per dozen	4 0–18 0	— scarlet, per doz.	4 0– 8 0
Ficus elastica, each	1 6– 7 0	— Ivy-leaved, doz.	4 0– 6 0
Foliage plants, various, each	2 0–10 0	Rhodanthe, dozen	6 0– 9 0
		Roses, various, per dozen	18 0–30 0
		Spiræa, per dozen	9 0–12 0

Cut Flowers.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Abutilons, 12 bun	2 0– 4 0	Narcissus, 12 bun.	1 0– 3 0
Anemone, 12 bun.	2 0– 4 0	— double, 12 bun.	5 0– 8 0
Arum Lilies, 12 blms.	3 0– 5 0	Pansies, 12 bunches	2 0– 3 0
Azaleas, 12 sprays	0 6– 0 9	Pelargoniums, 12 spr.	0 6– 1 0
Bouvardias, per bun.	0 6– 1 0	Primroses, 12 bun.	0 6– 1 0
Camellias, 12 blooms	1 0– 3 0	Primulas, double, 12 sprays	0 9– 1 0
Carnations, 12 blms.	0 9– 2 0	Roses, Tea, per doz.	1 0– 2 0
Eucharis, per dozen	4 0– 6 0	— coloured, dozen.	2 0– 4 0
Gardenias, 12 blooms	1 0– 3 0	— red, per dozen	1 6– 2 0
Heliotropes, 12 spr.	0 6– 1 0	— Saffrano, dozen	1 0– 1 6
Jasmine, white, bun.	0 6– 0 9	Spiræa, 12 bunches	6 0– 9 0
Lilac, 12 bunches	4 0– 8 0	Stephanotis, 12 spr.	2 0– 4 0
Lilies of the Valley, 12 sprays	0 6– 1 6	Tropæolums, 12 bun.	1 0– 2 0
— 12 bunches	6 0–12 0	Tulips, 12 bunches	2 0– 4 0
Lilium longiflorum, 12 blooms	3 0– 6 0	Tuberoses, 12 blms.	1 0– ...
Marguerites, per 12 bunches	3 0– 6 0	Violets, 12 bunches	0 4– 0 9
Mignonette, 12 bun.	3 0– 6 0	— Parme, French, per bunch	3 0– 4 0
Myosotis, 12 bun.	3 0– 6 0	Wallflowers, 12 bun.	3 0– 6 0

SEEDS.

London: *May* 25.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., state that there was a very poor attendance on the seed market to-day, with scarcely any business passing. For red Clover seed a small speculative demand has sprung up. Increased attention has during the last few days been devoted to spring Tares. Rape seed continues firm at the late rise; Canary shows no change, but for Hemp seed more money is asked. There is a better trade for sowing white Mustard. Feeding Linseed tends in favour of holders. Blue Peas and Haricot Beans are selling at unprecedentedly low rates.

CORN.

Averages.—Official statement showing the average price of British corn, imperial measure, in the week ended May 21:—Wheat, 34*s.* 1*d.*; Barley, 21*s.* 9*d.*; Oats, 16*s.* 3*d.* For the corresponding week in 1886:—Wheat, 32*s.* 4*d.*; Barley, 25*s.* 6*d.*; Oats, 20*s.* 10*d.*

FRUIT AND VEGETABLES.

Columbia (East London): *May* 25.—Good supplies of all kinds of farm and market produce, with a moderate demand, at following quotations:—Asparagus, 1*s.* to 2*s.* 6*d.* per bundle; Spinach, 1*s.* 6*d.* to 2*s.* 6*d.* per sieve; Cabbages, 3*s.* to 7*s.* per tally; spring Onions, 2*s.* 6*d.* to 3*s.* 6*d.* per dozen bunches; Rhubarb, 1*s.* 6*d.* to 3*s.* do.; Greens, 2*s.* to 3*s.* do.; English Onions, 6*s.* 6*d.* to 9*s.* per cwt.; foreign do. (new season), 6*s.* to 7*s.* do.; Carrots, 18*s.* to 26*s.* per ton; Mangels, 11*s.* 6*d.* to 14*s.* do.

Stratford: *May* 24.—The market has been well supplied with all kinds of produce during the past week, and a fair trade was done at the undermentioned prices:—Carrots, household, 40*s.* to 55*s.* per ton; do., cattle feeding, 8*s.* to 12*s.* do.; Mangels, 9*s.* to 12*s.* do; Swedes, 18*s.* to 20*s.* do.; Onions, German, 4*s.* to 5*s.* per bag; Belgium, 6*s.* to 7*s.* do.; Watercress, 6*d.* per dozen; cut greens, 1*s.* 3*d.* to 1*s.* 6*d.* per dozen bundles; Rhubarb, 1*s.* 6*d.* to 1*s.* 9*d.* do.; Spinach, 1*s.* 6*d.* to 2*s.* per bushel; frame Cucumbers, 3*s.* to 3*s.* 6*d.* per dozen; Dutch do., 1*s.* 3*d.* to 1*s.* 6*d.* do.; spring Onions, 1*s.* 9*d.* to 2*s.* do.; Parsley, 2*d.* per bundle; Mint, 2*d.* do.; Radishes, 10*d.* per dozen.

POTATOS.

Borough and Spitalfields: *May* 24.—Supplies of old running short, and best supplies dearer in consequence. New are not arriving very freely, and show steady value; general trade quiet. Quotations:—Regents, 90*s.* to 130*s.*; Magnum Bonums, 95*s.* to 150*s.*; Champions, 80*s.* to 90*s.* per ton. Malta round, 11*s.* to 13*s.*; and Lisbon, 10*s.* to 12*s.* per cwt.

Columbia: *May* 25.—Quotations:—York and Lincoln Magnums, 80*s.* to 100*s.*; do. Regents, 65*s.* to 90*s.*; do. Champions, 65*s.* to 75*s.*; Kent and Surrey Regents, 70*s.* to 85*s.*; do. Magnums, 80*s.* to 110*s.*; do. Champions, 60*s.* to 75*s.*; Cambridgeshire Regents, 70*s.* to 95*s.*; do. Magnums, 80*s.* to 110*s.*; do. Champions, 57*s.* to 75*s.*; Scotch Regents, 80*s.* to 130*s.*; do. Magnums, 80*s.* to 140*s.*; do. Victorias, 95*s.* to 110*s.*; do. Champions, 60*s.* to 90*s.* per ton.

HAY.

Averages.—The following are the averages of the prices obtained at the various Metropolitan markets during the past week:—Clover, prime, 84*s.* to 100*s.*; inferior, 70*s.* to 84*s.*; hay, prime, 70*s.* to 90*s.*; inferior, 45*s.* to 65*s.*; and straw, 30*s.* to 45*s.* per load.

"ARCHIMEDEAN"

AMERICAN LAWN MOWERS.

AWARDED

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AT THE

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and the JURY, in their REPORT, say:—

"The 'ARCHIMEDEAN' did the BEST WORK of any Lawn Mower exhibited."

ALSO AT

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AND AT

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Opinions of the Press:

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"Remarkably easy to work."—Vide *Gardeners' Magazine.*

"The quickest, most simple, and most efficient mower ever used."—Vide *Gardeners' Chronicle.*

"We feel bound to recommend it to our readers as one of the best mowers we have as yet made acquaintance with."—Vide *Floral World.*

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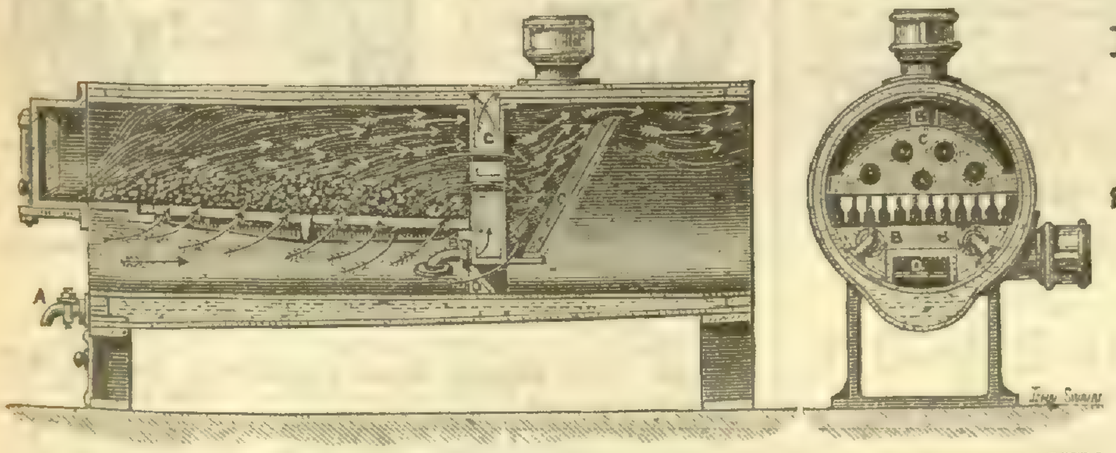

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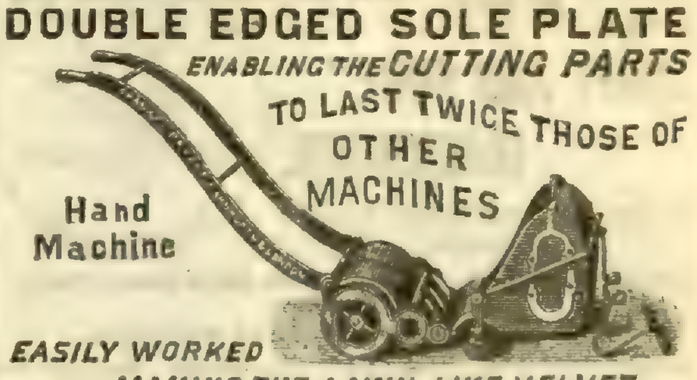

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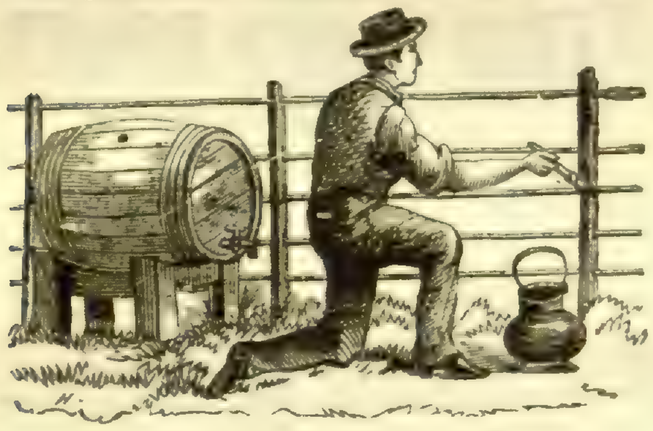

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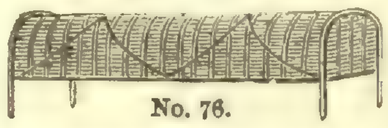

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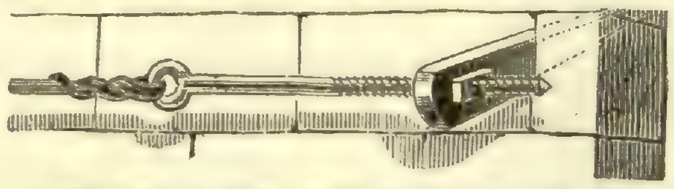

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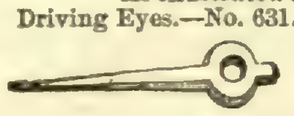

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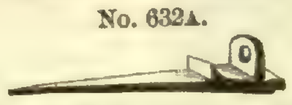

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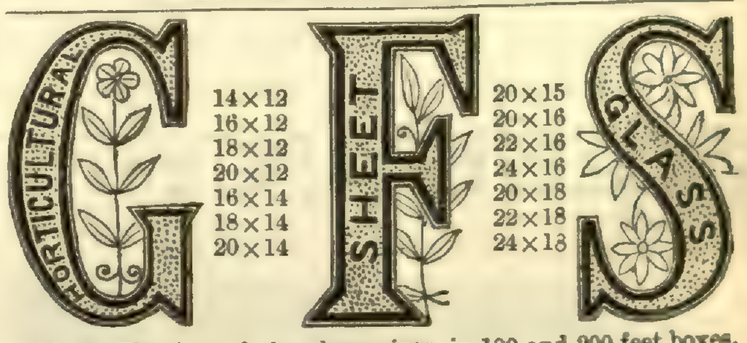

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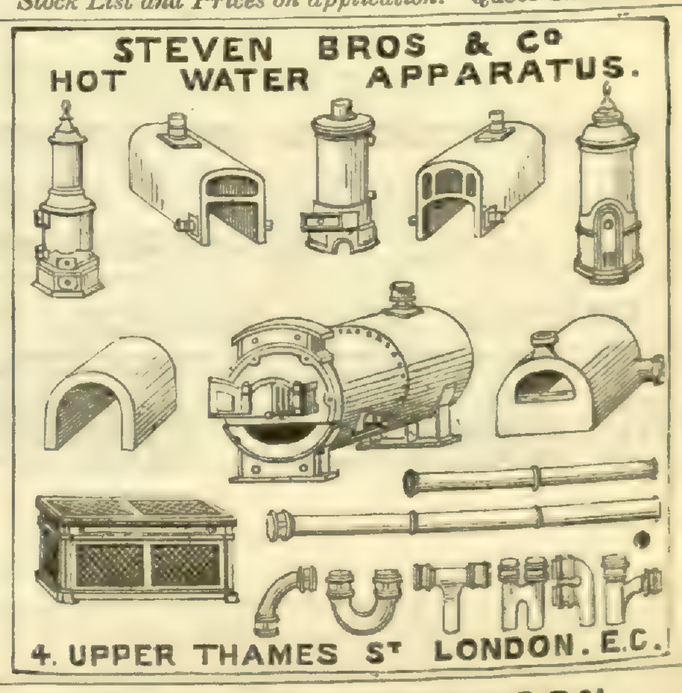

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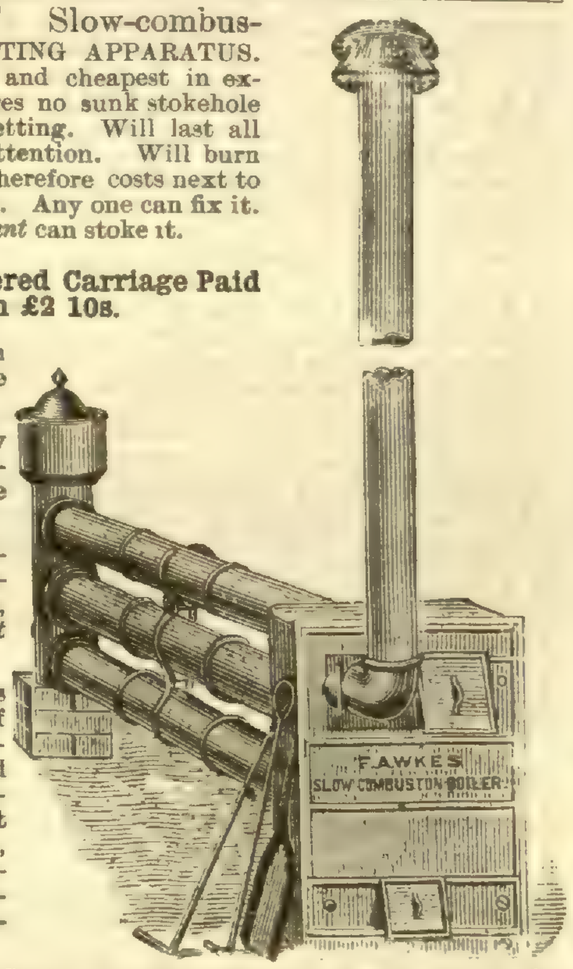

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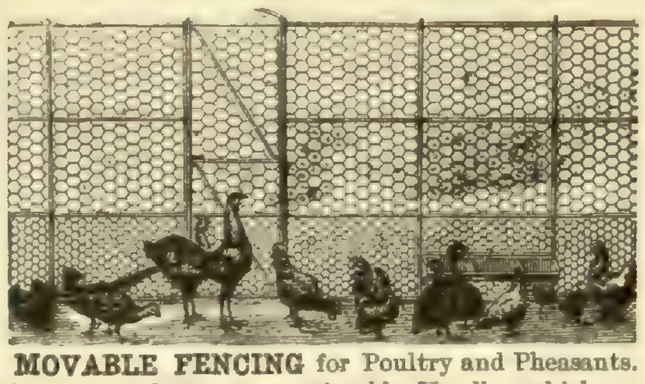

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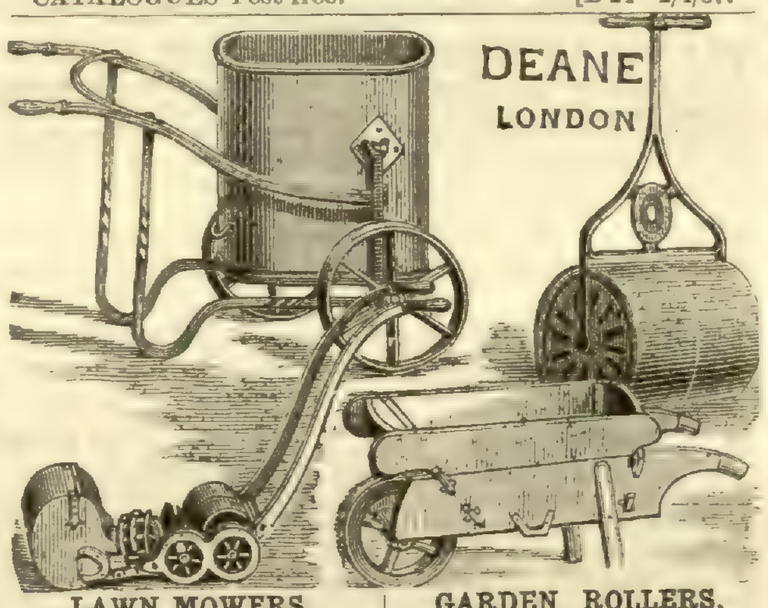

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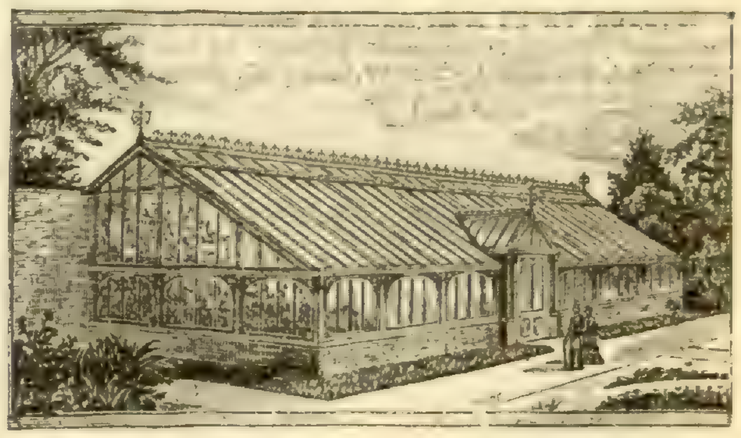

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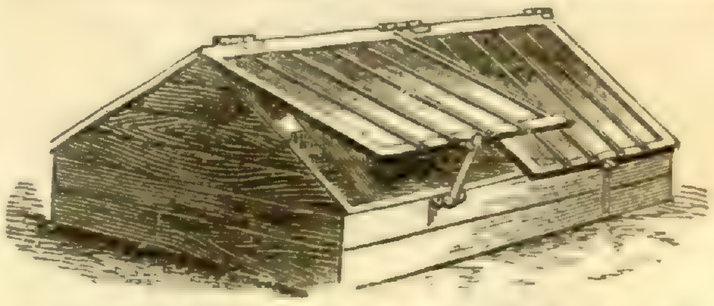

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8 „ ..	0	5	0	19 „ ..	0	10	6
9 „ ..	0	5	6	20 „ ..	0	11	0
10 „ ..	0	6	0	21 „ ..	0	11	6
11 „ ..	0	6	6	22 „ ..	0	12	0
12 „ ..	0	7	0	23 „ ..	0	12	6
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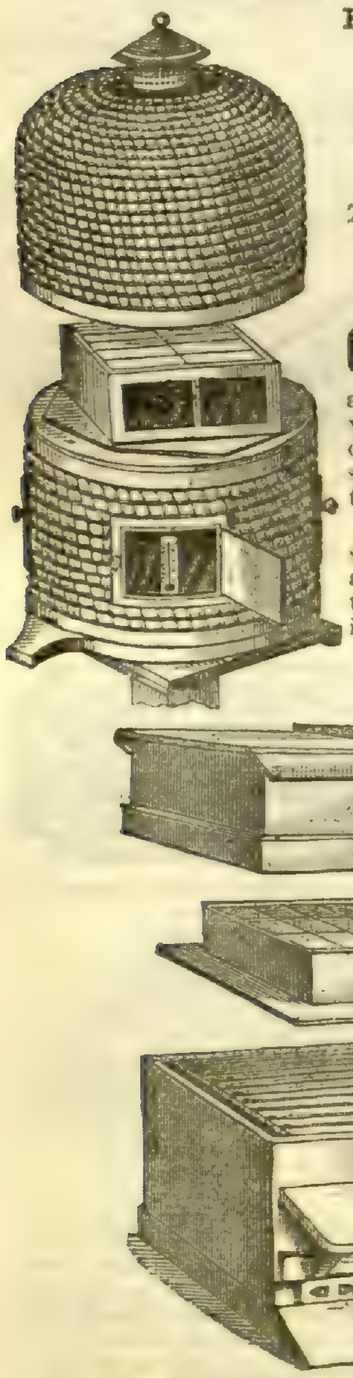

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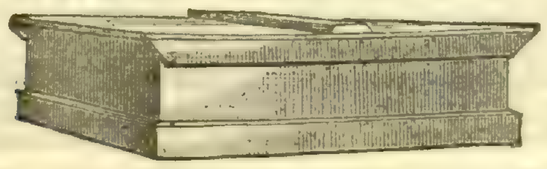

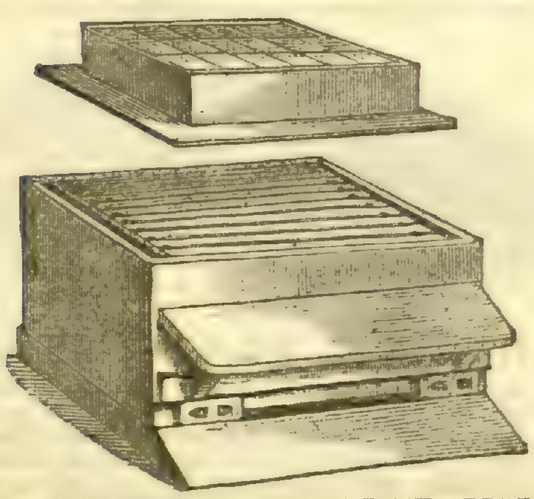

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And thousands of unsolicited Testimonials have been received testifying to their superiority over all others.
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The following are their Advantages over all others:—
1st. Simplicity of Construction—every part being easily accessible. 2d. They are worked with much greater ease than any other. 3d. They are the least liable to get out of order. 4th. They make little or no noise in working. 5th. They will cut either short or long Grass, wet or dry.

SILENS MESSOR MOWER,
with Improved Steel Chain and Handles.

SINGLE-HANDED LAWN MOWER.

	Price.
To cut 6 in., can be worked by a Lady ...	£1 15 0
To cut 8 in., do. do.	2 10 0
To cut 10 in., do. by a strong youth	3 10 0
To cut 12 in., do. by a man ...	4 10 0
To cut 14 in., do. do.	5 10 0

DOUBLE-HANDED LAWN MOWER.

To cut 16 inches, can be worked by one man on even lawn ...	£6 10 0
To cut 18 inches, do. man and boy...	7 10 0
To cut 20 inches, do. do. ...	8 0 0
*To cut 22 inches, can be worked by two men	£8 10 0
*To cut 24 inches, do. do. ...	9 0 0

* If made stronger, suitable for Donkey, 30s. extra.

Prices of Donkey, Pony, and Horse Machines, including Patent Self Delivery Box, or Side Delivery, with Cross-stay complete, suitable for attaching to Ordinary Chaise Traces or Gig Harness:—

DONKEY and PONY MACHINES.

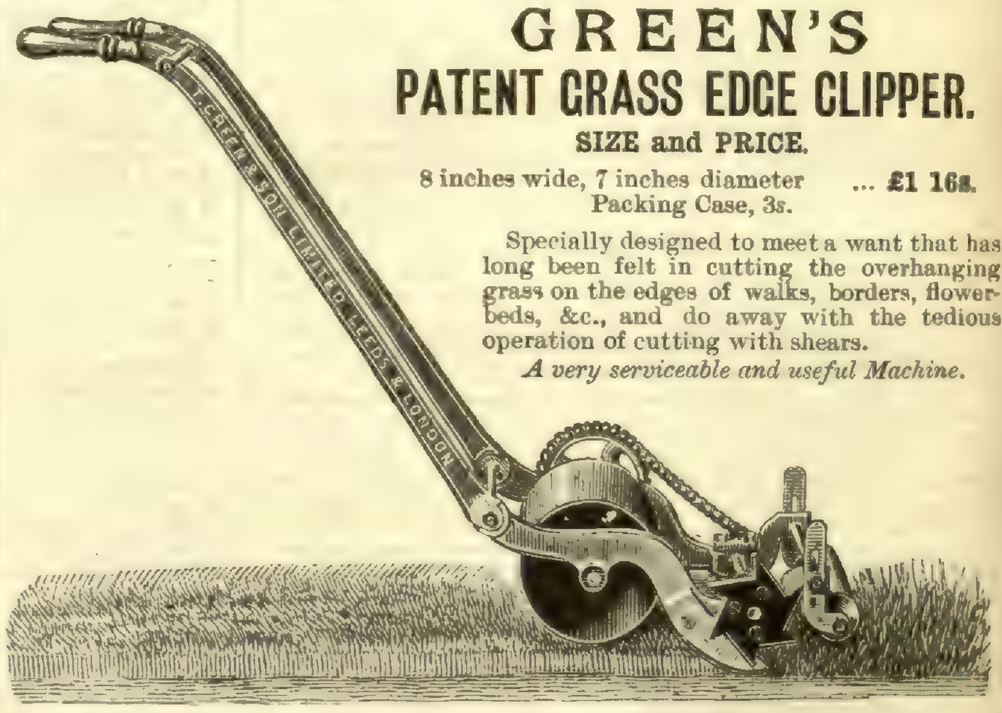
To cut 26 inches	£14 0 0
To cut 28 inches	16 0 0
To cut 30 inches	18 0 0
Leather Boots for Donkey	1 0 0
Leather Boots for Pony	1 4 0

HORSE MACHINES.

To cut 30 inches	£22 0 0
To cut 36 inches	26 0 0
To cut 42 inches	30 0 0
To cut 48 inches	34 0 0
Leather Boots for Horse	1 9 0

The 26 and 28 inches can easily be worked by a Donkey, the 30 inches by a Pony, and the larger sizes by a horse; and as the Machine makes little noise in working, the most spirited animal can be employed without fear of it running away, or in any way damaging the machine. Packing Cases as per List, except when for export.

GREEN'S PATENT GRASS EDGE CLIPPER.



SIZE and PRICE.
8 inches wide, 7 inches diameter ... **£1 16s.**
Packing Case, 3s.

Specially designed to meet a want that has long been felt in cutting the overhanging grass on the edges of walks, borders, flower-beds, &c., and do away with the tedious operation of cutting with shears.
A very serviceable and useful Machine.

GREEN'S PATENT "MULTUM IN PARVO" LAWN MOWER.

HIGHLY RECOMMENDED FOR SMALL LAWNS.

PRICES,
With Grassbox.

To cut 6 in.	£1 5 0
To cut 7 in.	1 13 0
To cut 8 in.	2 0 0
To cut 10 in.	3 0 0

GREEN'S PATENT LAWN TENNIS COURT MARKER.

No. 2412.
The Best Marker made.
Size with 1 wheel for Ordinary Courts, price 14s.
Do. do., with 3 wheels, 17s.
Size for Clubs and Large Grounds, price £1.

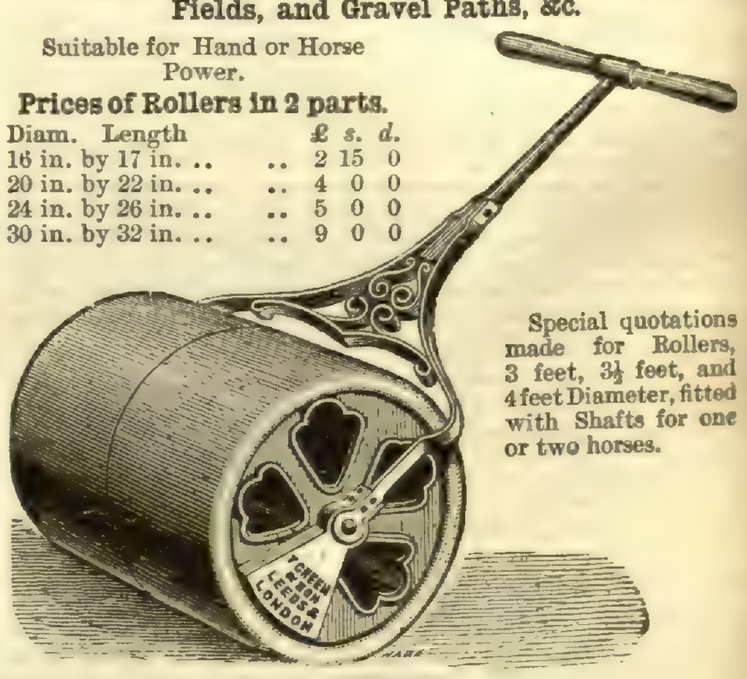
Small Bag of Marking Composition, 9d.

GREEN'S Patent ROLLERS,
For Lawns, Drives, Bowling Greens, Cricket Fields, and Gravel Paths, &c.

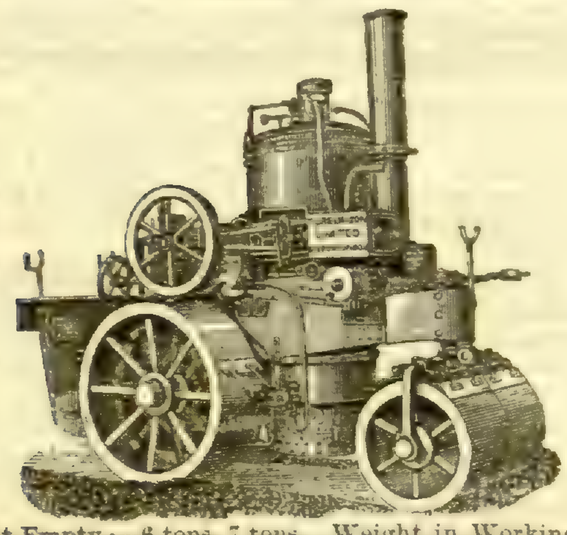
Suitable for Hand or Horse Power.

Prices of Rollers in 2 parts.

Diam. Length	£ s. d.
16 in. by 17 in.	2 15 0
20 in. by 22 in.	4 0 0
24 in. by 26 in.	5 0 0
30 in. by 32 in.	9 0 0



Special quotations made for Rollers, 3 feet, 3½ feet, and 4 feet Diameter, fitted with Shafts for one or two horses.



Weight Empty:—6 tons, 7 tons. Weight in Working Trim with Water and Fuel:—7 tons, 8 tons.

GREEN'S PATENT STEAM ROAD ROLLERS
and TRACTION ENGINES COMBINED.

Which are made in sizes of 6, 10, 12½, 15, and 20 Tons weight, and both the Driving and Steering of them are under the easy control of ONE Man.

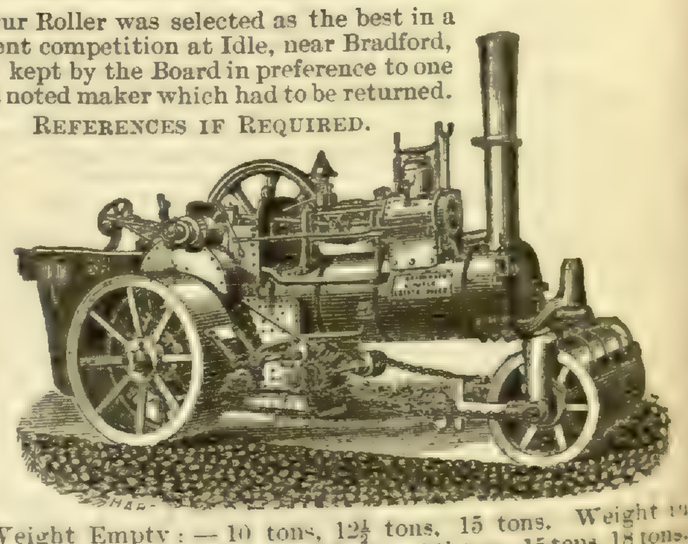
As supplied to Her Majesty for the Royal Grounds, Frogmore, Windsor, and can be seen on application to Mr. Jones, Superintendent of the Gardens.

They are suitable for Rolling Carriage Drives, Park Roads, Walks, Streets, Highways, and for General Road Making; Rolling Lawns, Cricket Flats, Parks, &c. They can also be used as Stationary Engines for Stone Breaking, Wood Sawing, Pumping, Farm Purposes, and other various work.

They are specially recommended to Noblemen, Gentlemen, Borough and Road Surveyors, Corporations, Local Boards, Highway Trustees, Contractors, Road Makers, and others.

Specifications, with Prices and Testimonials, furnished on application.

Our Roller was selected as the best in a recent competition at Idle, near Bradford, and kept by the Board in preference to one of a noted maker which had to be returned.
REFERENCES IF REQUIRED.



Weight Empty:—10 tons, 12½ tons, 15 tons. Weight in Working Trim with Water and Fuel:—12½ tons, 15 tons, 18 tons.

Delivered Carriage Free at all the principal Railway Stations and Shipping Ports in England, Scotland, and Ireland.

The largest stock of Mowers kept by any manufacturer is to be found at our London Establishment, SURREY WORKS, BLACKFRIARS ROAD, where Purchasers can make selection out of several hundred Machines of Hand, Pony, and Horse Power, and have their Orders supplied the same day as they are received.

The above Machines are Warranted to give entire Satisfaction, otherwise they may be returned AT ONCE, Free of Cost to the Purchaser.

N.B.—Those who have Lawn Mowers which require repairing should send them to either our Leeds or London Establishment, where they will have prompt attention, as an Efficient Staff of Workmen is kept at both places.

GARDEN SEATS AND CHAIRS, AND HORTICULTURAL IMPLEMENTS OF EVERY DESCRIPTION, WIRE NETTING, &c., &c.

Descriptive Illustrated PRICE LISTS Free on application to

THOMAS GREEN & SON, LIMITED, SMITHFIELD IRONWORKS, LEEDS; AND SURREY WORKS, BLACKFRIARS ROAD, LONDON.

or they can also be had of any Ironmonger, Seedsman, Merchant, or Factor in the United Kingdom.

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CONTENTS.

Agave Henriquesii	732
Aphelandra chrysops	736
Aristea platycaulis	732
Auricula, discussion on	736
Battersea Park	742
Beetles, crickets, &c., destroyer for	746
Cape and New Holland plants	745
Covent Garden sales	745
Eleutherine plicata as a dye plant	745
Euonymus, golden	734
Ficus Benjamina	732
Florists' flowers	744
Floral emblems	746
Flower garden, the	739
Forestry	743
Fruits under glass	739
Gardening appointments	754
Glasgow Exhibition, 1888	740
Gooseberry borer, the	744
Hagley Hall	731
Hardy fruit garden	739
Horticultural nomenclature	740
Irises, some new	738
Kitchen garden	739
Livistonia Mariæ	734
Masdevallia velifera	744
Obituary:—	
Jackman, Mr. G.	748
Orchid houses	748
,, notes and gleanings	742
Orchids, Indian	736
Pansies	741
Plants and their culture	748
Paris	733
Potato culture	736
Potatos	746
Roses, new	745
Royal Horticultural Society's meetings	746
Scotland	743
Scuticaria Hadwenii	733
Seeds, late vegetation of	745
Show fixtures	740
Societies:—	
Bath and West of England	747
Manchester	746
Strawberry, Auguste Nicaise	746
Tar in North Carolina	741
Tulips at Haarlem	734
Vines, red-spider on	745
,, young on old borders	746
Ward's nursery, Leytonstone	735
Weather, the	748

ILLUSTRATIONS.

Aphelandra chrysops	737
Battersea Park. (See Supplement.)	
Ficus Benjamina	733
Gooseberry borer, the	744
Masdevallia velifera	745

NOTICE TO SUBSCRIBERS.—All Numbers of the "Gardeners' Chronicle" from January 1 of this year are still to be had.

CRYSTAL PALACE.
GREAT ROSE SHOW of SEASON.
SATURDAY, July 9. Postponed from July 2.
For Schedules and Entry Forms apply to
Mr. W. G. HEAD, Garden Superintendent, Crystal Palace, S.E.

ALEXANDRA PALACE,
London, N.
GREAT ROSE SHOW, JULY 14, 15, and 16. Entries Close July 7, 1887. For Schedules and full particulars, apply to J. S. COOKE, Secretary of the Show, Alexandra Palace, N.

SHEPPERTON AND THAMES VALLEY HORTICULTURAL SOCIETY.
The FOURTH ANNUAL SHOW will be held in the Grounds of Sunbury Court on THURSDAY, June 30. Prizes for Roses and Orchids Open to All England. N.B.—The restriction in Class 59 is withdrawn. For Schedules and particulars apply to Shepperton-on-Thames. EDWARD RUTTER, Hon. Sec.

BRIGHTON and SUSSEX FLORICULTURAL and HORTICULTURAL ASSOCIATION.
GRAND SUMMER EXHIBITION, JULY 6 and 7, at the Royal Pavilion. 1st prize for 10 Stove and Greenhouse Plants, £10. 1st prize for 8 Orchids, £5. 1st prize for 12 Foliaged Plants, £5. 1st prize for 48 Roses, £5. 1st prize for Collection of Fruit, £5. Schedules of prizes ready.
EDWARD CARPENTER, Secretary.
Secretary's Office: 96, St. James' Street,
Brighton, March 28, 1887.

BEDFORD and BEDFORDSHIRE HORTICULTURAL SOCIETY.
FOURTH ANNUAL SHOW at Bedford, JULY 13. Special Prizes for ROSES and CUT FLOWERS, open to all England. Entries Close, July 5. Schedules and Entry Forms to be obtained of
Stoneleigh, Bedford. HENRY TEBBS, Hon. Sec.

SHROPSHIRE HORTICULTURAL SOCIETY.
SUMMER SHOW (open to all), AUGUST 17 and 18. Twenty Plants, £25, £20, £15. Collection of Fruit, £10, £6, £3. For Grapes, £44. Collection of Vegetables, 8 sorts, £5, £3, £2, £1. Schedules and full particulars from
Messrs. ADNITT AND NAUNTON, Shrewsbury, Hon. Secs.

RHODODENDRONS.—The Rhododendrons and Azaleas at Knap Hill will be in their greatest beauty from the 6th to the 20th JUNE, and may be seen daily, Sundays excepted.
The Rhododendrons and Azaleas in Rotten Row are supplied by Anthony Waterer.
Exhibition of Rhododendrons in the Botanic Gardens, Regent's Park, open daily during June. Orders of admission may be obtained from the Exhibitor, ANTHONY WATERER.
Knap Hill Nursery, Woking, Surrey.

F. & A. DICKSON & SONS hold large stocks of the following, and are Booking Orders at moderate prices:—BEDDING PLANTS, in great variety. CHRYSANTHEMUMS, DAHLIAS, Tuberous BEGONIAS, a fine collection; HERBACEOUS and ALPINE PLANTS, in pots; H.P. and TEA ROSES, in pots. Special LISTS on application. The Queen's Seedsmen, Chester.

CHEAP PICEA NORDMANNIANA, 1½ to 2 feet, 10s. per dozen; 2 to 2½ feet, 15s. per dozen; 2½ to 3 feet, 24s. per dozen; 3 to 3½ feet, 30s. per dozen. All EVERGREENS and FRUIT TREES cheap; CURRANTS and GOOSEBERRIES from 7s. 6d. per 100. 25 per cent. discount allowed for cash to clear. For LIST apply
T. L. MAYOS, Highfield Nurseries, Hereford.

AURICULAS on Sale, from the best Show varieties, stock of the late Ed. Pohlmann.
F. POHLMANN, Summergate, Halifax.

A Few Large Healthy
PALMS, 3 to 5 feet high, for immediate disposal — Latania borbonica, Seaforthia elegans, Chamærops excelsa, and Phœnix reclinata—from 10s. per pair.
GARDENER, Holly Lodge, Stamford Hill, London, N.

KELWAY AND SON have to offer—
"MODEL" CALCEOLARIA; "MODEL" CINERARIA.
CATALOGUES on application.
Langport, Somerset.

VERBENAS—VERBENAS.—100,000, all strong, healthy, and well-rooted, in 4, 8, or 12 varieties, 6s. per 100, 50s. per 1000. Package free. Terms cash with all orders.
FLETCHER, SON AND CO., Florists, &c., Chesterfield.

NARCISSUS "EMPEROR."—The largest and best of all the Daffodils. Orders now Booked for Autumn Delivery. Price on application.
F. & A. DICKSON & SONS, The Queen's Seedsmen, Chester.

Miss Joliffe Carnation.
H. B. MAY has a splendid stock of flowering Plants of this popular variety, from 9s. per dozen.
Dyson's Lane Nursery, Upper Edmonton.

TUBEROUS BEGONIAS.—Strong Seedlings, from choice named varieties, three to five leaves, 10s. 6d. per 100; extra strong, 12s. 6d. per 100.
A. HUNT, High Street, Stevenage.

NEW WHITE ZONAL GERANIUM, Queen of the Belgians. First-class Certificate, Royal Horticultural Society. Autumn-struck, in 60's, 4s. per dozen.
W. SIMS, Grove Nursery, Tooting, S.W.

MESSRS. GREGORY AND EVANS, NURSERYMEN, Sidcup, and 285, 286, 287, 288, Flower Market, Covent Garden, W.C., are open to RECEIVE CONSIGNMENTS of Choice CUT FLOWERS in any quantity for their Commission Department. Boxes and Labels supplied.
Telegraph Address—"COMMISSION, SIDCUP."

SQUELCH AND BARNHAM, North Row, Covent Garden, W.C., are OPEN TO DISPOSE OF any quantity of MUSCATS and BLACK GRAPES, TOMATOS, CUCUMBERS, FRENCH BEANS, STRAWBERRIES, CHOICE FLOWERS, &c. Highest Market Prices obtained. Account Sales daily; Cheques weekly or as preferred by Sender. Baskets and Labels supplied. References given.

WANTED, Large PALMS, TREE FERNS, and other large ORNAMENTAL FOLIAGED PLANTS, in EXCHANGE for ORCHIDS or OTHER PLANTS. Send full particulars to
The LIVERPOOL HORTICULTURAL COMPANY (John Cowan), Limited, The Vineyard and Nurseries, Garston, Liverpool.

BEGONIAS, Superb Bedding and other varieties. GERANIUMS Dr. Orton, Henri Jacoby, West Brighton Gem, Flower of Spring, Crystal Palace Gem, Mrs. Pollock, &c. CALCEOLARIA Golden Gem; and other Bedding Plants. Special TRADE LIST on application to
B. R. DAVIS, The Yeovil Nurseries, Yeovil.

EIGHTY THOUSAND CLEMATIS, in Pots, of all the finest Double and Single Varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants; extra strong plants repotted into 5½-inch pots, 2s. 6d. each. Descriptive LIST on application.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

PRIMULA, "Double White," 5s. per dozen, 35s. per 100.
Price for quantities on application.
Terms, Cash with Order.
TAYLOR AND CO., Nurserymen, Timperley, Cheshire.

CREEPERS FOR WALLS, in Pots, can be moved at any time.—By planting what is suitable, an ugly object may easily and rapidly be made beautiful. Descriptive LIST and advice free.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

HARDY RHODODENDRONS and AZALEAS.—The most extensive stock in the Kingdom of the finest hardy varieties known.
☞ The Rhododendrons in Rotten Row and the Botanic Gardens, Regent's Park, are supplied by
ANTHONY WATERER, Knap Hill Nursery, Woking, Surrey.

PRIMULAS—PRIMULAS—PRIMULAS.—Eighteenth year of distribution. Williams' Superb Strain, 1s. 6d. per dozen; 10s. per 100. CINERARIAS, same price. Package and carriage free. Double White PRIMULAS, 6d. each. Volunte Nationale alba, the best winter white PELARGONIUM, strong rooted plants 1s. each.
JOHN STEVENS, The Nurseries, Coventry.

JOHN LAING AND CO. beg to announce that their New and General Plant CATALOGUE for 1887 is now published, and will be forwarded Gratis and Post-free to all applicants. The Nurseries, Forest Hill, London, S.E.

CHOICE BEDDING GERANIUMS, &c.—Henri Jacoby, 10s. per 100; Flower of Spring, 10s. per 100; Crystal Palace Gem, 15s. per 100; Queen of Belgians, best white, 20s. per 100; Vesuvius, 10s. per 100. All good strong plants.—W. JACKSON, Blakedown, Kidderminster.

New Roses in Pots.
LIST of the most select sorts now ready,
Gratis and Post-free.
TEA and NOISETTE ROSES, of best sorts only, in pots, in great quantity and of best quality.
SAMPLE DOZEN of really good Plants, in 5-inch pots, carefully packed for travelling, put on rail on receipt of 15s.
HALF a DOZEN ditto, on receipt of 8s.
EWING AND CO.,
Sea View Nurseries, Havant, Hampshire.

ASPARAGUS.—This delicious vegetable does not require half the expense often incurred. Strong roots, 2s. 6d. per 100; extra strong ditto, two years old, 3s. 6d. per 100; three years, 5s. per 100.
RICHARD SMITH AND CO., Worcester.

Mangel Wurzel and Turnip Seeds.
H. AND F. SHARPE are now prepared to make special offers of home-grown MANGEL WURZEL and TURNIP SEEDS, raised in 1886 from specially selected Bulbs. The quality is excellent and the prices are very low.
Seed Growing Establishment, Wisbech.

SPHAGNUM MOSS for SALE at Grange Plantation. Apply,
JOHN MILLER, Overseer, Grange, Coldingham, Berwickshire, N.B.

FIELD AND HEARSON'S NICOTYL VAPORISER. For the Destruction of Aphis, &c., WITHOUT SMOKE. CATALOGUE post-free.
BENJAMIN FIELD, F.R.B.S., 75A, Queen Victoria Street, E.C.; Depôt, Swan Place, Old Kent Road, S.E.

SALES BY AUCTION.

Finchley Road, N.W.

Postponed to MONDAY NEXT, June 6.

ANNUAL SALE of thousands of well-grown BEDDING PLANTS, beautifully grown CAMELLIAS, 1000 CHRYSANTHEMUMS, 1000 Tea and other ROSES, 500 FERNS, LILIES, and other useful PLANTS.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, on the Premises, The Child's Hill Farm Nursery, Finchley Road, N.W., close to the Castle Hotel, on MONDAY NEXT, June 6, at 12 o'Clock precisely, by order of Messrs. Morle & Co.

On view this day and morning of Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

Tuesday Next.

ESTABLISHED ORCHIDS.

From a well-known Private Collection. For Sale in consequence of the houses being overcrowded. The whole of the plants are well grown, and in good health.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY NEXT, June 7, at half-past 12 o'Clock precisely, about 150 lots of well-grown ESTABLISHED ORCHIDS, from a well-known private Collection, including the following:—

Cypripedium Dauthierii marmorata, very fine and distinct	Lælia flaminea
,, vexillarium, a very fine variety	,, anceps Dawsonii, a very fine variety
,, tonsum	Vanda Sanderiana
,, politum	Cattleya Trianæ Backhouseiana
Cirrhopetalum ornatissimum, extremely rare	Aërides Lawrenceæ
Oncidium macranthum	Cœlogyne Massangeana, a very fine variety
Angræcum caudatum	Maxillaria Sanderiana

On view morning of Sale, and Catalogues had.

Tuesday Next.—Without Reserve.

2000 ODONTOGLOSSUM ALEXANDRÆ.
500 EUCHARIS.
CATTLEYA SANDERIANA.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. J. Charlesworth, of Heaton Bradford, to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, June 7, at half-past 12 o'Clock precisely, without reserve, 2000 ODONTOGLOSSUM ALEXANDRÆ from the best Pacho districts. They are in fine condition and amongst them are some very large masses; a fine importation of CATTLEYA SANDERIANA, in best possible health and condition, and containing some exceptionally large pieces; also a consignment of EUCHARIS.

On view morning of Sale, and Catalogues had.

Tuesday Next.

700 PHALÆNOPSIS SCHILLERIANA and AMABILIS.
400 DISA GRANDIFLORA.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Shuttleworth, Carder & Co., to include in their SALE of ORCHIDS on TUESDAY NEXT, June 7, a small but good consignment of Phalænopsis Schilleriana and P. amabilis, many fine plants, the whole collected by Mr. C. Roebelin. P. Schilleriana has now become very scarce in its native habitat. They will be sold on blocks as received, each block containing several plants, the entire consignment being offered together with some fine masses of Odontoglossum grande and Lycaste Skinneri. Also a consignment of about 500 tubers of Disa grandiflora from the Cape.

On view morning of Sale, and Catalogues had.

Friday Next.

CATTLEYA BOWRINGIANA.
ODONTOGLOSSUM HARRYANUM.
CYPRIPEDIUM SANDERIANUM.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, June 10, at half-past 12 o'Clock precisely.

CATTLEYA BOWRINGIANA.

A magnificent importation of this splendid new winter-flowering Cattleya; the plants are well-leaved, and in superb condition, with plump, sound, dormant eyes, and in most excellent order for establishing, including one enormous mass in grand condition, with upwards of 250 pseudobulbs. The flowers are produced in clusters of thirteen and upwards, sepals and petals of mauve, tinted rose, and a rich dark crimson labellum, the throat of which is stained yellow. See *Gardeners' Chronicle*, November 28, 1885, p. 683. Awarded First-class Certificate, Royal Horticultural Society, October 31, 1885.

ODONTOGLOSSUM HARRYANUM.

Plants of this brilliant and beautiful novelty will also be offered for sale. It is a wondrous beauty, of indescribably rich colouring, very free flowering—certainly one of the grandest introductions of the century, the blue colouring of the petals and labellum being extremely attractive and captivating.

CYPRIPEDIUM SANDERIANUM,

One of the most extraordinary and beautiful of the genus; petals, 18 to 20 inches in length, of a reddish-purple colour, mottled with a lighter hue; the pouch is a dark brownish-red. It is altogether a showy and remarkable new Cypripede. (See Professor Reichenbach's description in *Gardeners' Chronicle*, May 1, 1886, p. 554.) It was awarded First-class Certificate by the Royal Horticultural Society, September 21, 1886. At the same time will be offered,

CŒLOGYNE SANDERIANA.

This species produces as many as twenty blossoms on a spike, the individual flowers being larger than in the well-known C. cristata, and of snowy whiteness. The plants are in grand order, and this is the best time of the year for establishing them.

Also fine importations of Odontoglossum hastilabium, Cattleya Skinnerii, Lælia Dayana, Vanda Denisoniana, Vanda cœrulescens, and many other choice ORCHIDS.

ODONTOGLOSSUM CRISPUM TRISMEGISTUM
in Flower,
AN EXTRAORDINARY ODONTOGLOSSUM.

On view morning of Sale, and Catalogues had.

Hammersmith, W.

SALE of well-grown STOVE and GREENHOUSE PLANTS, by order of Mr. J. Prewett, who is making alterations to some of his Greenhouses.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Swiss Nursery, Hammersmith, W., near Shaftesbury Road Station, on WEDNESDAY, June 8, at 12 o'clock precisely, a large quantity of well-grown STOVE and GREENHOUSE PLANTS, 12 large white Camellias, 4 to 9 feet; Specimen Azaleas, Stephanotis, Ferns, 50 pots Eucharis, clean and healthy plants; a few Established ORCHIDS, BEDDING PLANTS, &c.

On view the day prior and morning of Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

Shepherd's Bush.

DISSOLUTION of PARTNERSHIP. SALE of LEASEHOLD NURSERY, PLANTS, &c.
To Nurserymen, Florists, Gardeners, &c.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, The Willow Vale Nursery, Uxbridge Road, Shepherd's Bush, close to Uxbridge Road Station, on MONDAY, June 13, at 12 o'Clock precisely (unless an acceptable offer be made previously), the commanding long LEASEHOLD Property, known as The WILLOW VALE NURSERY, comprising a six-roomed Dwelling-house, double span Show-house, Fernery, Palm-house, Stabling, &c. Held for an unexpired term of fifty years at the low rental of £60.

Following the Sale of the Property, will be offered, in suitable Lots, the remaining stock of STOVE and GREENHOUSE PLANTS.

May be viewed. Catalogues can be obtained on the Premises; of Messrs. DOD, LONGSTAFFE, SON, AND FENWICK, 16, Berners Street, W.; and of the Auctioneers, 67 and 68, Cheapside, E.C., and Leytonstone.

Preliminary Notice.—Brixton.

CLEARANCE SALE, without reserve.—Important to the Trade.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, the Nursery, 114, Loughborough Road, Brixton, on WEDNESDAY, June 15, the whole of the well-grown stock of PALMS and other PLANTS, HORSE, VANS, UTENSILS in Trade, &c. Fuller particulars will appear next week.

Catalogues may be had on the premises, and of the Auctioneers, 67 and 68, Cheapside, E.C., and Leytonstone.

Tuesday, June 28.

ORCHIDS in FLOWER.—SPECIAL SALE.

MESSRS. PROTHEROE AND MORRIS desire to announce that their next SPECIAL SALE of ORCHIDS in FLOWER and in BUD will take place on TUESDAY, June 28, for which they will be glad to receive notice of Entries as early as possible.

Central Auction Rooms, 67 and 68, Cheapside, E.C.

Monday Next.—(Sale No. 7426.)

Specimen ORCHIDS in FLOWER, from the Collection of W. E. Brymer, Esq.

MR. J. C. STEVENS has received instructions from W. E. Brymer, Esq., of Dorchester, to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY NEXT, June 6, at half-past 12 o'Clock precisely, a fine lot of specimen plants in Flower from his renowned Collection, which have been exhibited at the Bath and West of England Show, and removed from there. Among them will be found:—

Cattleya Sanderiana, with sixteen leading growths	Cœlogyne Massangeana
Cypripedium albo purpureum	Cymbidium Lowianum
,, porphyreum	Lælia amanda
,, Spicerianum	,, superbiens
Cœlogyne Lowii	Thunia Marshalliæ, 14 spikes
	Vanda teres, 17 spikes

Two Dendrobium Falconeri, each with over 200 Flowers, &c.

On view morning of Sale, and Catalogues had.

Monday Next.—(Sale No. 7426.)

RECEIVED DIRECT.—A splendid lot of the Popayan variety of CATTLEYA TRIANÆ, including some splendid and distinct looking pieces; ONCIDIUM OBRYZATUM, &c., from Mr. F. C. Lehmann, of United States of Colombia; a few BRAZILAN ORCHIDS, &c.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY NEXT, June 6.

On view morning of Sale, and Catalogues had.

Monday Next.—(Sale No. 7426.)

A Further Portion of the COLLECTION of ORCHIDS formed by Rev. J. B. Norman, of Edgware.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, NEXT, June 6, about 300 fine established plants of ODONTOGLOSSUM ALEXANDRÆ, and OTHERS, many with spikes, from the above well-known Collection. Also about 100 lots of choice ORCHIDS in FLOWER and BUD, including many rare species and grand varieties.

On view morning of Sale, and Catalogues had.

Special Sale of Orchids in Flower and Bud.

MR. J. C. STEVENS begs to announce that his next SPECIAL SALE of ORCHIDS in flower and bud will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, June 15, and he will be glad if Gentlemen desirous of entering Plants for this Sale will send particulars not later than Thursday next.

Norwich.

VALUABLE STOVE PLANTS and ORCHIDS.

MESSRS. SPELMAN have received instructions to SELL by AUCTION, on FRIDAY, June 17, at Oak Lodge, Thorpe, Norwich, a large number of STOVE and GREENHOUSE PLANTS, comprising Azaleas, Camellias, Palms, Stephanotis, Eucharis, and Amaryllis, New Zealand and Australian Tree Ferns, several hundred other fine Ferns, about 240 Orchids, many of them fine and rare, and described in Catalogues, to be had of Messrs. SPELMAN, Norwich.

Important Sale of an Exceptionally fine Collection of

CHOICE SELECTED CATTLEYAS.

MESSRS. ARTINGSTALL AND HIND respectfully announce that they are instructed by O. O. Wrigley, Esq., to SELL by AUCTION, at the Manchester Botanical and Horticultural Society's Show Ground, Old Trafford, on MONDAY, June 6, at 2 o'Clock, the renowned COLLECTION of VALUABLE CATTLEYAS, which will be exhibited at the Whitsuntide Horticultural Exhibition, thus giving buyers an opportunity of inspecting and making a careful selection prior to sale. There are at least fifty distinct varieties of these magnificent Orchids, and it offers an opportunity to purchasers seldom met with.

Catalogues will be issued shortly. For further particulars apply to Mr. BRUCE FINDLAY, Botanical Gardens, Old Trafford; or the Auctioneers, at their Offices, 45, Princess Street, Manchester.

Important Sale of the Woodlawn Collection of

Valuable PLANTS, comprising several thousands of choice Orchids, Nepenthes, Sarracenias, Eucharis, Lapagerias, Ericas, Azaleas, and a general assortment of grand Stove and Greenhouse productions, which include some of the most rare and finest specimens in the country. Also Eight First-class Plant-houses, with Heating Apparatus complete.

MESSRS. ARTINGSTALL AND HIND beg to announce that they are favoured with instructions from Joseph Broome, Esq., who is leaving Woodlawn, situate at Didsbury, near Manchester, to SELL by AUCTION, at 12 o'Clock noon, on WEDNESDAY, THURSDAY, and FRIDAY, June 22, 23, and 24 (and NOT on TUESDAY, June 21, as formerly notified—that day being fixed by an Order in Council for the Jubilee Celebration), in the grounds of the above-named residence, the whole of the exceptionally fine COLLECTION of PLANTS, and the greater portion of Plant-houses.

Catalogues will be issued fourteen days prior to Sale, when they may be obtained, together with further particulars, on application (personally, or by post) to Mr. ALFRED COLE, Head Gardener; or from the Auctioneers, 45, Princes Street, Manchester.

Important Sale of Choice Orchids at

EDINBURGH, JUNE 9.

MR. DAVID MITCHELL, HORTICULTURAL AUCTIONEER, will DISPOSE OF, by PUBLIC AUCTION, at Freemasons' Hall, 98, George Street, Edinburgh, on THURSDAY, June 9, at 12 o'Clock noon, a very Choice and Select COLLECTION of ORCHIDS, the property of Messrs. William Thomson & Sons, Clovenfords, by Galashiels, comprising:—

CYPRIPEDIUM VEXILLARIUM.
,, ŒNANTHUM SUPERBUM.
,, NITENS.
,, JAVANICO × SUPERBIENS.
,, VERNIXIUM.
CATTLEYA SKINNERI ALBA.
LYCASTE SKINNERI ALBA.
CATTLEYA LABIATA, true autumn-flowering variety.
DENDROBIUM AINSWORTHII ROSEUM, grand specimen.
,, SPLENDIDISSIMUM.
,, ENDOCHARIS,
VANDAS, of sorts.
CATTLEYA TRIANÆ, "General Gordon."
ODONTOGLOSSUMS.
MASDEVALLIAS, &c.

The whole of the Plants are guaranteed true to name, and in splendid health.

Commissions will be carefully attended to by addressing the Auctioneer, or Messrs. W. THOMSON AND SONS, and from whom Catalogues can also be had.

Edinburgh, May 25.

Thursday Next.—Middlesex, near Waltham Abbey, close to the Enfield Lock (Ordnance Factory) Station on the G.E. Main Cambridge Line, and about 10 miles from London.

MR. W. W. JENKINSON will SELL by AUCTION, at the Mart, on THURSDAY NEXT, June 9, at 2 o'Clock, in one lot, over 10 Acres of FREEHOLD LAND, abutting on the Great Eastern Line, and possessing a good approach from Ordnance Road. The Land, formerly old pasture, is now entirely planted with Manetti Briers, on which are budded all the most choice Roses, for the growth of which or Fruit the soil, a deep rich loam, is specially adapted.

Particulars of Messrs. FLADGATE AND FLADGATE, Solicitors, 40, Craven Street, Strand, W.C.; and of the Auctioneer, 6, Moorgate Street, E.C.

FOR DISPOSAL,

MR. LAING'S NURSERY, Twickenham.

Owing to the Death of Mr. LAING, this LONG-ESTABLISHED NURSERY, occupied by Mr. LAING for the last fifty years, with Lease, Goodwill, and Stock of GREENHOUSES, PITS, SHRUBS, PLANTS, and IMPLEMENTS, for EARLY SALE. Five minutes' walk from St. Margaret's, and close to Twickenham and Richmond Stations. For an energetic man wishing to commence business with a long-established connection, the opportunity is unexceptional. Particulars now ready.

Apply to GEORGE PAUL, The Old Nurseries, Cheshunt.

Dulwich.—By Order of the Mortgagees.

HIGHLY IMPORTANT to MARKET GARDENERS and FLORISTS.

TO BE SOLD, at a Pulling-down price, 21 Modern GREENHOUSES, 27,000 feet of GLASS, 5000 feet of PIPING, with Leasehold DWELLING-HOUSE, and 3 Acres of Ground. Ground-rent only £31.

Apply to Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, London, E.C.

FOR SALE, a FRUITERER'S and GREENGROCER'S, close to Great Western Paddington Station. Main street. Price £120. Splendid position. Ill-health cause of leaving.

Apply to H. DANIELS, 130, Praed Street, W.

FOR SALE, in consequence of Mr. Imrie's death, the old-established and well-known NURSERY BUSINESS so successfully carried on for upwards of sixty years at Ayr. The Grounds extend to about 40 Acres, adjoining the Railway Station, and are well stocked with saleable Trees and Shrubs. Further particulars on application to

IMRIE AND COMPANY, The Nurseries, Ayr, N.B.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

LONDON, *May*, 1887.

During the last season it was represented to the Committee of this institution by many of the Subscribers that some steps should be taken for allowing the Horticulturists of England an opportunity of testifying the respect they owe to their Sovereign by marking this eventful year in some special manner.

After due consideration, the Committee came to the conclusion that the best plan of celebrating this interesting occasion would be by increasing the List of Pensioners, and making a Special Grant of £5 to each of the Pensioners, and also to each of the unsuccessful Candidates at the last Election.

This scheme met with general approval, and in January last the List of Pensioners was increased to 122 recipients, and the Committee trust to carry out the idea in its entirety by making the proposed Grant at the ensuing Anniversary Festival, to be held on 29th June next, on which occasion

BARON FERDINAND DE ROTHSCHILD, M.P.,

has most kindly consented to preside, when he hopes to be able to state that the wishes of the Members and the Committee have been realised, and that 133 poor and deserving Horticulturists will be permitted to participate in the general rejoicing that a Merciful and Gracious Providence has allowed Her Majesty to reign for the long period of fifty years.

To meet the expense thus entailed, the sum of £1200 is required, and several Noblemen and Gentlemen have already promised the sum of £250, providing the balance, £950, is attained by the 29th June, and, unless this sum is secured, the scheme will fall to the ground.

Under these *special circumstances*, the Committee take this opportunity of bringing the matter prominently before the Subscribers, feeling assured that those who take an interest in the Institution will second, to the best of their ability, the exertions of the Executive in their endeavours to alleviate the distress and minister to the comforts of old and deserving Gardeners.

To the affluent and generous lovers of Horticulture the Committee appeal with confidence, and to Gardeners they also appeal, in the hope that they will assist their poorer brethren.

JOHN LEE, *Chairman of Committee.*
HARRY J. VEITCH, *Treasurer.*

DONATIONS and COLLECTIONS already Promised or Sent towards the JUBILEE FUND OF 1887:—

	£	s.	d.
The DUKE of WESTMINSTER, K.G.	250	0	0
Baron FERDINAND DE ROTHSCHILD, M.P.	52	10	0
Lord REVELSTOKE	26	5	0
Baron SCHRODER	31	10	0
The BARONESS VON ROEMER, Sandrock, Hastings	10	0	0
JAMES HUGHES, Esq.	21	0	0
JAMES McINTOSH, Esq.	31	10	0
HARRY J. VEITCH, Esq., Treasurer	31	10	0
N. N. SHERWOOD, Esq. (Messrs. Hurst & Son)	21	0	0
H. B. MILDMAY, Esq., Shoreham Place	20	0	0
Mrs. W. GIBBS, Bristol	2	10	0
GEORGE ANDERSON, Esq., Sydney	5	5	0
A FRIEND	10	10	0
EDWD. KEMP, Esq., Birkenhead	1	1	0
ROB. JORDAN, Llanaway Gardens	1	1	0
W. SWANSBOROUGH, Glasslough Gardens	0	10	0
G. F. WILSON, Esq., Weybridge	5	5	0
Messrs. RAILTON AND CO., Melbourne, New South Wales, per N. N. Sherwood, Esq.	5	0	0
RICHARD CHRIMES, Esq., Rotherham	5	0	0
Messrs. JONES, Brynstedford, Conway	3	0	0
Messrs. WILDER, Sulham, Reading	2	2	0
Mr. A. C. BISHOP, Alresford	0	10	0
Sir C. H. STRICKLAND	1	0	0
Messrs. JAS. DICKSON AND SONS, Chester	1	1	0
J. G. GODWIN, Esq., Chester	1	1	0
J. BENTLEY, Esq., Barrow-on-Humber	1	1	0
JOHN COLEBROOK, William Street, S.W.	5	5	0
Messrs. THOMSON AND SONS, Clovenford, Galashiels	5	5	0
J. J. SMITH, Esq., Willow Lodge, Christchurch	2	2	0
Mrs. COWPER COLES, The Lodge, Bramdean	0	10	0
CHARLES CRAWSHAY, Esq., Hingham, Aylsham	1	1	0
F. WIGAN, Esq., Clare Lawn, East Sheen	5	5	0
JOHN SEDEN, Messrs. Veitch & Son, Chelsea	0	5	0
THAMES BANK IRON CO., Upper Ground Street	5	5	0
Miss FINDLEY, Brampton Speke, Exeter	1	10	0
E. HORNE, Esq., Reigate	0	10	0
Captain CHRISTY, Core Hill, Sidmouth	1	1	0
Miss ROBSON, Hunton, Maidstone	0	10	0
F. G. SAUNDERS, Esq., Caversham, Reading	1	1	0
JOHN C. NICHOLL, Esq., Merthyr Manor, Brigend	5	0	0
N. BLANDFORD, Moor Hill Gardens, Southampton	1	10	0
THOS. LUNT, Ardgowan Gardens, Greenock	2	0	0
R. STRAND, Denne Hill Gardens, Canterbury	0	5	0
JAS. PRUST, Daglensworth Gardens, Cirencester	1	1	0
B. SMITH, Botleys Park, Chertsey	0	10	0
C. COOPER, Seed Merchant, Plymouth	1	1	0
JOHN CHOWN, The Gardens, The Hollies, Weybridge	0	10	0
J. SHEPSTONE, High Elms Gardens, Watford	0	10	6
JOHN MURRELL, Leigh Park Gardens, Bristol	0	4	0
E. CORDING, Stanlake Gardens, Twyford	0	2	6
JESSE WILLARD, Holly Lodge Gardens, Highgate	0	10	6
WM. BROWN, Merivale Gardens, Atherston	1	1	0
JOHN HEAL, Messrs. Veitch & Sons, Chelsea	0	5	0
CECIL BOYLE, Esq., Broghill, Wimbledon	5	0	0
EDWD. MUCKLOW, Esq., Castle Head, Lancashire	1	0	0
B. OSBORN, Holm Park Gardens	0	5	0
EDWD. SHEPSTONE, Charlton Gardens, Nailsea	0	10	0
OBADIAH RICH, St. Catherine's Court, Bath	1	1	0
E. MUCKLOW, Esq., Castle Head, Lancashire	1	0	0
W. J. NUTTING, Esq., Southwark Street	5	5	0
JOHN FRASER, Esq., Lea Bridge Road	1	1	0
F. COOPER, Esq., Byrdhust, Norwood	1	1	0
Miss OSBORN, Streatham	3	3	0
The EARL of DERBY	5	0	0
KENT KINGDON, Esq., Exeter	1	1	0
Mrs. EDWARDS, Faringdon	£0	10	0
Mrs. CRUNDELL, The Moat, Eltham	3	3	0
A. E. PHILLIPS, Esq., Fox Hill, Reading	2	2	0
F. BASSETT, Esq., Leighton Buzzard	5	5	0
W. B. HARTLAND, Esq., Cork	2	2	0
Colonel TREVOR CLARKE, Daventry	1	1	0
JOHN DOMINY, Chelsea	1	1	0
F. REED, Gardener, East Moulsey	0	2	6
JNO. BELL, Strathfieldsaye Gardens	0	10	6
WM. LEE, Powis Castle Gardens	0	5	0
W. RHYMES, Gardener, East Moulsey	0	2	6
HENRY DOWNING, Norbury Park Gardens	1	10	0
E. QUECKENDEN, Seedsman, Harefield	0	5	0
G. H. RICHARDS, Somerley Gardens, Ringwood	0	10	0
WM. SCHOLEY, Burnham Hall Gardens	0	10	0
ROBERT LAING, St. Margaret's Gardens, East Grinsted	1	1	0
R. SAWFORD, Danesbury Gardens	0	5	0
E. GANDY, Stratton Gardens, Mitcheldever	0	5	0
S. CHINERY, Edwardston Gardens, Bexford	0	16	6
GEORGE FORD, Wrest Park Gardens, Beds	1	0	0
JOHN WILSON, The Gardens, Newton-le-Willows	1	5	0
JAS. CHILD, Houndswood Gardens, St. Albans	1	10	0
GEORGE TAYLOR, Messrs. Veitch & Sons, Chelsea	0	5	0
EDW. HUGHES, Edenhurst Gardens, Sevenoaks	0	15	0
J. HILL, Mouse Hill Gardens, Godalming	0	5	0
R. GREENFIELD, The Priory Gardens, Warwick	2	15	0
R. MARIES, Nursery, Lytham	1	1	0
M. DUNN, The Gardens, Dalkeith	3	3	0
A. HALL, Park End Gardens, Wark	0	5	0
JAS. BATLEY, Wentworth Gardens, Barnsley	0	5	0
ISAAC GIBBONS, Stratton Park Gardens, Cirencester	0	2	6
R. KING, Taplow House Gardens, Taplow	0	5	0
JAMES BAYLESS, Belvedere Gardens, Mullingar	0	2	6
A. LUFF, Northrepps Gardens, Norwich	0	10	0
HENRY NEWMAN, Summerleaze Gardens, Shepton Mallett	0	5	0
SAMUEL WELLS, Osborne Gardens, Potters' Bar	1	1	0
WM. SMITH, Gardener, Welch Row, Nantwich	0	10	0
J. BEALE, Wood Hall Gardens, Ware	0	10	0
WM. HUNTER, Gordinag Gardens, Bangor	0	2	6
J. TRURAN, Wenington Gardens, Launceston	0	5	0
J. WELLS, Mansfield House Gardens, Taunton	0	10	0
W. KARNES, Quenly Gardens, Leicester	0	10	6
F. LANG, Barford Hill Gardens, Warwick	0	5	0
GEORGE SUMNERS, Sandbeck Gardens, Rotherham	10	10	0
G. LITTLEWOOD, Sumner Grange Gardens	0	5	0
THOS. ADAMS, Brownsea Island, Poole	0	5	0
WM. BALCHIN, Nursery, Brighton	0	5	0
J. ATKINS, Tatton Gardens, Knutsford	0	10	0
P. DANIELS, Slindon Estate Office, Arundel	0	10	0
R. GRAY, Bury Hill Gardens, Dorking	0	10	0
J. HENDRY, Williamship Gardens, Fairford	1	6	6
JAS. RUSSELL, Portullock Gardens, Lochgelphead	0	10	0
JOHN BOLTON, Regent's Park Terrace	2	2	0
MESSRS. CORRY, SOPER & CO., Finsbury Street	2	2	0
MESSRS. BUNBURY, Forest Lodge, Winkfule	1	0	0
ROBERT MARNOCK, Esq., Oxford and Cambridge Mansions	2	2	0
MESSRS. F. & A. DICKSON & SONS, Chester	1	1	0
B. S. WILLIAMS, Esq., Holloway	2	2	0
HY. WILLIAMS, Esq., Holloway	1	1	0
MRS. FOSTER, Boyne House, Tunbridge Wells	2	0	0
MRS. KENNEDY ERSKINE, Dun House, Montrose	5	0	0
MRS. KENNEDY ESTKINE, Dun House, Montrose (Yearly)	1	1	0
HENRY WEBB, Esq., Redstone, Red Hill	1	1	0
R. HEYNES, Kelarnock Gardens, South Norwood	0	5	0
WM. PARRY, Gardener, Woodford	1	3	6
SILAS WAN, Woolston Gardens, North Cudbury	0	5	0
JOHN POPE, Esq., Seed Merchant, Birmingham	2	2	0
THOS. GLEN, Worth Pink Gardens, Crawley	1	0	0

To Florists and Gentlemen's Gardeners.

FOR SALE (Lease 17 years), PREMISES at Chiswick, two Lean-to Vineries, in good bearing condition; Span-roofed House, 70 feet by 9 feet 6 inches; several Lights, Pits, and Frames, Dwelling House (11 rooms), Coach-house, Stable, &c.; Ground to erect five 70 feet Spans. Presents an excellent opportunity of conducting a remunerative business. To be sold cheap.
Apply, A. G., 12, Hogarth Place, Chiswick, S.W.

TO LET, WING NURSERY, near Oakham, close to Manton Junction, containing 5 large well-heated Plant and Fruit Houses, and nearly 2 acres (splendid Soil) Fruit Trees, &c. Good ten-roomed House and Outbuildings. Photograhs sent.
Apply JOHN W. BURTON, Haymarket, Leicester.

To Florists.

TO BE LET, for the Culture and Exhibition of Flowers and Plants under Glass, an extensive area of LAND adjoining Kennington Park, in front of South Place and Newington Terrace.
Apply to Messrs. MEYNELL AND PEMBERTON, Solicitors, 20, Whitehall Place, S.W.; or, to Messrs. BRIANT AND SONS, Estate Agents, 200, Kennington Park Road, S.E.

Fifty Nurseries, Market Gardens, Florist and Seed BUSINESSES to be DISPOSED OF.

MESSRS. PROTHEROE AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained, gratis, at
67 and 68, Cheapside, London, E.C.

Landscape Gardening.

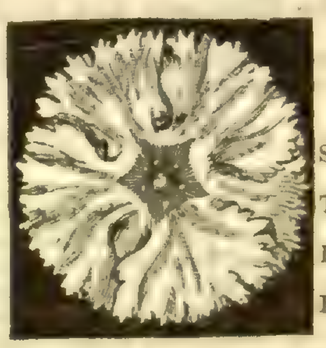
H. F. MALLER (of the firm of B. Maller & Sons), late Pupil of the Crystal Palace School of Landscape Gardening, is prepared to FURNISH PLANS, or undertake any kind of the above work.—61, High Street, Lewisham.

RATING OF NURSERIES.

A PUBLIC MEETING of NURSERYMEN will be held, under the auspices of the Nursery and Seed Trade Association, Limited, on TUESDAY, 28th June, 1887, at the HORTICULTURAL CLUB, Henrietta Street, Covent Garden, W.C., (by kind permission of the Committee), to take into consideration the excessive Rating of Nurseries, and to agree on a combined course of action with a view to the Reduction of Assessments. The Chair will be taken by J. Wood Ingram, Esq., of the firm of Messrs. Wood & Ingram, The Nurseries, Huntingdon, at 4 P.M. Nurserymen will oblige by early intimating to the Secretary their intention to be present, and also by forwarding to him in strict confidence (if the amount of the assessment is in excess of the rent), either the Amounts of their Rents and Assessments, or the proportion which the difference between the Rent and the Assessment bears to the rent itself.

Mr. F. C. GOODCHILD, Secretary,
Nursery and Seed Trade Association.
25, Old Jewry, London, E.C.

CARTERS'



HOLBORN PRIZE
PRIMULA.

AWARDED
Silver Banksian Medal, Royal Horticultural Soc. 1887
The Highest Prize Medal, Ceylon 1885
First Prize (open to England) Crystal Palace 1884
Banksian Prize Medal, Royal Horticultural Soc. 1883

FINEST MIXED SEED, all colours.
Price 1s. 6d., 2s. 6d., 3s. 6d., & 5s. pkt., post-free.

SEEDSMEN TO H.M. THE QUEEN AND H.R.H. THE PRINCE OF WALES,
237 & 238, HIGH HOLBORN, LONDON.

FOR SALE, the property of a Nobleman reducing his establishment, STOVE and GREENHOUSE PLANTS, consisting of Amaryllis, Anthurium Schezerianum maximum, Begonias, Dracænas, Eucharis, Gloxinias, Palms, Orchids (including Calanthe Veitchii), &c. A very large stock of BEDDING-OUT and OTHER PLANTS, including Geraniums, Lobelias, Heliotropes, Calceolarias, Chrysanthemums, Annuals, &c. For LIST and prices, apply to
Mr. B. EVANS, Firle, Lewes, Sussex.
The GARDENS, about 4½ acres, and HOUSE, would BE LET.

CLEARANCE SALE of healthy PALMS for Table and Conservatory Decoration.—LATANIA BORBONICA, SEAFORTHIA ELEGANS, and PHŒNIX RECLINATA, 12 inches high, 6d. each, 4s. per dozen, 25s. per 100; same kinds, 20 inches high, 1s. 6d. each, 6 for 8s., 12 for 14s. Packages and parcels post-free.
COCOS WEDDELLIANA, ARECA LUTESCENS, and EUTERPE EDULIS, 2s. to 5s. each; KENTIAS, 4s. to 10s. each; large PALMS, 3 feet to 6 feet high, 5s. to 50s. each. All of splendid value.
GARDENER, Holly Lodge, Stamford Hill, London, N.

7000 GERANIUMS, CALCEOLARIAS, FUCHSIAS, in 4-inch pots—Mrs. Pollock, 24s.; McMahon, Flower of Spring or Palace Gem, 20s. per 100. CALCEOLARIAS and FUCHSIAS, 16s. per 100. Splendid plants. W. POLLARD, Summerstown, Tooting, S.W.

SPECIAL OFFER OF ORCHIDS.

See previous issue of May 28, 1887.

The undermentioned are all good established Plants, clean and healthy, and will be certain to give satisfaction. Better value cannot be obtained anywhere in the Trade.

C, Cool; I, Intermediate; S, Stove. Each.

C	Odontoglossum grande	3 to 4 bulbs	2*s.* 6*d.*, 3*s.* 6*d.*, 5*s.*
C	Insleayi leopardinum	3 to 4 ,,	3*s.* 6*d.*, 5*s.*, 7*s.* 6*d.*
C	Insleayi splendens	4 to 5 ,,	7*s.* 6*d.*, 10*s.* 6*d.*
C	maculatum	3 to 4 ,,	2*s.* 6*d.*, 3*s.* 6*d.*
C	madrense	3 to 4 ,,	7*s.* 6*d.*, 10*s.* 6*d.*
C	membranaceum	6 to 7 ,,	3*s.* 6*d.*, 5*s.*
C	nebulosum	4 to 5 ,,	5*s.*, 7*s.* 6*d.*
C	Œrstedi	6 to 7 ,,	3*s.* 6*d.*, 5*s.*
C	Pescatorei	3 to 4 ,,	2*s.* 6*d.*, 3*s.* 6*d.*, 5*s.*
I	Phalænopsis	4 to 5 ,,	5*s.*, 7*s.* 6*d.*
C	pulchellum	4 to 6 ,,	3*s.* 6*d.*, 5*s.*
I	Rœezlii	3 to 4 ,,	5*s.*, 7*s.* 6*d.*
C	Rossi majus	8 to 12 ,,	2*s.* 6*d.*, 3*s.* 6*d.*, 5*s.*
C	triumphans	3 to 4 ,,	3*s.* 6*d.*, 5*s.*
I	vexillarium	2 to 3 ,,	5*s.*, 7*s.* 6*d.*
S	Oncidium ampliatum majus	3 to 4 ,,	5*s.*, 7*s.* 6*d.*
C	aurosum	4 to 5 ,,	3*s.* 6*d.*, 5*s.*
I	bicallosum	3 to 4 leaves	3*s.* 6*d.*, 5*s.*
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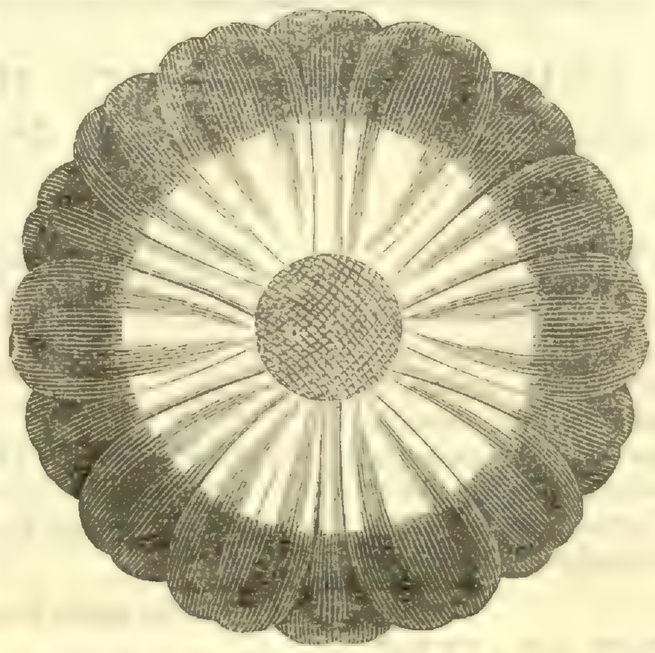

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THE
Gardeners' Chronicle.
SATURDAY, JUNE 4, 1887.

HAGLEY HALL.

THERE was a park of 300 acres here as early as the reign of Edward III., but the original family seat of the Lyttletons was at Frankley, five miles distant, where Judge Lyttleton and his son and successor lived in splendour during the reign of Edward IV. The latter, dying in 1508, was buried in the abbey of Hales Owen. Thomas Lyttleton, of Frankley, was created a baronet by James I., and Prince Rupert having burnt his house during the Civil War, to prevent its capture by the opposite party, the family removed to Hagley. An antique and half-timbered house stood at one time in the old park near the site of the present capacious mansion. This old mansion was pulled down, and the new one built by Sir Thomas Lyttleton above-mentioned, who also enlarged the park, which now rises gradually to higher levels from the house towards the ridge of the Clent Hills, a mile or more distant. You may traverse this steep, long mile by a path leading past Milton's seat beneath a Sycamore commanding a wide landscape, and bearing an inscription beginning—

"These are thy glorious works, parent of good,
Almighty!"

Hard by is "The Hermitage," inscribed with tender and touching verses from *Il Penseroso,* these among the rest—

"And may at last my weary age
Find out the peaceful hermitage."

Still climbing you presently pass that very questionable architectural device called by Walpole "a ruined castle built by Millar." Immediately beyond is the boundary of the park and a gate, and from that spot a short upward slope of greensward leads to the ridge of the Clent Hills. Four stones of the last century, called Druidical, but planted here by the first Lord Lyttleton,

mark the summit which forms a *rendezvous* in summer for crowds of excursionists from the populous towns of this district. We are here on the green borderland of the Black Country. On the north Brierly Hill marks the seat of some well known ironworks; in the north-east Dudley Castle presents the singular contrast of a Norman feudal pile in the heart of the Black Country. In the same direction, ten miles distant, is the famous town of Birmingham, and beyond, you can distinguish the chief prominences of the country as far as Tamworth. In the opposite direction, a little to the west of Louth, at a distance of 25 miles, the massive towers of Worcester Cathedral pleasantly recall the varieties of an English landscape, and the contrasts which lend salt and savour to our social life. Birmingham in front and Worcester in the rear! The same wide landscape also includes the vales of the Severn as far as the hills of Malvern, the groves of Madresfield, the Herefordshire Beacon, and the Cotswold Hills. A small town for this populous region, though it holds now nearly 20,000 souls, lies in the plain four miles to the north, having a spacious church on a hill containing the dust of the sixteenth and seventeenth century Lyttletons, including Sir John, who judiciously married Bridget, daughter of Sir John Pakington, and an heiress. It was he who purchased this manor of Hagley of the Earl of Ormond in 1564, using it as a hunting seat. He was M.P. for Worcestershire, a man of much importance, and a holder of valuable offices in the reign of Queen Elizabeth, he died 1590.

In the graveyard outside the church—fit resting place for a pastoral poet—lies the poet Shenstone, the friend of Sir Thomas the improver, of later date than the last-named by 160 years, and, like him, M.P. for Worcestershire, and a Lord of the Admiralty under Sir Robert Walpole's government. Near the town is the former residence of Thomas Shenstone, gentleman, who farmed an estate which his eldest son, the poet, inherited, and made famous by his landscape gardening. Dr. Johnson says of him, "His delight in rural pleasures, and his ambition of rural elegance, induced him to point his prospects, to diversify his surface, to entangle his walks, and to wind his waters, which he did with such judgment and fancy, as made his little domain the envy of the great and the admiration of the skilful, a place to be visited by travellers and copied by designers." The Leasowes have changed hands several times since this was written, the famous *ferme ornée* of the past has lost its ornamental character, and its vases and urns and arcadian masquerade, which the taste of the last century permitted, have disappeared from the scene.

That delightful writer, Isaac Disraeli, has sketched Shenstone and The Leasowes in his "Domestic Life of a Poet" in the *Curiosities of Literature*. We must, however, return to Hagley, whose improvements by Lord Lyttleton from Shenstone's designs were celebrated by the poet in pleasing verses, these among others:—

"But now, nor shaggy hill, nor pathless plain,
Forms the lone refuge of the sylvan game,
Since Lyttleton has crowned the sweet domain
With softer pleasures and with fairer fame."

A broad straight road runs from the village to the church, and the house stands within the park on the right, open to the view. The scene around is perfect of the kind, including, as it does, fine timber, a village not too near, a sacred edifice hard by, and the park coming close up to the windows. The park has been described by Horace Walpole as "a hill of three miles, but broken into all manner of beauty; such lawns—such woods—rills, cascades, and a thickness of verdure quite to the summit of the hill, and commanding such a view of towns and meadows and woods, extending quite to the Black Mountains in Wales." I am indebted to Mr. Palmer for showing me the park, as well as the pleasure grounds and gardens, which are his special care.

Other laudatory pens besides those of Pope, Shenstone, Thompson, and the accomplished Horace Walpole, have been engaged upon Hagley. The following verses, with many others, were achieved by a local poet about fifty years ago:—

"Here Pallas dwells, she built these stately towers
On classic ground, and near Parnassian hills
She formed these smiling lawns, these solemn bowers,
These ever meand'ring streams and ever trickling rills."

Except in the eighteenth century, which covered the face of the country with many ugly features, the leaden shepherdesses and bedraggeled busts of a mock Arcadia have not been much countenanced in the gardens of this country. The climax of that kind of ornamentation was reached at Stowe under the liberal patronage of Lord Cobham, with the approval apparently of all his friends, including Pope himself. Hagley in the time of Shenstone was too artificially decorated. It had its Porch of the Temple of Theseus on a hill, with an obelisk on another prominence. It was called, like Stowe itself, the British Temple—very British, since it included a statue of Frederick, Prince of Wales, for whom was written the famous epitaph—omitted here, but commencing—

"Here lies Fred, who was alive and is dead."

Most of the commemorative erections at Hagley in the last century were, however, of a much more respectable character, and some of them, with their inscriptions, remain. You meet with them appropriately scattered in dells or on knolls of the park, and they impart to this interesting place a quite unusual charm. Among them is Pope's memorial urn, bearing the following inscription:—"The sweetest and most elegant of English poets, the severest chastener of vice, and the most persuasive teacher of virtue." On another urn we read as follows:—"To the memory of William Shenstone, Esq., in whose verses were all the natural graces, and in whose manners was all the amiable simplicity of pastoral poetry, with the sweet tenderness of the elegiac." This inscription on a rough seat is perhaps a little trite:—"Sedis contemplationis. Omnia vanitas." In this less classic age you may read sometimes the commonplace appeal, "Never cut a friend."

Hagley Hall may be described as a portly building, more commodious than elegant, right angled, full of rooms, with a good hall 28 feet square—a house of plain exterior, and very comfortable within. Its pictures and decorations are worthy of the scholarly Lyttleton. It should be added that the first Lord Lyttleton, but not the founder of the family, was a Chancellor of the Exchequer in 1757, and an author and poet who made gardens his frequent subject.

As in the case of others of his name, his associates were the men of genius, the authors and artists of his time. His descendant, the late Lord Lyttleton was known for the happy incongruity of his pursuits, as one of the most scholarly noblemen in England, a constant student, almost a trifler, at times when Greek and Latin verses were concerned, and also as a man of the most active practical ability, an excellent Lord-Lieutenant, and an assiduous and downright labourer for the public good, especially in all that concerned the welfare of the masses. Conscious as he must have been of the good qualities of the Lyttletons, and of the talent and excellence they have manifested during three centuries, he consistently made ample provision for their continuance. His wife was the sister of Mrs. Gladstone. *H. E.*

FICUS BENJAMINA.

This very ornamental shade tree, a native of the East Indies, has been often recommended in the Reports of the Botanical Department, Jamaica, as a very effective tree for avenues in dry tropical districts. It has, as is well shown in the engraving (fig. 139), a graceful drooping habit, and its evergreen foliage is of so bright and attractive a character, even in the driest season, that few trees can surpass it for purposes of shade and ornament. It is readily propagated by the process known as circumposition. This is accomplished by placing a piece of fine copper wire tightly round a branch at the point where it is proposed to take it off. Round this area is placed a Bamboo joint, split in half vertically, filled with soil kept moist. In a short time, especially in the rainy season, roots will be copiously emitted above the stricture, and when this is done the new plant is gradually severed from the parent stem. Plants from 3 to 5 feet in height are thus easily produced, which soon grow into large shapely trees. The photograph from which the engraving has been prepared was taken, at my request, by Mr. J. V. Sherring, F.L.S., in 1885, from a tree growing in the Parade Garden, Kingston, Jamaica. *D. Morris, Assistant-Director, Royal Gardens, Kew.*

NEW OR NOTEWORTHY PLANTS.

ARISTEA PLATYCAULIS, *Baker, n. sp.**

This is a very distinct new species of the genus Aristea, remarkable for its flattened stem and branches, which are nearly as broad as the leaves. It was flowered this summer by Mr. J. H. Tillett, of Sprowston, near Norwich, who received it from Port Grosvenor in Pondoland, in the eastern regions of Cape Colony. The genus Aristea has its head quarters at the Cape, and extends to Abyssinia and the highlands of Madagascar.

Root-leaves ensiform, firm in texture, bright green, a foot long, an inch broad. Inflorescence an ample panicle, 8—9 inches long, with all the rachises much flattened, the main one ½ inch broad; produced branches about five, the lower overtopped by their subtending leaves; flowers in dense clusters, with short pedicels, and small scariose, lanceolate bracts. Ovary green, globose. Perianth-segments oblong. blue, ¼ inch long. Stamens and style shorter than the segments. Fruit oblong, ⅙ inch long, obtusely angled, brown, rugose.

Allied to A. compressa, Buchinger, of Natal. *J. G. Baker.*

Agave (Littæa) Henriquesii, *Baker, n. sp.*†

This is a new species of the marginate Agaves, intermediate between A. xylicantha, Salmdyck (*Bot. Mag.*, t. 5660) and A. horrida, Lemaire (*Bot.*

* *Aristea platycaulis*, Baker, n. sp.—Foliis ensiformibus rigidulis viridibus, caule lato valde compresso ancipiti laxe foliato, floribus dense cæspitosis capitulis in paniculam amplam dispositis, bracteis parvis scariosis lanceolatis, perianthii segmentis oblongis parvis cœruleis, genitalibus segmentis brevioribus, fructu parvo oblongo subrugoso loculis dorso rotundatis.

† *Agave (Littæa) Henriquesii*, Baker, n. sp.—Acaulis, foliis paucis dense rosulatis oblongo-lanceolatis bipedalibus viridibus margine continuo fusco apice pungente dentibus latis deltoideis cuspidatis interdum geminis prædito, pedunculo (paniculæ rhachi incluso) 12—14-pedali, floribus permultis in paniculam subspicatam elongatam dispositis, ovario oblongo-trigono, perianthii tubo brevissimo, segmentis lanceolatis viridi-brunneis, genitalibus longe exsertis.

Mag., t. 6511), with prickles of the same character as in the former, but with leaves of a very different shape. It is now in flower at the Botanic Garden at Coimbra, and these notes are drawn up from a sketch and specimens sent to me by post by our valued correspondent, its director, Dr. Henriques, after whom I have named it.

Acaulescent, with a dense rosette of leaves 4 feet in diameter. Leaves oblong-lanceolate, bright green, 2 feet long, 5 inches broad at the middle, narrowed gradually to the base and pungent apex, continuously margined by a broad dark brown horny border, from which arise spreading deltoid prickles with a very broad rounded base, which are about a quarter of an inch long, and occasionally confluent. Peduncle, including the inflorescence, 12—14 feet long; spike-like panicle quite as long as the peduncle proper. Ovary green, oblong-trigonous, above 1 inch long; perianth-tube very short; segments lanceolate, 1 inch long, tinged with dark brown. Style purplish-brown, exserted 1¼—1½ inch beyond the tip of the perianth. Filaments reaching nearly to the tip of the style.

According to the sequence followed in my monograph in the *Gardeners' Chronicle*, 1877, it must be placed beside A. Vanderwinneni, Jacobi, and A. Demeesteriana, Jacobi, two species about which very little is known. No doubt it is a native of Mexico. *J. G. Baker.*

Scuticaria Hadwenii.

Both the species of this genus are well worthy of the attention of Orchid growers, not only on account of the beauty of their flowers, but also of their singular habit and appearance. S. Steelii, the Demararan representative of the genus, is a well-known plant; but S. Hadwenii, which hails from Rio Janeiro, does not appear to be quite so common, though the flowers are not less beautiful. The remarkable whip-like, pendulous leaves of the latter are much shorter than in S. Steelii, though otherwise very similar. A flower just to hand is 2½ inches across, the sepals and petals buff-yellow, very heavily blotched with brownish-red, the lip lighter in tint, with flesh-coloured radiating lines. A figure of the plant may be found in the *Botanical Magazine*, t. 4629, under the name Bifrenaria Hadwenii. The fact is, this species was referred to Bifrenaria on account of its possessing stipitate pollen masses, while S. Steelii was originally placed in Maxillaria on the assumption of their being sessile. Both, however, agree in this respect, though in Hadwenii they are more distinct than in the other. The pollinary apparatus is very singular in this genus. The pollen masses are four in number, in two pairs, each pair being connected with the crescent-shaped gland by a short but distinct stipes. B. Hadwenii first flowered in this country in June, 1851, in the collection of Isaac Hadwen, Esq., of Liverpool, after whom it was named. *R. A. R.*

Fig. 139.—Ficus benjamina. (see p. 732.)

Foreign Correspondence.

PARIS.

The boulevards, especially the newer ones, are just now a flower show in themselves, for though the weather has been as bad as in England, the Horse Chestnuts of the Tuileries gardens and the streets are as full of rich leafage and delicately tinted flowers as if the spring had not been belated. The Lilacs are at last coming out, and the bedding-out in the squares is completed. My visit to the flower show was effected on one of those bright, warm, sunny days when—except for the deafening roar of the traffic—it would be difficult to believe oneself in the heart of a great city, everything so bright and *riant* that no wonder our American cousins think of it as the place where the good Yankees go to. Indeed Paris is full to overflowing, and the big caravanserais are turning the strangers from their doors by the score, and distracted paterfamilias has to drive from place to place to find shelter for his belongings. Sir Trevor Lawrence is here, and I think I caught sight of your Editor also; but if so, he did not do his duty at the Congress. As for the show, well, it was not first-rate, but a fair second—very large, very diversified, offering numerous suggestions for getting away from London stereotypes. It was held in a large *pavilion* at the back of the Palais d'Industrie, in an adjoining tent, and in various *annexes* besides, overflowing into the garden around, in which latter place also a band discoursed excellent music, and white-aproned waiters dispensed excellent "bock."

Close to the entrance was a group of Marguerites, consisting of some six or eight monster plants, faultlessly dome-shaped. One I measured was 8 metres 70 c. in circumference, and that was not the biggest. It was stated to be six years old, and was profusely flowered. I must not say it was as ugly as it was big, for other people did not think so, as I noticed most of them were marked *vendu*, one for a famous restaurant. Hard by was a large bed of Aloes in flower, wonderfully rich in colour. These were far better worth seeing than the huge umbrellas of Marguerites, and were exhibited by M. Simon, Rue Lafontaine, St. Ouen. Two collections of Conifers were worth passing notice for the size and beauty of specimens, but they comprised nothing new, and not much rare. The best came from M. Defresne, of Vitry, to whom was awarded one of the Prix d'honneur. The interior of the hall was bordered with flowering Rhododendrons and Azaleas of but medium quality, but resplendent with colour. The tent was similarly lined with Roses in enormous quantities,

but you need not come to France to see Roses, and indeed had much better stay away. MM. les Rosièristes would do well to see how we perfidious ones manage to grow, and to show what they raise.

The Orchids were numerous and prettily arranged in a circle in the centre of the building, the interior of which was formed of a grass plat, in the middle of which a policeman was posed—necessary, perhaps, for people here will see with their fingers as in England, but rather incongruous. Had the central bed of turf been raised, so that the Orchids might have formed a circlet around it, the effect would have been better. The finest collection, to which the prize of the President of the Republic was awarded, came from M. Finet, of Argenteuil. M. Massange, of Louvrex, had a nice group of thirty; while M. Peeters, another Belgian, carried off the Gold Medal for a fine collection. The Orchids were by no means up to our standard, but then we are spoiled. A critical study might have removed this impression, but I had not the advantage of a private view, and the Orchids were as attractive to the public as they are in London, so that I could see but little beyond the imposing police officer in the centre—a hint to Professor Reichenbach for a name for his next new Orchid—commemorate the policeman! I did, however, observe, that the singular and beautiful Oncidium Brunleesianum (Heavens! what a name for a Frenchman), recently figured in these columns, was exhibited. M. Regnier exhibited some novelties from Cochin China in the way of Cypripediums, but the peep I got at them between people's elbows did not reveal much difference from C. niveum. Saccolabium miniatum was remarkable for its bright orange colour, and Habenaria militaris was remarkable for its Goodyera-like leaves of a dull brownish-lilac spotted with white. M. Monten Olivet showed a nice group of terrestrial Orchids, and M. Cappe a pretty little selection of Cypripediums. Bromeliads were largely shown from the Luxembourg garden, as also by M. Chantin. It is not easy to account for the little popularity these plants enjoy in England. Here they are used as *plantes d'appartement*, for which purpose they are well adapted. Fancy seeing them on a flower-stall out-of-doors in the market-place of a country town!—yet I have seen them so shown in various parts of France. Tuberous Begonias were very finely shown by M. Brechet, gr. to M. Groult, of Vitry. These flowers are getting too large for beauty. Pansies—fancy Pansies, we should call them—are very popular here, and very well done, but used for spring bedding in the public squares they are ineffective. M. Falaise's collection was excellent. Annuals were shown by MM. Vilmorin et Cie., and a still better lot by M. Zecaron, but though well done had a thin weedy appearance, inseparable from these plants.

Cut flowers consisted mainly of Pæonies, which were excellent; Roses, which were poor; Anemones and Tulips, the two latter cruelly maltreated by being densely packed without a shade of a green leaf to set them off, as if the foliage of an Anemone was not as beautiful in its way as the flower.

Fruit was hardly to be expected, nevertheless there were some nice fresh bunches of Grapes, small in size, deliciously translucent, and comprising some sorts rarely seen at home. The mode of showing was in some cases very effective and beautiful. This consisted of a cylindrical or conical stand with tiers at intervals to which were attached bottles such as are used for keeping late Grapes. In the bottles were placed the bunches of Grapes, the metal stand being concealed by intertwining shoots and foliage of the Vine. As each bottle contained a separate bunch, the requirements of the judges could be as well met as by our tasteless butchers'-block style of exhibiting.

Vegetables were generally excellent, Asparagus and Lettuces better than ours. It is a puzzle to know why we cannot get Asparagus in such quantities as they do here—we could certainly grow it as well, if we chose. And why, O Covent Garden salesmen, do we have to pay in London double, treble, fourfold, and upwards to what we do in France? The very finest and biggest bundle seen in Paris was marked 6 francs, while an almost equally good one at Rheims might be had for three! Cauliflowers were good, and Leeks to make a Musselburgh man, or a Welshman tear his hair. Many of the vegetables were, by a little artifice, shown as in growth, and excellent they looked—better than in our greengrocer's shop style; Mushrooms also were shown, growing in mounds.

Bouquets were hardly commendable, and the huge enormities of dried and dyed grasses, marked *dernière création*, made one wish earnestly that they might remain so. Devices in fresh flowers, as hideous as gigantic, were also shown. We have outgrown these enormities, but they still linger on here, being used on occasions of ceremony.

The miscellaneous exhibits were as numerous and varied as ever; perhaps at another time I may send you a note of some of the things shown, but I cannot refrain from mentioning the models in linen or canvas of various wild and medicinal flowers, intended for use in schools. These were unpretending, but excellent, and were shown by MM. Hachette et Cie., the eminent publishers.

The Ghent nurserymen were well represented, but I saw no mention of either English or German exhibitors and jurors.

Such are some of the hurried impressions of a superficial survey made under disadvantageous circumstances. Critical examination was out of the question, but such as it was, it confirmed my impression—long ago formed—that if we have little to learn in the way of cultivation, we have much to gain in studying the French system of arrangement and showing. This was obvious, even on this occasion, when nothing special was attempted. *Correspondent, May* 28.

Euonymus with Golden-coloured Shoots.

I wish to speak, not of the golden variegation, but of the variety with golden shoots. This variety appears to me to be little grown, although of high merit. Two years ago the colour was magnificent; last year it was very weak, and this year it has been very intense. Why this difference? It is to this point that I would call your attention. This golden growing variety does not for some reason retain its colour as the season advances; the leaves, which were of a bright yellow, become more and more green—it is beginning to do so already; in support of which I send you a box containing specimens as follows:—1. The golden growing varieties of the common Euonymus, much less beatiful than last week. 2. The same, commencing to turn green. 3. The ordinary gree-growing variety.

There is a variety of Buxus which shows the same characteristics. The decorative effect of large clumps of it is considerable, but I am not aware that any advantage has been taken of it.

There are some Mahonias with reddish-green growths, the young leaves of which possess the most brilliant tints. All this rapidly vanishes after a few days. Horticulture certainly should employ effects of this nature more frequently. At a time when flowers are rare, truly hardy plants can supply the ornamentation. This coloration is ephemeral doubtless, but it is sometimes of an extreme intensity; the young growths of herbaceous Pæonies show a very brilliant colour—bright carmine; many flowers are not even so good.

Is not the admission of foliage plants a great gain to the art of gardening? The colour given by flowers produces grand decorative effects, and many plants can give an unlooked for beauty at a season when floral decoration is poor and deficient. *Max Cornu.*

Exhibition Tulips at Haarlem.

The Tulip parade beds in the nursery of E. H. Krelage & Son, Kleinen Houtweg, Haarlem, are now in full bloom. There are four beds of Tulips under two spacious tents, covering together an area of more than 7000 square feet. Two beds, each of 700 bulbs, contain the greatest possible varieties of the best Dutch sorts in violets, roses, and bizarres. Two other beds under a smaller tent contain each 840 different sorts, byblœmens and roses, all Flemish varieties, of the most brilliant colours, equalling those which were the models of the best Dutch painters of previous centuries. The Tulip show, which is now opened for the third time, is this season later than usual, and may last till the middle of June if the weather be favourable. It is the most splendid show of this specialty which has ever been held in Holland, and can scarcely have been equalled by any other, elsewhere.

The collection of late Tulips of every description planted in the nursery itself is very extensive, and contains everything good, and rare, in Dutch and Flemish varieties. Among the latter many are new, and not yet in commerce. There is likewise an unrivalled collection of Flemish breeders, violets and roses, in the most striking and brilliant colours, which are of interest, not only as breeders, but also as bedding Tulips. When they break, in the lapse of time, there is the probability that they will originate a large number of first-rate amateurs' varieties; but so long as this has not taken place, they will be merely valuable as bedding Tulips.

The colours range from pale porcelain to the darkest violet, from soft rose to the most brilliant red, much more striking than in Tulipa Gesneriana and similar sorts; there are also light and dark brown shades, and a few which are as near to black as this colour can be found in the vegetable kingdom, so that it can be said that Alexander Dumas' novel of the *Tulipe Noire* has become a substantial fact, in that there is a black Tulip, whose existence was doubted until now, generally. *X.*

LIVISTONA MARIÆ.

As this new Palm was referred to in the *Gardeners' Chronicle*, May 21 (p. 676), as being in cultivation at Kew, it may be well to put on record a few particulars concerning it, so as to fix the date of its introduction, and to leave no doubt as to what Palm is meant. L. Mariæ was discovered in 1872 by Mr. Ernest Giles, in South Australia, near Macdonnell's Ranges in lat. 24°, long. 133°. Here is what he says of the discovery in his book, *Geographic Explorations*, p. 13:—"Last night (August 31) was clear and cold; the thermometer went down to 24° by daylight, but upon the appearance of the sun the temperature rose rapidly. . . . We made but a late start in the morning; there was no other road than to continue following the windings of the creek through the mountain-bound glen. . . . Soon we had the gratification to discover a magnificent specimen of the Fan Palm [a species of Livistona allied to one in the south of Arnheim's Land, and now distinguished as the Maria Palm. Ferdenand v. Mueller, in footnote], growing in the channel of the watercourse with the drift of floods washed against its stem. It was a perfectly new feature to me, nor did I expect to find it in this latitude. I had certainly been on the look-out for such an object, as I had noticed portions of Palm leaves and branches in the flood-drifts against the butts of the trees in the glen. This fine specimen was 60 feet high in the bore. I obtained a quantity of its leaves for my kind and generous friend the Baron von Mueller. . . . Having found in this glen so many stately Palm trees I have called it the Glen of Palms." In his *Fragmenta Phytographiæ Australiæ*, vol. xi., p. 54, Sir F. von Mueller gives Fortescue River as a locality for this species. This river is on the north-west side of the Australian continent, in lat. 21° 28′ S., long. 116° 30′ E., and about 1000 miles to the west of Giles' Palm Glen. This extends the distribution of the genus Livistona from the east coast right across to the north-west coast of the Australian continent. There is a note in Bentham's *Flora Australiensis* under Livistona humilis in reference to this Palm found by Giles, the leaf of which, Bentham thought, "looks rather like that of L. australis." The same may, however, be said of the foliage of L. australis and L. humilis. The principal difference between L. Mariæ and the two other species of Livistona found in Australia appear to be in the characters of the fruits.

The plants of L. Mariæ at Kew were raised from seeds presented by Sir F. von Mueller last year.

It may be convenient to note here that L. humilis, which has also been called L. inermis and L. Leichardtii, is neither dwarf nor unarmed. Mueller says, "As Bentham thought, L humilis seems merely a young state of L. inermis, which is not unarmed, and both names are therefore misleading." The former name must, however, stand, but instead of the height of this Palm being only "stems 4 to 6 feet high," it must be said to attain 50 feet in length of stem, as shown by the specimen now growing in the Palm-house at Kew. *W. Watson. Kew.*

NURSERY NOTES.

MR. WARD'S, WALLWOOD NURSERY, LEYTONSTONE.

This is one of the large number of nurseries thickly located on the outskirts of London, the productions of which go principally to supply the ever increasing demands of Covent Garden, and the numerous provincial towns that draw much that they require in the way of plants, cut flowers, and fruit, from this great central emporium of garden produce. It is now about ten years since Mr. Ward purchased the land here, and begun to erect vineries and plant-houses, which are now an acre in extent. When, previous to commencing his career as a market grower, Mr. Ward was gardener to the late J. Wilkins, Esq., at Leytonstone, those who were then in the habit of attending the metropolitan horticultural shows will not need to be told that he held a prominent place amongst the leading exhibitors of Orchids, stove and greenhouse plants, Heaths, and Pelargoniums, all of which invariably bore the stamp of a master hand; the Pelargoniums especially, that he used to stage have never been surpassed, and rarely equalled, either in the size or condition of the plants. It is scarcely needful to say that the keen observation and unceasing attention that marked the successful exibitor have been brought to bear on the things which, with like success, he cultivates for market.

Late Grapes are one of the leading features; the kinds grown are Gros Colmar and Black Alicante, which occupy seven large houses, ranging from 70 to 130 feet long by 15 to 24 feet wide. The Vines are planted inside, mostly from 2 to 3 feet apart, the borders occupying the whole of the space within the houses; the roots have the means of getting outside, yet more dependence is placed on those that are inside, as with their wants well supplied, the inside borders are thickly packed with active feeding fibres. The Gros Colmar, intended to come in first, are started at the end of February, and are ripe about the end of September, at which time the cutting is begun. The Alicantes are not started before the latter end of April or the beginning of May, fire in all cases being used from the time of starting until the fruit is ripe. Like most of the leading market Grape growers Mr. Ward manures liberally, and is a believer in varying the manure used. Last season Jensen's fish potash has been largely used, with an occasional application of nitrate of soda. These are washed into the borders with copious supplies of water, which is given in quantities such as would surprise those who look upon an occasional application to the inside roots as sufficient, leaving those that are outside to depend on what comes from the clouds. At the time of my visit—the beginning of December—the earliest Gros Colmar were cleared, but I saw some of the fruit in several places during the autumn. The finish was perfect, the berries of unusual size; in fact, the verdict of several of the leading trade growers was that Mr. Ward's Gros Colmars were this season the best in the market. Several houses of this variety and Alicante were untouched, and would be kept for the first two months of the new year. The Vines in these houses were alike carrying full crops of beautifully finished fruit, consisting of medium-sized bunches, which in the case of those intended to hang until after Christmas are reduced in size at the time of thinning by removing the shoulders, smallish bunches being easier kept clear of decayed berries, and at the same time being better liked by the generality of buyers. The borders in these late houses were covered with a thick coat of straw to keep the moisture from rising, without necessitating the soil being allowed to get to that extreme state of dryness sometimes practised. In common with others who take a reasonable view about the condition of Vine roots, Mr. Ward looks upon the comparatively dry state it is requisite to keep Vine borders in where late Grapes are hanging, as a necessary evil, and as soon as the fruit is cleared from a house the border is at once thoroughly soaked with water, to secure which the surface is formed into miniature dams enclosed by ridges of earth. These are repeatedly filled so as to enable the water to moisten the whole mass of soil down to the drainage. Directly a vinery is cleared of the fruit it is filled with some or other of the different kinds of plants grown, and in this way made to do duty until the Vines are again started.

Palms.—Of these immense numbers are grown, occupying a number of long houses. The principal sorts grown are Kentias, Cocos Weddelliana, Seaforthia elegans, Phœnix reclinata, and Corypha australis; these are now nearly all home-raised. At one time the seed of such kinds as the Kentias was difficult to secure in a condition that it would germinate, and which entailed much loss and disappointment, it not unfrequently happening that when £8 or £10 were spent in Kentia seed it failed to produce a single plant; now it comes to hand in a state that can be relied upon. The stock of these, the best of all greenhouse Palms, in common with the other sorts grown, were in beautiful condition, showing the advantage of the plants being allowed sufficient room, and their being located in good light houses, from the time the seedlings appear until they are ready for sale.

Ferns occupy a large space; the principal sorts grown are Asplenium bulbiferum, Cyrtomium falcatum, Dicksonia antarctica, Pteris tremula, P. cretica major, P. cretica cristata; the last-named is one of the most beautiful of all Ferns that answer for market work. It is an excellent grower, the extremities of the fronds coming just sufficiently subdivided to give the plant an elegant effect; in appearance it is very similar to the Chiswick crested variety of P. serrulata, with the advantage of its coming true from spores, whilst the variety of P. serrulata named will not, consequent on which, the slow course of propagation by dividing the crowns has to be followed with it. The major form of P. cretica is also much superior to the ordinary variety. Dicksonia antarctica is well known, in the form of large tree-like specimens; but it has not hitherto been nearly so much used for general decorative purposes in a small state as it deserves; when well managed in 5 or 6-inch pots its pretty appearance, combined with the hard-texture and enduring nature of the fronds, is such as to make it equal to most of the popular kinds. It is here grown up to a useful size in fifteen months, from the time the spores vegetate. Pteris tremula gets from 2½ to 3 feet across in twelve months; this is one of the best decorative Ferns, a remarkably free grower, stands well in living rooms, and is elegant in appearance.

Chrysanthemum frutescens Etoile d'Or (yellow Marguerite) is grown in quantity. The narrow, and the broad-leaved white varieties keep up the supply of flowers in winter and summer.

Celosia pyramidalis was represented by large numbers, that keep following on in succession all through the summer and autumn. The strain is a very good one as regards the habit of growth in the plants as well as the brilliancy and diversity of the colour of the feathery flowers.

Heaths, of which considerable numbers are grown, were represented by the usual winter-flowering sorts. These, and Genistas, fill several houses, and are remarkably well done.

Aspidistra lurida variegata is one of the best of all subjects for growing in halls and rooms, as it will live and maintain a healthy appearance in an atmosphere where not many things can be kept in presentable condition. This plant is one of the few that are not likely to be overdone, as it increases much slower than most things. The plants here are larger and better done than one usually sees them, with enough white colouring in the leaves to make them attractive.

Mignonette.—For some years this fragrant favourite has been grown here in a way that, taking into account the small pots in which it is grown (in 48's) I have not before seen equalled, either for the size and vigour of the plants, or the profusion of flowers they carry. The first sowing is made in July, the plants from which are in flower early in March, successional sowings being made so as to keep up a supply through the summer. Of the first sowings one plant is grown in a pot; from the spring sowing, several together. The variety grown is a selection from the French sort—Matchet—and which Mr. Ward considers unequalled for pot culture, both for the robust habit of the plants, and the length and substance of the flower-spikes, those on the plants selected for seed frequently reaching a length of 18 inches: it is a red-flowered variety. After the plants are housed in autumn they are stood in single rows on shelves that run along over the paths down the centre of the houses; here, close to the glass, they keep short and stocky. The plants from the early sowings are stopped once, and the side shoots are all tied out horizontally, so as to secure well furnished bottoms. About 6000 pots are grown.

Fuchsias.—Of these, quantities are struck in December and January, to have them in flower early in spring.

All the houses are span-roofed, their ends standing north and south, except those against the boundary wall of the nursery, which are three-quarter span. Needless to say, they are constructed in a way to give all the light possible; this, combined with close observation as to the extent which each kind of plant will bear the regular use of stimulating manures, and strict attention to their requirements in other respects, results in the high standard of cultivation here attained. *T. B.*

ORCHIDS AT THE CLAPTON NURSERY.

It is always a treat to see the great summer flowering Cattleyas and Lælias, together with the magnificent strain of Odontoglossum crispum, at Messrs. Hugh Low & Co.'s, from now onwards until the very hot weather comes in. Their strain of Cattleya Mossiæ which produced the certificated C. M. superbissima is matchless, and among the hundreds of flowers now open there are several which press hard on that magnificent variety, both for size and colour; but the gem of the lot at present is a grand pure white Cattleya, something like a massive C. Wagneri, with very bright chrome-yellow in the throat, and the most charming pure pink veining at the tip of the finely fringed labellum—a very great beauty. The Cattleya Mendelii and Lælia purpurata are also flowering in scores of fine varieties, and the large span-roofed house of Odontoglossum Alexandræ exhibits numerous varieties, in which the spotting and marking are much varied, but on flowers all of the same perfect form, without a single starry-petalled one among them. The fine batches of Odontoglossum Roezlii, Angræcum sesquipedale, and the Cypripediums, are also unusually good; and in the Phalænopsis-house was a new form of P. Sanderiana—not pink, but of that white and yellow seen in Cœlogyne cristata Lemoniana.

SCHOMBURGKIA TIBICINIS.

In the great Cattleya-house at Messrs. Jas. Veitch & Sons, which is just now a splendid sight with Cattleyas and Lælias in flower, several plants of this fine old Orchid are blooming freely, and quite disproving the report that it is not a free flowerer. If grown in an airy and light house it produces with great freedom its tall spikes of fine crimson flowers, of which the labellums are a perfect study. In the same nursery, in the Odontoglossum show-house,

which is as well filled with flowers as the Cattleya-house, a quite new hybrid with O. triumphans is in flower, and many other beautiful things not often seen. The rare and handsome Cœlogyne tomentosa, a dried specimen of which was first sent by Lobb to Messrs. Veitch, is just over, and the handsome C. Dayana still in flower.

ONCIDIUM UNDULATUM.

In Mr. W. Bull's fine Orchid show a good example of this rare plant is in flower. In size and shape it may be compared with O. macranthum; its sepals are of a bronzy hue, the broad petals being of the same tint on the halves next the column, but the outer halves are pure white barred towards the middles with violet, which also merges into the bronze colour of the inner halves of the petals. It is very beautiful and still very rare.

ORNITHOCEPHALUS GRANDIFLORUS,

A plant with the habit somewhat of a Burlingtonia, is also in flower at Mr. Bull's. It bears pendent racemes of very curiously formed white flowers with emerald-green centres, and is a beautiful curiosity, which is the more admired the more it is examined.

POTATO CULTURE.

(*Continued from p. 680.*)

KEEPING always in mind that we cultivate the Potato almost solely for the sake of the starch in the tubers—for the other compounds present are in but insignificant quantities—this question arises, Is there really any advantage in aiming at producing large tubers? The green part of the plant can during its lifetime elaborate only a certain quantity of starch-forming elements under conditions that will be presently discussed. The tubers cannot form more starch than there is material to form it from, supplied by the green portion of the plant. (The term "form" is here used rather than "store" or "secrete," because there is no proof that any starch passes down to the tubers as starch. [Whatever passes from the leaf to the tuber must necessarily be liquid. ED.] The "formation" in the tuber involves other questions which follow. For the question under consideration it is unimportant whether the "formation" or "storing" view is adopted.) Some varieties have developed the habit of forming large tubers, some small, some few, some many. The total amount of starch formed depends on the extent of development of the stem and leaves [and the duration and intensity of the light to which they are exposed]; at least such is the conclusion drawn from experiments that have been devised to decide that point. Does it make any difference from the "practical use" point of view, whether that starch is formed in a few large or in many small tubers? Cooks may, perhaps, have something to say on the subject of trouble in paring a quantity of small Potatos, but they have also something to say on the greater readiness with which small Potatos are cooked, and frequently large ones are cut up. But the point is this:—Is a large tuber in any way superior to a small one, except for the purpose of looking grand at a Potato show? Unless size can be shown to influence the quality of the starch (and as this is a definite chemical compound it does not appear that it can), or unless size has influence on keeping properties, then either large or small tubers would appear to be equally useful.

This question leads to another closely connected with it—Can a greater total amount of starch be obtained from a Potato that has the habit of forming large tubers than from one with the habit of forming small? That is, can the former be "induced" by cultivation to so increase the number of large tubers that a greater amount of starch can be obtained, than can be obtained from any increase in the number of the small? Have any experiments been directed to this? If so, the kind of recorded observations that are wanted are these. Is there any increase in the total stem and leaf area in plants from year to year as they increase the size of their tubers? That the plants can in some way be induced to increase the size of tubers is well known. In the *Transactions of the Royal Horticultural Society for* 1826 is an account of the early experiments on S. Maglia, with special references to the fact that the tubers were, from the size of marbles, increased considerably. A record is made of the change of soil, but unfortunately no note is made of the development of leaf and stem. What is wanted in experiments on increasing size or number of tubers is a record of the total leaf area in the manner adopted by Stephen Hales in his *Vegetable Staticks* (1727). Modern theory says that the total starch depends directly on total leaf area [plus light and temperature], but when we want to compare practice with theory, and to learn how far increase in total tuber bulk has been accompanied by increased total leaf area, records seem to be wanting. It would be by no means a difficult, or intricate calculation for a Potato grower to select some of his largest and some of his smallest grown plants, ascertain their leaf area during life, and then, when the Potatos are lifted, ascertain the total tuber weight, and estimate the thickness of the tuber skins, whose weight would have to be deducted. We might then know whether we yet have the full explanation of the total amount of starch a plant can form in the tubers.

There is another question connected with the size of tubers—that condition known as "waxiness." It does not appear that it is at all clear what "waxiness" is, or on what it depends. We are so very deficient in published analyses of Potatos, except as "the mean of many analyses." Every experienced cook can tell a Potato that will eat "waxy" as soon as the peeling is commenced. But what is the chemical difference between a waxy Potato and one that is not? Or is it that the difference is not a chemical one at all, but only molecular or physical? But practical people, who do not attend to chemistry, ought to be able to say whether size of tuber has or has not any connection with proneness to a waxy condition.

Then, again, has size any connection with keeping qualities? What are the changes that occur in a Potato during the time it is pitted is a subject that does not appear to have been studied. Some deny that any changes take place. It is well known, however, that moisture is given off, and the question arises, whether this is in any way connected with chemical changes, or whether this moisture is simply from the skins or from the water surrounding the starch granules? On this point we seem as much in the dark as pitted Potatos themselves. We can but guess. Guesses, however, may direct experiment. Twenty pounds of small Potatos would give off more moisture than 20 lb. of large, if it is purely a question of evaporation. The question has commercial bearings. But further, if there are changes, and chemical changes, during pitting, if size has anything to do with these changes, then, if we knew all about these, we might be nearer understanding the formation of starch in the tubers.

(*To be continued.*)

INDIAN ORCHIDS.

THE CONDITIONS UNDER WHICH THEY GROW.—The hills in Burmah, India, and Ceylon are naturally the localities in which Indian Orchids are found growing in the greatest profusion. In the hill ranges the rains commence earlier than in the plains, and throughout the dry season the Orchids receive a certain amount of moisture at night from the mist prevailing in all the higher ranges. On the hills which separate Siam and Burmah the temperature ranges from an extreme of 80° at midsummer to 40° in the winter. Here some well known Orchids are found growing together on the rocks.

Dendrobium Jamesianum.—The variety of D. Jamesianum found on the Siam frontier is more robust than the variety we receive so plentifully from the Arracan Hills; the bulbs are plumper and shorter. In Arracan this plant grows on trees, the growths being slender and very floriferous. If imported after the flowering season this plant frequently reaches England in a very attenuated form. On the Siam frontier this plant grows on the rocks; being more robust in habit it is not so much affected by flowering profusely, and it is a much easier form to cultivate in England, probably in consequence of it being found at a higher elevation than the Arracan form, and therefore accustomed to a lower temperature.

Dendrobium Findleyanum.—This Dendrobium is found growing with D. Jamesianum in the Siam Hills in great luxuriance. Heat and moisture in the summer, and a cool air in the winter, suit it. In Nature it is exposed to a considerable amount of sun, which ripens its new growths. Of the deciduous Dendrobiums, it is the first to flower in the winter.

Cymbidium tigrinum.—Associated with these two plants growing on the same rocky hills in the crevices of the rocks is found this pretty Cymbidium. It is a plant of easy culture, and bears a very large flowers in comparison with the size of the pseudobulbs. Many of the Cymbidiums are gross in habit, and only suited to large collections. In Cymbidium tigrinum we have a plant suitable for every collection, compact in habit, taking up very little room, and lasting a long time in flower.

Acanthephippium bicolor.—For many years it was supposed that this plant was found only in Ceylon. Some years ago, in one of his botanical excursions, Colonel Beddome found it growing in India, and I myself found it in profusion at Wallaghaut, in the Neilgherry Hills. This plant does not seem to accommodate itself well to the English Orchid-house; in England it is seldom seen to perfection, probably from want of sufficient moisture and heat; it grows at an elevation of about 2500 feet above the sea. The particular localities in which it is found are well known for their excessive rainfall. Ten inches of rain a day for many successive days is no unusual rainfall at Wallaghaut. In Ceylon it is also found where the rainfall is heavy. This plant grows on the ground in a compost of dead leaves and rotten wood, in which there is very little soil, the soil being washed out by the heavy rains.

Ipsea speciosa.—This pretty ground Orchid is also found in Ceylon and India associated with the above. The Ipsea, however, pushes its roots into the loamy soil, whereas the roots of the Acanthephippium permeate the accumulation of fallen leaves, and do not push themselves into the soil. *Emeric S. Berkeley.*

APHELANDRA CHRYSOPS.

THIS stove plant, of recent introduction (see fig. 140), is one of the most handsome species yet introduced, producing a fine golden inflorescence a foot in length, composed of four rows of compound ovate pointed bracts, proceeding from which are its flowers, which are of the same bright yellow colour. To add to its beauty, the plant has also strikingly variegated leaves, thus combining two attractive qualities, and rendering it one of the most desirable of ornamental plants. The leaves are of a mottled green, the variegation consisting of the principal veins being of a creamy-white colour. It was imported from Brazil, and received a First-class Certificate from the Floral Committee of the Royal Horticultural Society on July 13, 1886. We are indebted to the courtesy of Mr. W. Bull, the introducer of the plant into commerce, for the opportunity of illustrating it.

DISCUSSION ON THE AURICULA.

ONE of the most interesting discussions amongst the many that have characterised the meetings of the Horticultural Club resulted from the reading of Mr. Hibberd's paper on the origin of the Auricula. It will have been seen by the text of the paper (p. 678) that the author of the essay treated the subject in a novel manner by appealing to the Dutch pictures of flowers painted from 1570 (De Heem) to 1690 and later (Withoos, Van Huysum, Mignon), assuming that the artists followed Nature without regard to floral fashion or any special conventionalities of style. From these works it was deduced that striped Auriculas, now unknown, were plentiful from 200 to 300 years ago, and were probably the forerunners of the edged flowers, and the first stage of transition from the wild form, showing a variety of colours.

Mr. T. F. Rivers objected to Mr. Hibberd's estimate of the accuracy and excellence of the Dutch painters of flowers, contending that the French artists alone were capable of painting flowers with truth and taste, and had carried the art so far as to accomplish a brilliant success in painting white Roses on a white ground. The contrast between the two schools, he said, need not invalidate the argument founded on the pictures, for it was at least fair to believe that the Dutch painters put upon their canvas the flowers they saw, for their imagination was not equal to the creation of flowers for the purpose. As regards the range of variation of plants of pure descent, he would mention the many new fruits raised by his father, Mr. Thomas Rivers, to which he had himself added, in continuation of his father's labours. Take the Peaches for example; they were of pure descent; the Peach had never been hybridised. Certainly there was no known record or evidence of such an occurrence, therefore all Peaches were Peaches *pur et simple*. Yet how various in character, and not only different in size, season, colour, and flavour, but in the smoothness or otherwise of the skin, for Nectarines were true Peaches derived from the Peach-stone, and he had seen both fruits in perfection on the same tree, and even on the same branch. Therefore, observation of fruits tended to strengthen Mr. Hibberd's contention that the show Auricula is of pure descent from the Auricula of the Alps, for its range of variation is in no way exceptional.

Fig. 140.—Aphelandra chrysops. (see p. 736.)

The Chairman (Mr. John Lee) remarked that he had seen white and black Grapes on the same Vine, and on one or two occasions in the same bunch. The diversity of characters in Auriculas, therefore, does not present so great a difficulty as appeared to many who were unfamiliar with the variations of plants under cultivation.

The Rev. H. H. D'Ombrain remarked that variation in the Auricula was not a property of seedling plants alone, for established varieties, and those the most constant in their several classes, would vary at times. For example, autumnal flowers were often untrue, and a spring truss that rose from the centre of the plant was also liable to play false, so that even if stripes should appear they would not prove variation from the seed; and, consequently, were not necessarily evidences of hybridisation. Mr. Hibberd had placed on the table a pen-and-ink drawing of Hofley's Lord Nelson Auricula, in which the paste was cracked, and that was a common occurrence, and was, perhaps, from the biological aspects of the subject, a variation rather than an accident, more especially as the cracks were in radiating lines, showing how the corolla would separate into five petals were it to be cut down to the tube.

Mr. James Douglas said he had raised an immense number of seedling Auriculas, and had not seen a striped flower amongst them. Mr. Hibberd had probably not taken sufficient note of the difference amongst Auriculas in respect of the amount of meal on the leaves, for while some were loaded others were entirely destitute of meal. This appeared to weaken the argument for pure descent. The variety named Abbé Lizst, which was certificated at the exhibition of the National Auricula Society, April 26, was the only first-rate variety out of a batch of a thousand seedlings raised from seed carefully fertilised from the finest named varieties. But in that thousand there was found the greatest diversity of character, and although only one was worth naming, all were beautiful, and many had strong features of colour and form. As regards the raising of varieties having special character, he would remark that to obtain first-class green-edge flowers was the most difficult of all, but how that would tell in the theory of pedigree he would not conjecture. But he could perhaps, throw a ray of light on the question of descent, for to raise show Auriculas the seed must be derived from show Auriculas, and to raise alpine Auriculas the seed must be derived from alpine Auriculas. In the whole batch of a thousand plants he had referred to as including the beautiful Abbé Lizst, although their characters varied in all imaginable degrees, there was not a single alpine; for it should be remembered that in an alpine there is no proper paste, for the natural yellow of the zone surrounding the eye appeared, whereas in a show flower that yellow zone was covered with the white powder that constituted the paste. Another fact bearing on pedigree is that to raise good show selfs we must breed from selfs. The Rev. H. H. D'Ombrain remarked that seedlings of show varieties often flowered as selfs, to which Mr. Douglas replied, that the selfs raised from edged flowers were invariably bad, having no fixity of character and no quality as show flowers. And yet again, he had been raising varieties for many years from thrum-eyed flowers, and now he had so few pin-eyed flowers amongst his seedlings, that it appeared he had bred out the pin-eyed character from his strain of show flowers. The florists were justified in their preference for thrum-eyes, not only on the score of beauty, but in the fact that thrum-eyed flowers were more vigorous than pin-eyed, showing that the short styled arrangement was best for the plant. Thus his own experiences and observations led him to concur with the essayist in the doctrine that the alpines and the show flowers were of distinct origin, though it was evident that they were nearly related. It was curious that in a sketch from a picture by Van Huysum, which Mr. Hibberd had placed on the table, the flowers were all pin-eyed, and it was just possible that at the time the striped flowers were in vogue, pin-eyes were in favour. That the show varieties and the alpines might be persuaded to hybridise freely was rendered probable by a remarkable seedling shown by Samuel Barlow, Esq., at the National Exhibition, April 26. This was nothing less than a green-edged alpine. What was its meaning in relation to pedigree he was not prepared to say, but it appeared to open the way to new sources of knowledge, and was, apart from all that may result from it, a most interesting curiosity.

Mr. Daniel Dewar, of the Royal Gardens, Kew, was not disposed to accept Mr. Hibberd's doctrine in the form stated, for he had, as a cultivator of alpine Primulas, observed their great range of variation, and would prefer to agree with Professor Kerner in tracing all the forms—show flowers, fancies, and alpines—to Primula pubescens, in which, he felt satisfied, there were all the characters required. For example, in a batch of seedlings of this Primula, however carefully raised from isolated plants, the hybridising of which was not to be suspected, there would be the greatest variety of colour in the flowers, and very considerable variety in the leaves. Nor was this surprising, seeing it had been proved by Professor Kerner that Primula pubescens was a natural hybrid, and to represent its parentage had been by him designated Super-Auricula × hirsuta—a parentage that accounted for many of the various characters, as well as the variability of cultivated Auriculas. As for the range of variation, it extended to pure white in one direction, and to the deepest purple in another; and we had the cartilaginous tendency in the leaf and the floral bract, which so characterise the cultivated flower, while these features also are immensely variable. In some instances the bract was of great size, in others it was scarcely perceptible. Mr. Hibberd had thrown aside Primula Palinuri as a possible progenitor of the Auricula, but he might yet want it to account for the persistency of the bract. The Auricula of Clusius was no doubt the true Primula Auricula, which had gone out off cultivation, comparatively speaking, ere the cultivation of the flower became general; but P. pubescens had taken its place, and was at least a possible progenitor of the show flowers. And it was worthy of especial remark that P. pubescens had immense vitality, for it would live and thrive under the most varied and even adverse circumstances. That it had given birth to flowers of very distinct character was well known, and it would do so again and again, reproducing in every possible way the characters of its two parent species. The Primulas severally known as alpina (Reich.), helvetica (Don), hirsuta (Vill,), microcalyx (Lehm.), rhaetica (Gaud.), and villosa (Ait.), were but forms of pubescens.

The Chairman briefly summed up the main points in the discussion, remarking that such a meeting as the present was the best justification the Club could desire, and he would hope for more of such meetings as the sure means of increasing their numbers. They were deeply indebted to Mr. Shirley Hibberd for the paper he had placed before them, and to Mr. Douglas and Mr. Dewar for their practical and valuable comments upon it. He moved that their best thanks be given to those gentlemen for the intellectual entertainment they had afforded.

Mr. Hibberd acknowledged the compliment, remarking that he had kept clear of the pictures and descriptions of the sixteenth century botanists, for the sufficient reason that as they had not seen the florists' Auricula they could not describe it, and all that has been said about Matthioli, Clusius, and the rest, was beside the question. Those who relied upon such books for evidences of the origin of the florists' Auricula had not grasped the question, which was one altogether apart from the reintroduction of the wild Auricula to gardens. If he appeared to damn the sixteenth century botanists, it was not because he failed to appreciate their labours, but because they had been absurdly cited for evidence of things they had not seen, and that were actually non-existent when their books were printed. He concluded by moving a vote of thanks to the Chairman, and this being carried by acclamation the meeting separated.

The May-bug in Denmark.—The ravages of this insect in Denmark have become so serious that a bill is now under the consideration of the Danish Parliament, proposing that the cost of destruction of these insects shall be borne half by the State and half by the local authorities.

SOME NEW IRISES.

(Concluded from p. 674.)

I. lupina, *sp. n.*

Rhizome fleshy, creeping, the young buds, as in I. iberica, &c. (Oncocyclus group), soon swelling into a bulbous enlargement separated from the mother rhizome by a constricted portion.

Leaves about six to a tuft, rather narrow, 9 inches or more by ½ inch; erect, or very slightly falcate, gradually narrowed to a point, light green, faintly veined, not purple at base at any time.

Stem single flowered, about 6 inches high to commencement of spathe valves, hidden except for last inch by sheathing leaves.

Spathe valves two, long, narrow, 3 or more inches by ½ inch, reaching beyond the top of the tube, pale green, with parallel veins, persistent, scarious at the very tip only and that slightly.

Perianth tube about 2 inches, ovary trigonal, about ⅔ inch in length, both entirely hidden by spathe-valves.

Perianth segment, outer (fall), about 3 inches by 1¾ at broadest, broadly lanceolate, the broadly caniculate claw gradully expanding to the lamina which narrows to a rounded but pointed and toothed apex. The lamina reflexed on the claw at about right angles, with a gentle curve, and reflexed laterally on itself in its middle portion. The edge of the claw and the first part of the lamina is wavy only, but that of the rest of the lamina is serrate, becoming at the apex coarsely serrate. The body colour of the segment is in some cases a greenish-yellow, in others a purer yellow, marked, on the sides, for a third inwards with conspicuous thick irregular blotched and broken brownish-red veins. The median portion of the claw, and the median portion of the first third of the lamina is covered with several rows of hairs which in the middle are bright yellow but towards the outside yellow tipped with brown; in these parts the veining is obscured and hidden by the hairs. The median portion of the middle third is occupied by a conspicuous patch of rich dark red-purple, almost black colour, the jagged edges of which are continued into the veins. In front of this, reaching to the apex, is a band of yellow or greenish-yellow, with very faint veins.

Inner perianth segment (standard), 3¾ by 2⅓ inches, oval, with short claw, connivent, meeting above so as completely to cover the styles; the edge crenate, the sides in the lower half bent back laterally, and in the upper half bent inwardly especially towards the apex, which is thus folded so as to resemble the point of a dog's ear. Body colour greenish-yellow or purer yellow, marked by, and in the upper part almost hidden by, conspicuous blotched veins of brownish-red. On the median line of inside of claw a few reddish-brown hairs.

Style 1¼ by ⅝ inch, very arched, curving close down upon the claw of the fall, and also curved from side to side, the upper under surface being deeply concave, yellow, with veins or rows of dots of brownish-red in the median portions of both upper and under surface; on the upper surface the junction of the crests is continued down the back of the styles as a conspicuous ridge. The crests ¾ inch broad by ⅝ inch high, semicircular, spreading fanwise, yellow, marked with brown-red veins, and having a serrate edge. Stigma a broad ledge with even margin.

Anthers large and conspicuous, with large-grained pale yellow pollen.

Capsule trigonal, dehiscing at the sides only, and chiefly in the upper half; seeds large, reddish-brown, with wrinkled coats and a conspicuous cream-coloured strophiole.

This strikingly handsome tawny Iris grows on the mountains a few miles south of Kharput. I am indebted for living roots of it to the kind zeal of Mrs. Barnum, of the American Mission, Kharput, who has been indefatigable in assisting me to a knowledge of the Irises of Asia Minor, and who has sent me not only this and the little I. reticulata sophenensis, but also several other Irises, some of which promise to be new. It is called by the country people the Wolf's Ear; and, indeed, the tawny tips of the standards as they burst out of the opening bud fairly suggest the name; hence I have ventured to call it I. lupina, the Wolf Iris. It flowered with me in May.

It belongs to the Oncocyclus group, and comes nearest to I. Heylandiana (Boissier), from which, however, it is distinguished by the form of the segments, by the semicircular crests of the style, by the colour, and by the narrow less falcate foliage.

It needs the same cultural treatment as other members of the Oncocyclus group.

I. Biliotti, *sp. n.*

Rhizome like that of I. germanica.

Leaves of a darker green, and more distinctly striated and more rigid than those of I. germanica, but like them largely persistent through the winter, narrowed somewhat suddenly to a point at the apex, about 21 inches long, and 1¾ inch broad at the upper part, and ⅞ inch below, the broader part suddenly narrowing at the level, where, in an Iris leaf, the part answering to the lamina joins the part representing the petiole.

Inflorescence that of I. germanica. Scape about 2½—3 feet, overtopping the leaves.

Spathe-valves 3 inches by ⅝ inch, narrow, acuminate, not keeled, persistent, scarious, when the flower is expanded at the very apex only, and sometimes hardly that, widely divergent, so as to expose the whole of the tube and much of the ovary.

Fall 3½ inches by 1½ inch at broadest, spathulate-cuneate; upper surface, claw white ground, with thick, bold, very dark purple-brown veins; lamina fine reddish-purple, with numerous dark, almost black veins, so thin as to be hardly visible at a distance; beard white, tipped with yellow, hairs not numerous, but stout and clavate; under-surface of the claw a bright green, in the median green, marked with brown dots, becoming a dull greenish, opaque-white on the lamina, the ground colour of which shines through.

Standard, 3½ by 2 inches, erect, connivent, the short (1½ inch) caniculate claw expanding into the large oval lamina; claw greenish on the outer surface, on the inner surface creamy-white, marked on both sides with brown dots and broken veins; lamina fine blue-purple, marked with very fine delicate blue veins. The attachments of both falls and standards to the tube bear conspicuous lateral buttress-like expansions.

Style obovate, 1½ inch by ⅝ inch, exclusive of crests, nearly white, except for a purplish flush on under surface beneath stigma, and on upper surface at the base of the crests; crests triangular, ⅝ by ⅜ inch, pointed, reflexed, divergent, reddish-purple, with blue veins; stigma semilunar. The style is raised high above the beard of the fall.

Anthers rather longer than filaments; pollen white, large-grained, abundant.

Tube ⅞ inch long, bright green, with purple stripes descending from bases of standards, hollow for more than half its length.

Ovary 1 inch by ⅜ inch, supported by a short (⅓ inch) pedicel, bright green, rounded, triangular in section, but bearing six grooves, the three lateral being deepest.

Ripe capsule (2½ inches by 1¼ inch) ellipsoidal, with six deep grooves dehiscing at summit; seed an elongated oval, having a light brown skin, smooth when first shed.

I owe this new handsome and delightfully fragrant Iris to the great kindness of Alfred Biliotti, Esq., formerly Consul at Trebizond, now at Crete, and I venture to give myself the pleasure of naming it after him. The roots were collected south of Trebizond, near Kalahissar, in the province of Siwas.

By its inflorescence it is obviously closely allied to I. germanica, and dried specimens may, perhaps, have passed as examples of that species. But the large conspicuous, persistent, green, widely divergent spathe-valves (which in I. germanica are largely scarious at flowering time, often deeply flushed with purple, and tightly clasping the tube), and the deeply grooved ellipsoidal ovary (which in I. germanica is more or less distinctly trigonal, and never deeply grooved), to say nothing of the form and texture of the leaf and the colour of the flower (I do not lay stress on the exact shape of the segments, since these vary much within the true limits of the species I. germanica), seem to me fully to justify my giving it specific rank.

It flowers rather later than I. germanica, and is

perfectly hardy, requiring the same treatment as I. germanica.

I. GERMANICA VAR. SIWAS.

Rhizome, foliage, and inflorescence as in typical I. germanica, save that the leaves are somewhat narrower and less stout, and their green has a more yellowish hue.

The spathe-valves, as in the type, are flushed with purple, and scarious in the upper half at flowering time. The falls are cuneate, spathulate, and the standards ovate, the styles short and broad, with sharply denticulate crests. Ovary bright green, trigonal, with a slight ridge on each side. Tube purple.

The lamina of the fall is a deep dark blue-purple—indigo-purple, I might venture to call it. The groundwork of the claw of the fall is a light blue-purple, the deeper veins on which are consequently much less conspicuous than in the type where the groundwork is white. Beard whiter than in type, the hairs being only slightly tipped with yellow.

Standards dark blue-purple, containing very little red—almost an Oxford-blue.

Ripe capsule trigonal, with sharp edges, *very short*, being not much longer than wide.

The several varieties of I. germanica (I mean, of course, the true I. germanica, not the "German Irises" of the trade) vary a good deal in the form of both perianth segments; and I should not venture to give this Iris a distinct varietal name, simply because the shape of its segments (for instance, the shortness of the standards) differs from that of the type. The coloration, however, taken together with the very marked characters of the ripe capsule justify, in my opinion, a distinct varietal name. Dried specimens have probably been labelled simply Iris germanica.

The roots came to me mixed with the roots of I. Biliotti, just described, as kindly obtained for me by Mr. Biliotti, and probably grew at or near the same place.

I have elsewhere urged the desirability of indicating varieties of a species differing slightly only from the type by making use of simple geographical names not turned into Latin. I have, therefore, called the variety by the name Siwas from the name of the province in which it was found. It is a handsome plant. *M. Foster.*

THE FLOWER GARDEN.

Bedding-out.—Finish up the bedding-out work as speedily as possible, reserving a few of each variety of plant used to make good any blanks that may appear. Stakes should be put to Dahlias and all other tall growers as they are planted, and the growths secured. In the treatment of sub-tropical plants the principal points of successful cultivation are good drainage, suitable soil and situation, and having the plants well hardened off, previously to turning them into the beds. As the leaves of Wigandias, Solanums, &c., prevent ordinary rains from reaching the roots, heavy applications of water become necessary in dry weather. To secure the proper amount of drainage, it may be necessary to remove the soil from the beds, and replace it by 8 inches deep of brickbats, stones, or clinkers in the bottom, filling in with 1 foot thickness of decayed hotbed manure before replacing the soil, which should be of a rich porous nature. Such beds when well done have a noble appearance on the lawn, but unless they are properly attended to they become quite the reverse, and should not be attempted. It is, moreover, useless to attempt anything of this kind unless the situation be a sheltered one, as nothing looks worse than a lot of large leaves tattered and bruised by the wind. On the other hand, the beds should not be overshadowed by trees, else from the succulent nature of the plants they will become spindly in habit, but give them all the air and sun possible.

Seeds.—Sow Sweet Peas for late blooming. Stake up previous sowings before they fall over. Water frequently with manure-water in dry weather, and pick off the seed-pods as soon as formed, else the plants will soon become exhausted. Make successional sowings of Mignonette and any other choice hardy annuals. Harvest seeds of early flowering plants ere they get shed by the wind. Sow Brompton, and East Lothian Intermediate Stocks, the latter for potting up for winter blooming. Pick the seed-pods of Violas and Pansies. Peg down the shoots of the latter, and shade the show varieties in bright weather. Sow Pansy seed. Prick off into nursery lines biennials as soon as fit to handle, and transplant those which are sufficiently large. Take up any bulbs that have flowered if not intended to remain.

General Operations.—As soon as the foliage decays lift Ranunculus and Anemones, taking great care to preserve the claws intact, and store away in a cool airy place free from damp. An effort should be made when the ground is not too wet to tread upon, to eradicate Dandelions, Plantains, and other large leaved weeds on lawns. The most effectual means of destroying those pests is to cut them over about 1 inch below the surface, and place a teaspoonful of common salt on the wound. Box edging should now be trimmed.

Hardy Ferns will now be growing rapidly, but as slugs and snails are very partial to the young fronds these creatures must be looked for in the evening and early morning. Large specimens, where grown in confined spaces, must receive sufficient moisture to preserve them in good health. A little weak manure-water will greatly assist in maintaining them in good condition. *W. M. Baillie, Luton Hoo Gardens.*

FRUITS UNDER GLASS.

Watering Vine Borders.—That Vines growing in outside borders, however imperfectly drained, suffer more frequently from an insufficiency of water at the roots during a dry summer than they do from the reverse during a wet one, no practical fruit grower will deny. In a dry summer, in many places, the leaves and bunches present a starved appearance in comparison with the large leathery leaves and compact, well-finished bunches when produced by the same Vines when the summer happens to be a wet one. Bearing this fact in mind, Vines growing in inside and presumedly well-drained borders, should have liberal supplies of clear tepid water, or better, if liquid manure be given at the roots every ten days or so. We give copious waterings of liquid manure at a temperature from 90° to 95° direct from the manure tank; it is obtained by watering the freshly-thrown together masses of fermenting dung, with a double-barrel irrigating engine, and conveying the drainage in tubs for immediate use. I mention the above details, because I am convinced that the ready means of obtaining such valuable liquid food are not employed so often as they undoubtedly ought to be.

Peaches.—Houses in which Peaches are approaching maturity should have a drier and airier atmosphere maintained in them than hitherto, and means should be adopted to prevent the ripe fruit from sustaining injury in falling from the trees, by looping a piece of soft garden netting under the trees in such a way as to prevent the fruit from rolling to one point in the netting when they part from the trees, or by placing a good thickness of soft dry grass on the border underneath the trees. The thinning, stopping, and tying down to the trellis of the young shoots should be attended to in succession-houses, and the trees should have copious supplies of water given them at the roots when necessary, and be syringed overhead morning and afternoon at closing time, when the temperature may be run up to 90° or a few degrees higher with sun-heat. The above remarks also apply to Figs in similar stages of growth. *H. W. Ward, Longford Castle Gardens.*

THE HARDY FRUIT GARDEN.

Training Wall Trees.—Wall trees of all kinds will now require to have their leading shoots fastened to the wall, either by tying or the use of shreds, before they become endangered by wind. The most simple and expeditious means of fastening the inner shoots of trees, such as Apricots, Peaches, Nectarines, and Plums, is by the use of twigs of Willows, cut in lengths, and fixing the twigs behind the older branches to keep the young shoots in place. It is often found necessary to have a tie made near the base of these latter shoots, to enable them to start straight from the main stem. Extra strong terminal shoots should have their points pinched off, and others in the centre of the trees not required for laying-in should be entirely removed. Young trees that are growing vigorously should also receive careful attention in disbudding, and regulating their shoots, by pinching back, and laying-in.

Vines.—These should now be disbudded, and as soon as the shoots are sufficiently long enough, they should be stopped at the second leaf beyond the bunch, and fastened close to the wall.

Bush Fruits.—Currants and Gooseberries carrying heavy crops of fruit will be much assisted by giving them a good mulching of manure, and if the mulch be of a strawy nature it serves the purpose of keeping the fruit clean. *E. Ward, Hewell, Bromsgrove.*

THE KITCHEN GARDEN.

Cauliflowers.—*Autumn Giant.*—Plants from the earliest spring sowings which were pricked out into cold frames will now be large enough to be planted. If heads of extra fine quality are desired, planting in trenches is to be recommended, for by this method the plants come into contact more readily with the manure placed at their disposal, are more easily watered, and from being below the ground-level are better able to withstand the force of the wind. These trenches should be thrown out, as for single rows of Celery, 1 foot wide and 2½ feet asunder, the plants 3 feet apart in the rows. The manure used can scarcely be too rich, and must be well incorporated with the soil previous to planting. When planting is done on the level the ground should be well prepared previously, by trenching and manuring; deep broad drills to plant in, should then be taken out with a spade or drawhoe, and the plants placed as deep in them as is practicable. Great care must be taken in the transplantation work, so as to avoid inflicting any check on growth; therefore a handfork should be used to lift them, so that as many of the roots and as much of the soil be retained as possible; and use a trowel or handfork in planting, making the soil firm and even around the plants. Water, in the absence of rain, should be given at the time of planting, and afterwards copiously during periods of dry weather; these waterings could, with much benefit to the crop, be alternately varied with liquid manure.

Early London.—Spring-sown plants of these and its varieties can also be planted out for succession to the autumn-sown ones under similar conditions, but in this case less room will be required between the plants, a space of 2 feet being ample. This variety will now be coming into use plentifully, and to prevent the heads getting discoloured a portion of the leaves should be broken over them, or, what is better, a Rhubarb leaf can be used.

Cabbage.—Continue to plant for succession on rich ground, and prick out more seedlings from the beds; a liberal sowing should also be made of some hardy sort, such as Winnigstadt, for coming into use during the late autumn and spring months. Sowings of Coleworts should also be made for the same purpose. *J. Austen, Witley Court Gardens.*

What One Woman Did.—A Massachusetts woman, having an hour or two each day to spare from housework, decided to try raising Strawberries for market on a piece of land about 57 feet square. The plants were well taken care of through the season, and the last of October the bed received a final hoeing, and a little later the plants were mulched about 2 inches deep with Pine needles. Before the picking season commenced, she bargained with a market-man, a mile and a half distant, to take all her berries, by allowing him, as his share, four cents a basket for all berries sold for 20 cents and over, and three cents for those bringing less. In picking she was careful to put in only sound fruit, to have as large berries at the bottom of the basket as on top, and to have them heaped as high as the crate would allow. It being a poor year for Strawberries, owing to drought, which did not affect her low ground, she received good prices. None were sold for less than 15 cents a basket. The entire crop sold was 350 baskets, for which she received 52·80 dols. Expenses were 21·55 dols., leaving a nett profit of 31·25 dols. *American Agriculturist.*

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APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

WEDNESDAY, June 8 — Royal Microscopical Society, at 8 P.M.

FRIDAY, June 10—Royal Botanic Society: Lecture.

SATURDAY, June 11 — Royal Botanic Society: General Meeting.

SHOW.

THURSDAY, June 9—South Essex Horticultural.

SALES.

MONDAY, June 6 — Specimen and other Orchids, in Flower and Bud, at Stevens' Rooms. Greenhouse and Bedding Plants, at the Child's Hill Farm Nursery, Finchley Road, N.W., by Protheroe & Morris (postponed from Wednesday last).

TUESDAY, June 7 — 2000 Odontoglossum crispum, and other Established and Imported Orchids, at Protheroe & Morris' Rooms.

WEDNESDAY, June 8 — Greenhouse and Bedding Plants, at the Swiss Nursery, Hammersmith, by Protheroe & Morris.

FRIDAY, June 10 — Imported Orchids, at Protheroe & Morris' Rooms.

Horticultural Nomenclature.

The necessity for a reform in the garden names of plants, however pressing, has not yet made itself sufficiently felt among gardeners and raisers of new varieties to compel a reform. Once more it was discussed by Mr. Wittmack in the Report of the Congress lately held in Paris. It is no use, however, laying down the law unless there is a good chance that the law is in accordance with the moral sense of the community, and therefore likely to be obeyed by the majority. Experience shows us that we have not yet attained to that point. The Royal Horticultural Society might, one would think, very properly set an example in this way. If we remember rightly, there are rules regulating the naming of garden varieties, but they are not acted on at the Floral Committee unless some purist member happens to raise a protest, when, perhaps, the rule is followed, to be departed from when the very next plant is placed on the table. Not unnaturally the matter is turned into ridicule by the outsiders, as well as by some who ought to know better, but the committee is, not unnaturally, blamed for egregious inconsistency. We must, however, thankfully admit that one of the special societies —or rather we should say, committees—has taken this matter in hand resolutely. The Narcissus Committee, while retaining the Latin names for what it is generally agreed to consider species, and which are the foci or centres whence the interminable series of forms and varieties diverge, very properly refuses to admit Latin names for the myriads of minor or minim variations that arise in cultivation either spontaneously or by the direct agency of the raiser, as in crosses and hybrids. It will be said that similar variations may and do exist in Nature among wild plants, and that in practice it would be impossible to discriminate between a cultivated and a natural form where the history of the plant is unknown. This, of course, is true, but gardeners and cultivators as such need not trouble their heads about the matter. Leave the botanist to deal as he thinks fit with the forms found wild; let him consider them as species, subspecies, varieties, forms, or what not, according as his experience or his proclivities suggest. If he is wrong, or should some other botanist arrive at a different conclusion, as he probably will do, that matters little or nothing to the gardener. So far we have been considering the case of plants found wild, and imported into this country; but what about the varieties that spring up in cultivation: are they to have Latin names? Yes, if these varieties can be identified by some competent botanist with varieties known to occur in Nature, and already named and registered. No, if the varieties cannot be so identified; and if they are, as it appears, forms which have originated in gardens as a result of the artificial conditions to which they have been subjected. Let us give an illustration. Mr. Elwes has cultivated various Tulips from Asia Minor, Turkestan, &c. These were described and named by Regel and others from the wild plant—so far so good. Now when these plants come to be cultivated, they are found to vary so much one from another, and from the original form, that, were their history unknown, no one would assign them to one and the same species. Are we to give all these varieties Latin names? Such a course is not one we should commend; for garden purposes we should retain the original specific name whatever it may be, and give English names to the varieties, if, indeed, they prove constant enough to be worthy of a name at all.

In these days of international competition, one objection to the use of English names for garden varieties is that they are not "understanded of the people" of other nations. This is a difficulty which the spread of education and the continually extending intercourse between nation and nation tend to minimise, and it may further be reduced by a little judicious selection of names. Names like Mars, Bacchus, Apollo, Cato, Virgil, Tigris, Orontes, would be readily understood by men of all civilised nations, even if they had not learnt Latin from the Eton grammar. Why not apply them, or something similar, to these garden varieties? We open a catalogue at hazard, and the first entry that strikes us is "American Mango Pepper Golden Dawn." No Latin name is given, but from the illustration it is evident that the plant is a form of the plant called by Linnæus Capsicum annuum. The description adds that this plant is "a Mango!" As a matter of fact it may be American (sufficiently vague), but it certainly is not a Mango; equally certain it is not a Pepper; therefore, it can hardly be called Mango Pepper, except by the rule of contrary. For garden purposes Capsicum Golden Dawn would surely suffice, or, to meet the objection that the words Golden Dawn might not be intelligible to our friends across the Channel, it might be called Capsicum Phœbus. When a severely practical people like the inhabitants of the States begin to find the encumbrance and the nuisance of ill-regulated garden nomenclature, we may be pretty sure they will not be long before they devise a remedy. We have already alluded to the efforts made by our late friend the venerated Marshall Wilder, and by the American Pomological Society, and we may appropriately close our remarks by an extract from an article of Mr. L. H. Bailey's in the March number of the American journal called *Agricultural Science*:—

"The blame," says Mr. Bailey, lies largely with the seedsman, nurseryman, and gardener. There is no indication of reform from these sources; it remains for horticultural societies to demand and inaugurate it. The confusion . . . owes its origin to an aping of botanical methods, followed by loose usage in inaccurate hands . . . The very trinity of excellence in the binomial system—accuracy, perspicuity, elegance—falls [by the method followed in gardens] into confusion and repulsiveness. . . . Undoubtedly the best method is to drop the Latin entirely beyond the use made of it in legitimate nomenclature. Societies could inaugurate reformation by adopting two rules—

"1. Use only English names for cultural varieties.

"2. Admit none of the Latin names in Society reports."

Royal Horticultural Society.—The Assistant Secretary requests us to say, that the date fixed upon for the special general meeting of the Fellows of the Royal Horticultural Society, is Tuesday, June 28, and not June 14, as was stated in our issue of May 28.

Royal Botanic Society.—It was announced at the meeting of May 21 that a special donation of Bromeliaceous plants had been made by Mr. Macdonald, Her Majesty's Minister at Rio Janeiro, who had collected them in Brazil. They were presented by Mr. J. P. Gassiot.

Glasgow International Exhibition, 1888.—The prospectus of the above is in our hands, and judging from the array of names of noblemen and gentlemen of position under whose auspices and direction the affair will be inaugurated, it can scarcely fail to be a success. There are sub-committees for agriculture, which includes horticulture and arboriculture; chemical industries, education, foreign contributions, fine arts, minerals, naval engineering and shipbuilding, and textile fabrics. A section will be set apart for artisans, and another for women's industries. Among those matters that are purely of horticultural or arboricultural interest, may be mentioned ornamental trees, shrubs, Coniferæ, flowers, illustrations of and materials used in floral designs, &c.; all descriptions of plant and forcing-houses, garden implements, vases, flower-pots, garden seats, statuary, fountains, bordering, arbours, houses, chairs, bridges, &c. Timber and trunks of trees, abnormal growths, barks, leaves, flowers, seeds, ship timber, shingles, laths, staves, wood for street paving, ornamental woods in design and furniture, dyewoods, preservation of timber, illustration of planting and protecting forests; collections, illustrations and descriptions of destructive insects.

Alexandra Palace.—On July 14 and two following days a Rose show of some pretensions will be held at the above place. According to the schedule before us there will be nurserymen's, amateurs' and open classes, the highest prizes in each respectively being £7, £5, and £3.

Show Fixtures.—The following list includes the most important shows announced to take place this month:—Tuesday, 14th, Royal Horticultural Society; Wednesday, 15th, Royal Botanic Society, Second Summer Show, and York Floral Fête (con-

tinued on 16th and 17th); Thursday, 16th, Scottish Pansy Society, at Edinburgh; Tuesday, 21st, Royal Oxfordshire, and Leeds Horticultural Society (continued on 22d, 23d, and 24th); Thursday, 23d, Ryde Rose Show, and Bury St. Edmunds and West Suffolk Horticultural (two days); Tuesday, 28th, Royal Horticultural, and Bagshot Horticultural; Wednesday, 29th, Richmond (Surrey), Croydon, and Boston Horticultural Societies; Thursday, 30th, Norwich, Canterbury, and Shepperton and Thames Valley Horticultural, and East Gloucestershire Rose Shows.

Mr. Richard Painter, who was for many years engaged as gardener and steward at Clowance, and lately at Trevarno, has been appointed steward at Carclew, the seat of Colonel Tremayne, in Cornwall, rendered vacant by the death of Mr. W. Smale. Mr. Painter has, we understand, for several years past, studied surveying and work connected with the erection of farm buildings, &c., and has now received a reward for his labours.

Royal Microscopical Society.—The next meeting of this Society will be held on Wednesday, June 8, at 8 o'clock P.M. precisely, when the following papers will be read:—Mr. G. Massee, "Monograph of the Genus Lycoperdon"; Professor T. Rupert Jones and C. D. Sherborn, "Remarks on the Foraminifera, with especial reference to their Variability of Form, illustrated by the Cristellarians."

A New Form of Ruscus aculeatus.—We read in the *Revue Horticole* that M. L. Planchon has found a new form of the common Butcher's Broom. The peculiarity of it is that there are two fruits borne on its leaf-like branches instead of only one. This new plant will certainly be a desirable acquisition to our shrubberies, if the production of two fruits is a constant peculiarity.

Vegetable Products in Trebizond.—The following interesting facts relating to Turkish vegetable products are reported from Trebizond. Under the head of Beans, it is stated that the decrease in Haricots is due to the crop having suffered a loss of more than 30 per cent. from droughts in July and August. The prices on board ship of this product are, for sieved, 8*s.* 6*d.*; and for unsieved, 7*s.* 6*d.* the hundredweight. It goes chiefly to Marseilles, where it copes successfully with the Roumanian Bean, as it is softer and more easily boiled, and is from thence exported as French Beans to England and other countries. Boxwood, it is said, is almost exclusively exported to England, and the supply continues to decrease, owing to the Government contesting with the villagers the ownership of the trees and over-estimating the value of the wood, so that large quantities of it bought from the villagers lie unexported, from the merchants' inability to meet the forest dues of 25 per cent. Hazel nuts: Though there was a small decrease in the quantity grown, owing to drought, an increase in value is perceptible by higher prices having been realised. The three qualities exported are:—Round, fetching 11*s.* 6*d.*; mixed, at 12*s.* 6*d.*; and pointed, at 13*s.* 6*d.* the hundredweight, free on board. Fumigation by sulphur, to give the nuts a better colour, is a practice that has begun to be introduced in these parts.

Camphor in Formosa.—The camphor trade in Formosa, which has almost become extinct, has, it is said, recently been taken under the protection of the authorities as a Government monopoly with probable advantage to all concerned. For whereas it has of late years been impossible to procure camphor in remunerative quantities at one time and in one place, the Government now undertakes to collect at fixed depôts the scattered supplies, paying at a certain rate to the producer, and retailing at a fair profit to the merchant for export.

Pansies.—We have received from Mr. Frederick Roemer, Quedlinburg, about four dozen cut blooms of Pansies of extraordinary size and beauty, the produce of seeds sown last summer, according to the method described in our issue of May 14 last, p. 640. Amongst these are some with unusual markings which have been designated the Auricula-coloured and Giant five-spotted, both most desirable kinds, but our preference is for the latter, on account of the handsome arrangements of the colours. The giant show varieties are of great size and substance, and which for the general cultivator, even if he does not mean to enter the lists as an exhibitor, would be of much service in the flower garden in spring and early summer for groups, beds, or edgings, alone or mixed with other plants. For window boxes, *jardinières*, and the front lines on greenhouse stages, these Pansies would be admirably adapted, and would be a welcome relief to the ever-present Chinese Primula. A brilliant blood-red variety, somewhat of the hue of the Wallflower, so called, is an unusual and a distinct thing, of great merit for any purpose; the blooms are the smallest of all those sent.

Botanic Garden, Berlin.—Professor Engler has been nominated as Professor of Botany and Director of the Botanic Garden, Berlin, in place of the late Dr. Eichler. Other botanists whose names were mentioned were Professor Kerner, of Vienna, and Professor Count Solms.

Zoological Society.—A garden party will be held in the Zoological Gardens on June 16, following upon the monthly meeting, which will be held in the gardens instead of at the Society's house in Hanover Square.

The Production of Tar in North Carolina.—In a recent report on the trade and commerce of Wilmington, U.S.A., for the past year, it is stated that the production of tar in North Carolina has been much reduced during the past year, the receipts for 1885 being 80,722 barrels at Wilmington, and for 1886 only 63,120 barrels. This decrease is attributed to the great falling off in the demand for export to the United Kingdom, which was formerly large, but which during the past two years has almost ceased. The North Carolina tar was used for smearing sheep, but principally for distribution in Great Britain, but the demand for its products has diminished, and the dealers now give preference to Stockholm or Archangel tar, because of late years the American article was very carelessly prepared for market. The barrels were of thin, unseasoned staves, irregular in shape and size, and the tar mixed with water and sand. These objections have since been overcome by more careful inspection at Wilmington, by regulating the size by weight, and by stringent rules with reference to sand.

Upsala University.—A Linnean herbarium has been recently presented to the above by Professor H. Sötherstrand, by whom it was inherited. It has been found by comparison of names to be a duplicate of that possessed by the Linnean Society of London. This is so interesting a piece of intelligence that we should be glad to hear further particulars.

Cinchona Bark in Guayaquil.—In a recent report from Guayaquil it is stated that the collection of Peruvian bark has been almost abandoned, owing to the difficulty of its transport through the forests of the interior, and the fact that its value has so much declined as to render the product insufficient to cover expenses and freight. This is only the outcome of what might have been expected when it is known that quinine is now down to such a low price in the London market as to realise only 2*s.* 9*d.* per ounce; the same article that twenty years since fetched 15*s.* for the same quantity.

Rating of Nurseries.—It is announced that a public meeting of nurserymen will be held at the Horticultural Club, Henrietta Street, Covent Garden, on Tuesday, June 28, to consider the excessive rating of nurseries, and to agree on a combined action in an endeavour to procure the reduction of the assessments. The chair will be taken at 4 P.M. by T. Wood Ingram, Esq., of the firm of Wood & Ingram, Huntingdon. The meeting will be held under the auspices of the Nursery and Seed Trade Association, and the Horticultural Club have kindly lent their rooms for the occasion. The Secretary is Mr. F. C. Goodchild, 25, Old Jewry, London, E.C.

Newcastle Exhibition.—In addition to those exhibitors who were mentioned in our last issue, it may be stated that in the grounds there are to be seen several noticeable features, the work of Mr. W. R. Armstrong, florist, New Benwell, Newcastle-on-Tyne. In the quadrangle and the north gardens there are good specimens of ornamental gardening carried out by him, as are also the beds at the entrances to the Old Tyne Bridge. Messrs. Keith & Hardy, Edinburgh, have erected a greenhouse with bent glass sides and roof.

Depth at which to Sow Wheat.—The *Rural New Yorker* publishes an interesting report of a series of experiments carried out at Cornell University, the object in view being to determine the proper depth at which Wheat should be sown. Eight contiguous rows of Wheat were sown at the same time, but at different depths, beginning from ½ inch to 6½ inches deep. No. 1, *i.e.*, at a depth of ½ to ¾ inch, was found to be far the most vigorous plant in leaf and root, indicating that shallow planting is the proper method. This, however, would require proper preparation of the surface soil to receive the seed. The conclusions reached were that, taking into account the difference in soils, a depth of not less than ¾ inch, and not more than 1½ inch, are the extremes for Wheat, in order to secure the best results.

Tobacco in Russia.—While in the United Kingdom, says the *Indian Agriculturist*, every thing is done to discourage the cultivation of Tobacco, in Russia the reverse is the case. From a report recently issued on the trade of the ports on the Sea of Azoff, for the year 1886, we gather that the cultivation of the Tobacco plant is receiving yearly greater attention, and it is expected that it will soon become an article of export. "Last year the Imperial Government sent several persons to Turkey and Holland to study the culture and the different qualities of Tobacco, likewise the principal markets. They also visited the districts of Taganrog, and the data collected by them show that the climate and soil are admirably suited to the growth of certain Tobaccos which meet with ready sale abroad. Several kinds of seed have been brought to Russia. A manual for the culture of Tobacco is to be published, and encouragement given to extend the plantation. The average excise levied on this article for the past three years has been 17,522,014 roubles, and the sum paid yearly for Tobacco licenses 1,767,180 roubles. At Rostoff Messrs. Asmoloff & Co.'s Tobacco manufactory turn out annually 6,000,000 roubles worth of Tobacco and cigarettes."

Publications Received. — *Burnham Beeches* (*Rustic Dance*), by J. T. Musgrave (London: Music Publishing Company, Limited, 54, Great Marlborough Street, W.).—*Bulletin of the Iowa Agricultural College from the Botanical Department*, by D. Halsted, Sc.D. (Iowa: U.S.A., Cedar Rapids, *Daily Republican* Printing House).—*Life of Charles Darwin* (Great Writers' Series), by G. T. Bettany (London: Walter Scott, 24, Warwick Lane, Paternoster Row).—*Illustrations of the British Flora*, 2d ed., by W. H. Fitch, F.L.S., and W. G. Smith, F.L.S. (London: L. Reeve & Co., 5, Henrietta Street, Covent Garden).—*Gleanings of Old Garden Literature*, by W. C. Hazlitt (London: Elliot Stock, 62, Paternoster Row).—*Mr. Punch's Victorian Era* (London: Bradbury, Agnew & Co., Bouverie Street, E.C.).—*New Commercial Plants and Drugs*, No. 10, by T. Christy, F.L.S., &c. (London: Christy & Co., 25, Lime Street, E.C.). — *The Church House*, by T. Moore, M.A. (London: W. Smith, 34, King Street, Covent Garden).

THE PARK AT BATTERSEA.

(See Supplementary Sheet.)

The two views represented in our supplement this week were taken some time since, by Mr. Vernon Heath, in the beautiful example of a public park known as that of Battersea. The conversion of this large extent of swamp, market-garden ground, and old pasture, which was purchased in 1851 by the Government for £11,000, occupied several years, and the park was opened to the public in 1859. Since that time the trees and shrubs have made astonishing growth—the result of intelligent preparation of the soil, aided, doubtless, by the depth of that which was added, and the natural fertility of the staple. No other park in the London area can boast of so much that is charming in arrangement and of such varied interest to the gardener or the lover of trees and hardy subjects generally.

The number of plants that were popularly believed to be unfavourably influenced by our London atmosphere, with its fogs and "blacks," was legion before the magnificent experiment of the planting in this park dissipated these fallacies. The park, which is 200 acres in extent, is especially rich in flowering shrubs that need no sheltering wall, but merely in some instances protection from the coldest quarter; Rhododendrons, Ericas, Bambusa, Clematis, Roses, and hosts of perennial flowering plants succeed admirably. The fine sheltered parterres rendered sacred to the subtropical family of plants has become world-famed. Originally designed and planted by Mr. Gibson in 1863 (*vide Gardeners' Chronicle*, October 10, 1863), it has been a school of design for a generation of gardeners, and has done much in the way of example to beautify pleasure grounds and flower gardens everywhere. Other styles of garden adornment, in so far as that is effected by means of flowering and foliage plants, are to be found at Battersea, from the now old-fashioned massing plan of filling beds with Pelargoniums, Calceolarias, Lobelias, &c., to the modernest of carpet beds full of tasteful designs, and we fear we must add, wasted labour. But the great public, who never think of pounds, shillings, and pence, in connection with a park, will have its carpet-beds, and therefore Mr. Roger, the present superintendent, must gratify it. The top view represents a glade at the south side of the sub-tropical garden, looking north-west. The two beds in the foreground were planted at the time, on the right hand with Gunnera scabra, Bambusa Metake, and other plants not recognisable from the smallness of their leaf; and on the left hand with Canna indica, and Eucalyptus globulus; Willows, Beech, and a Lombardy Poplar in the distance close in the vista. The water scene was taken from a point near the alpine mount, and shows one of the more extensive views on the larger lake looking east; a gentle sloping sward with an edging of Rushes form the shore at this point.

ORCHID NOTES AND GLEANINGS.

ORCHIDS IN BLOSSOM AT ASH GROVE, PONTYPOOL.

The collection of Orchids at this place is widely known, and contains many specimens of rare varieties. At the time of my visit the Cattleyas and Lælias contributed most of the flowers in bloom, and of the former, Mossiæs were pre-eminent and in great variety, some of those observed having eight and ten flowers. Several plants of C. amethystoglossa, C. Mendelii, and C. Skinneri were also very showy, a plant of C. S. oculata, which had carried eighty flowers last year, with a distinct blotch on the lip, had unusually fine pseudobulbs, and a great portion of its leads were breaking with double spikes. C. S. alba was represented by a healthy plant which had three of its fine pure looking blossoms on a spike. Plants of C. citrina grown on bare blocks and rafts were past their best; but I counted six blossoms upon one plant, and the pseudobulbs were strong. C. gigas, C. Trianæ, and C. Eldorado are grown in great numbers in a structure apart from the Cattleya-house proper. These are afforded very little shading, and to this cause the success in flowering them so freely as is done is in a great measure attributed; none of the other species, however, are shaded heavily, and only during the brightest part of clear days.

Lælia purpurata was at the height of its beauty, and is grown in considerable variety; one conspicuous plant had seven spikes, most of which had four blossoms each; L. p. Williamsii was also flowering freely, and I noticed a large plant of L. anceps upon a raft in excellent health, and which had upwards of 800 pseudobulbs. I took it to be a "made-up" plant, but Mr. Fowler assured me it was entire as imported. The mass was purchased at one of Mr. Stevens' sales.

Another house contained a good collection of Cypripediums, arranged on side stages placed near the glass—a situation evidently well suited to them. The following were the best of those in blossom:—C. caudatum, one plant having two fine spikes; C. lævigatum, with four spikes; C. ciliolare and C. Lawrenceanum, of which several plants had many spikes; as had likewise C. Lowii, C. selligerum, C. Sedeni, C. hirsutissimum (a lovely species), C. barbatum, and its varieties nigrum and biflorum, which is similar to C. Warneri.

Masdevallias were in good health, and are placed with Odontoglossums in two low lean-to houses having a northern aspect, and where there is no great difficulty in maintaining a cool and moist atmosphere in summer—conditions so essential to the plants' welfare. The back walls of these houses are covered with virgin cork and packed with peat (as are the walls in the conservatory), amongst which Adiantums, &c., are very effectively planted. I noted Masdevallia Shuttleworthii, M. Harryana, M. ignea, M. Veitchiana, M. Daviesii, and M. Lindeni, as the best varieties in flower.

A fine batch of Odontoglossum citrosmum showed many strong spikes, which were commencing to unfold their buds; these were grown upon shelves near the roof. Many other species were in bloom. A nice lot (about thirty plants) of O. vexillarium occupied the end of one of the stages. Besides the species named many well flowered miscellaneous subjects assisted to make the houses gay, the undernamed being some of the best:—Cymbidium eburneum, Oncidium Krameri, O. Marshalli, Vanda suavis, and V. tricolor. One plant of Dendrobium Dalhousieanum had twenty racemes of its large blooms all opened; D. infundibulum was also well flowered, as was D. thyrsiflorum. I should like to prolong my remarks about the many good plants grown here and something respecting the seedling Orchids raised at Pontypool, some of which will soon prove if they are of value, as well as about the Sarracenias, filmy and other Ferns, Rhododendrons, Amaryllis, Anthuriums, &c., but must not encroach further upon your space than to say it was a great pleasure to spend a few hours as I did with Mr. Fowler, who is an enthusiastic horticulturist; and good as his collection now is, I feel confident it will go on improving under the painstaking care of his newly appointed gardener, Mr. Aldous. *Thomas Coomber, Hendre Gardens.*

Orchids at Gunnersbury Park.

In the East India house there is a fine piece of Cypripedium Dominianum having two flowering stems, each bearing three handsome flowers; that fine Bornean species, C. Stonei, is still very fine, having been in bloom for a considerable time, and it lasts well. The curious and beautiful C. Lowii has one showy spike of four fine flowers; C. Boxalli is also nicely in bloom; C. Lawrenceanum is the premier, a fine healthy plant with handsomely blotched leaves, has sent up seven flowers of a massive character, the dorsal sepal very large and broad, and handsomely flaked with white. In the Cattleya-house is a piece of Lælia purpurata with massive pure white sepals and petals, and a striking purple lip—an older form close by looks poor by the side of it; Cattleya Mossiæ and C. Mendelii are both very fine. In the cool-house Odontoglossum tripudians is nicely in bloom; a piece of O. Hallii has thirteen very fine and handsomely marked flowers; there are several charming forms of O. Alexandræ, especially some with handsome alabaster-white sepals and petals; a small specimen of O. Pescatorei has thrown a large branched spike; and Masdevallia Veitchii is in its best form. *R. D.*

Orchids at Burford Lodge.

Sir Trevor Lawrence's collection at Burford Lodge, Dorking, is still unsurpassed in the country, containing by far the greatest number of rare plants, whilst embracing the finest varieties in those showy sections of Orchids which have to be selected with a florist's judgment. Flowers are there in plenty on every day in the year—flowers of rare old neglected plants, flowers of reigning favourites, and flowers of new ones, to be their compeers or successors. The Masdevallia-house for brilliancy of colour is the gayest at this season, and in a well-selected collection like that at Burford, nothing more gorgeous than the varieties of Masdevallia Harryana could be imagined. In red and orange-scarlet varieties the collection is especially rich, and such colours mingle very effectively with the violet and purple forms, of which those named "versicolor" and "lateritia" are among the best examples. Among the richly-coloured M. Harryana are well-flowered plants of the yellow ignea aurantiaca, the highly-coloured M. i. Massangeana, and the large-bloomed M. i. grandiflora. the mauve M. Lindeni, M. Veitchiana grandiflora, M. Chelsoni, &c. A shelf near the glass has many of the pretty little Masdevallias in bloom, such as M. racemosa Crossii, M. Shuttleworthii, M. xanthocorys, M. ludibunda, M. l. lutea, M. Barlæana, M. amabilis striata, M. simula, M. rosea, the lovely and rare M. Carderi, with its bell-shaped flowers; M. xanthina and M. Wagneri, which two last-named are in most gardens supposed to be synonymous; as seen here, however, they cannot be mistaken for each other either in, or out of flower.

The Chamæroid Masdevallias at Burford are famed for their excellence. All are suspended overhead, so that their large bat-like flowers can easily be examined. It is common for the plants here to bear forty or fifty of these at a time, and the effect of the whole when in full bloom is very novel. One of the very finest is M. Wallisii stupenda, figured from this plant in the *Gardeners' Chronicle*.

Another, very distinct, is the true M. Roezlii, with large dull black flowers with very long tails to the sepals; and the varieties of M. chimæra are profusely flowering in every variety, from yellow, sparely blotched with purple, to chocolate with yellow hairs. M. bella, too, is in great beauty, and M. Chestertoni proves to be both pretty and distinct; its flowers, which are greenish-white, with purple blotches, have very peculiar blunt tails to the sepals, and showy labellums, white, veined with bright orange. Beneath the chimæroid Masdevallias is a grand display of Odontoglossums, among which are some very fine rose-coloured and spotted Alexandræ, violet-spotted O. Pescatorei, a hybrid Pescatorei of the excellens class, some well-bloomed O. cirrosum, O. Andersonianum, O. polyxanthum var. grandis, and a charming batch of crimson Pinguicula caudata, and another of orange Ada aurantiaca.

The Cattleyas and Lælias are in very good condition, notwithstanding that many of them have been heavily bloomed. Here are three of the finest examples of C. Mossiæ in cultivation, viz., a fine mass of the best variety of the pure white, C. Wagneri, with twelve spikes of two to three flowers each—a charming object; the true form of C. M. Reineckiana and C. M. superbissima, which was certificated to Messrs. Hugh Low & Co., and which for size and substance of petals and expansion and colouring of its gorgeous labellum cannot be beaten. Many other varieties of C. Mossiæ and C. Mendelii are in bloom, as well as C. labiata, Lælia purpurata, L. harpophylla, and other Cattleyas and Lælias.

Among the Aërides and Vandas are a splendid

specimen of Aërides Schroderi, with four stoutly branched spikes; A. affine, with six branched spikes, A. Ballantinei, A. species, new, like a snow-white A. rubrum, and various other Aërides, Vandas, and Angræcums, and notably Vanda striata, V. cristata, two very singular species of the V. alpina section; and V. teres, which with its rose-colored flowers and rose-scent, is a general favourite. Large numbers of hybrid Cypripediums, Dendrobes, and other things are also now in flower in the collection which Mr. Bickerstaffe may now be said to have justly settled down with; suffice it, however, to name only a few of the more rare or curious: among these we noted the beautiful Miltonia spectabilis Tolliana, the singular Sarcopodium Dearei, the fine old Schomburgkia tibicinis which flowers regularly here in its light position near the glass; Maxillaria Sanderiana, a perfect wonder, with pure white flowers, mottled with purplish-crimson, as large as Stanhopeas; M. Lehmanni, which is very distinct from M. grandiflora, usually so named; Anguloa Ruckeri sanguinea, a very large specimen; Epidendrum Wallisi, which is nearly always in flower, the variety of this plant to be seen here is far superior to what we have observed elsewhere; Cypripedium Harrisianum superbum of Veitch also demands a note, for out of a large quantity of good Cypripediums, both species and hybrids, among which it is flowering, its flowers stand out as the largest and darkest coloured. The fine old Oncidium sessile, too, seems incomparable in the class of clear yellow Oncids, and it has a very delicate fragrance; Miltonia Warscewiczii pallida, is very pretty; Epidendrum rhizophorum, a fine piece of scarlet; and E. evectum, of rosy-purple; Cœlogyne pandurata, handsome and distinct; and Dendrobium crystallinum xanthinum, a lovely thing, pure white, with an orange lip. These, with a profusion of Dendrobes, Miltonia vexillaria, Odontoglossum Roezlii, &c., and many other plants, curious and beautiful, make a very fine display.

In the other plant houses Mr. Wm. Bain is not a whit behind the Orchid department; his specimens of Impatiens Hawkeri, I. Sultani, the houses of Ferns and foliage plants, and the house of Anthuriums, are in fine trim. In the Anthurium-house the Burford seedlings seem to be the named varieties of A. Scherzerianum in size, flatness of spathe and brilliance of colour; the white scarlet-spotted variety, A. Rothschildianum, and the scarlet-blotched A. Devansayanum also look distinct and worthy as varieties.

FORESTRY.

PRUNING OF FLOWERING SHRUBS.

To advocate the pruning of shrubs during the growing season may to many seem out of place, but it is a necessity if the plants are to be kept within bounds, and their blooming propensities retained unimpaired. Untimely pruning of many trees and shrubs will account, in ninety-nine cases out of one hundred, for the bloom not being freely produced. Take, for example, Berberis stenophylla, unless this be pruned immediately after the flowers die off, there will not be time for the formation of flowering wood for the following season. Another and even better example is one of the Ceanothuses. This plant flowers only on the young wood, so that, as is the case in wall specimens, pruning, where it must be taken in hand, should never be later than March. There can be no question that the Gueldres Rose (Viburnum Opulus) flowers best when left untouched, but in that state it is only a fitting occupant for the wild shrubbery; but prune back the long growths as soon as flowering is finished, and you can have a plant of almost any desired dimensions, and as it is only on the growths formed during the present season that the succeeding year's flowers are produced, you have an excellent blooming subject as well. Many other cases might be adduced in which timely pruning of flowering shrubs would considerably enhance their value as ornamental plants. Of course in these instances we are taking it for granted that the plants are growing in positions where pruning at some season of the year is an absolute necessity in the case of wall plants or trees in small gardens, &c.

Tools Used in Pruning.

The common pruning saw should be about 24 inches in length by 3 inches broad at the handle, and 1½ inch at the point. In the downward-cutting long-handled pruning saw the handle is usually about 6 yards in length, and made of tough, fine-grained Ash; blade 18 inches long, 3 inches or less in width at base, and 1½ inch at tip. This saw is made in two patterns, one having a curved and the other an almost straight blade. It is easily worked, and lessens the amount of climbing usually requiring to be done by the pruner. The straight-edged pruning knife is usually 3 inches long in the blade, with a handle similar to an ordinary pocket-knife. It is a useful tool, but one that is generally displaced by the ordinary strong pocket-knife. For severing branches of rather large dimensions the hand-bill, which is double-faced, is an excellent and strong tool. Pruning chisels, of which there are various sizes, are of great use for removing branches that cannot be readily reached with the pruning saws. They are of various sizes, from 3 inches in length and 2 inches in breadth, to nearly double these dimensions. The socket into which the handle is inserted is usually 4 inches long by 1½ inch in diameter. It is well for the pruner to have a set of these chisels of various sizes, and fitted with handles of various lengths, from half a foot to, it may be, as much as 3 to 4 yards. Each handle should be bound with a small ferule at the end, so as to prevent its splitting when the mallet is applied. This mallet is of the same shape and construction as that used for barking Oak, being 6½ inches long by 4 inches square, and furnished with an Ash handle of about a foot in length. In using the chisel, one person adjusts the instrument to the base of the branch to be removed, while a second person gives it a sharp stroke with the mallet. The averruncator, for removing small branches up to a couple of inches in diameter, is a handy tool, but as it causes abrasion of the bark, is not to be generally recommended. *A. D. Webster, Penrhyn Castle, North Wales.*

SCOTLAND.

BOTANICAL SOCIETY OF EDINBURGH.

(Continued from p. 685).

At the monthly meeting, on May 12 a paper, with herbarium exhibits, was read by Francis M. Norman, Commander, R.N., of Berwick-on-Tweed, on the "Indigenous Flora of Madeira, with Special Relation to the Peculiar Plants," of which there are the very large proportion of 120 out of 602 indigenous. The number, however, he thought, would probably be considerably reduced when the African continent had been more thoroughly botanised. The large proportion, too, of European plants (of which about 260 were British species) seemed to favour the idea of a former land connection between South Europe, North Africa, and Madeira.

From time to time, before 1857, fragmentary and intermittent notices of Madeira botany were published both in England and Germany, but no serious attempt to produce a complete and systematic *Flora* was made till that year, when the Rev. R. T. Lowe, M.A., who had resided for twenty-six years continuously in the island, issued through Van Voorst the first number of one. Mr. Lowe was the grandson of Flamstead, the Astronomer Royal, and a singularly gifted man, and well qualified for the task, which unfortunately was destined never to be finished. It appeared to the end of Solanaceæ, when Mr. and Mrs. Lowe were both lost at sea, having left Liverpool in April, 1874, in the s.s. *Liberia*, which from that day to this has never been heard of. But now, thirty years after the issue of Mr. Lowe's first number, it is satisfactory to know that at last a complete *Flora* of Madeira is in the press, and will shortly be published by Dulau, Soho Square, London. The author is Mr. J. T. Johnson, a naturalist, who has long resided in the island.

The beautiful scenery of Madeira is adorned by an interesting and attractive native flora, to investigate which it is necessary to spend a whole year there, exploring all its regions or zones of vegetation, from the semi-tropical sea-level to the mountain-top, 6000 feet above it. Captain Norman explained that it took him three years to form his herbarium, from which he showed many fine specimens. He referred apologetically, but with satisfaction to the fact that Mr. Lowe had perpetuated his name in connection with Madeira botany by naming the new genus Normania (Solanaceæ), after him.

There is only one Saxifrage, S. maderensis, a very beautiful and luxuriant one, shining as if varnished, which does not appear to have been introduced to this country. Ranunculus grandifolius, Lowe, attracted much attention, a leaf shown being enormous; so did a beautiful snowy tomentose Helichrysum (Moringii), with golden heads, which grows in profusion in coast ravines.

It was noticed that if one does not travel about the island the indigenous seems to be eclipsed by the cultivated flora of Funchal and its neighbourhood, but it is, nevertheless, of the most varied, comprehensive, and interesting character. It is very showy too. Our ordinary hothouse and greenhouse favourites attain a size and luxuriance in the open air which must be seen to be appreciated. Three sorts of Bougainvillea cover the sides of houses; Bignonia venusta attracts attention; but what at once, in the eye of a newly arrived visitor, forms a chief feature is the omnipresent Poinsettia pulcherrima, with its strong crimson bracts. In Dr. Graham's garden is a Tulip tree, which was planted by Captain Cook.

On the motion of Professor Dickson, Chairman, Captain Norman received a hearty vote of thanks.

Mr. Lindsay presented the following tabular statement:—

Register of Spring-flowering Plants, showing dates of flowering at the Royal Botanic Garden, Edinburgh, during the years 1886 *and* 1887. *By Robert Lindsay, Curator:—*

No.	Name of Plants.	First flowers opened.	
		1886.	1887.
1	Adonis vernalis	April 3	March 29
2	Arabis albida	March 4	Feb. 27.
3	Aubrietia grandiflora... ...	April 6	March 19
4	Bulbocodium vernum... ...	Feb. 27	Feb. 19
5	Corydalis solida	April 6	March 26
6	Coryllus Avellana	Feb. 10	Jan. 26
7	Crocus susianus	Feb. 12	Feb. 4
8	,, vernus	March 17	Feb. 17
9	Daphne Mezereum	March 22	Feb. 5
10	Dondia epipactis	Dec. 30, 1885	Jan. 13
11	Draba aizoides	March 31	March 28
12	Eranthis hyemalis	Feb. 10	Feb. 4
13	Erythronium Dens-canis ...	March 26	March 19
14	Fritillaria imperialis ...	April 25	May 4
15	Galanthus nivalis	Feb. 9	Jan. 27
16	,, plicatus	Feb. 9	Jan. 31
17	Hyoscyamus scopolia ...	April 3	March 23
18	Iris reticulata	March 20	Feb. 26
19	Leucoium vernum	Feb. 17	Feb. 14
20	Mandragora officinalis ...	April 3	March 2
21	Narcissus Pseudo-Narcissus...	April 6	March 23
22	,, pumilus	March 25	March 14
23	Nordmannia cordifolia ...	March 20	Feb. 18
24	Omphalodes verna	April 3	Feb. 28
25	Orobus vernus	March 28	March 6
26	Rhododendron atrovirens ...	March 23	Feb. 17
27	,, Nobleanum	April 4	Feb. 26
28	Ribes sanguineum	April 8	March 23
29	Scilla bifolia	March 19	March 2
30	,, ,, alba	March 21	March 4
31	,, præcox	Feb. 13	Feb. 16
32	,, sibirica	Feb. 17	Feb. 19
33	,, taurica	March 20	Feb. 27
34	Sisyrinchium grandiflorum...	March 21	March 4
35	,, ,, album	March 21	March 8
36	Symphytum caucasicum ...	April 20	April 10
37	Symplocarpus fœtidus ...	March 23	Feb. 14
38	Tussilago alba	Feb. 10	Feb. 3
39	,, fragrans	Feb. 6	Jan. 19
40	,, nivea	April 3	April 4

North of Scotland Horticultural Association.

The monthly meeting of the members of this Association was held in the Christian Institute, Aberdeen, on the evening, of the 20th ult., Mr. Alexander Robson, President, in the chair. There was a fair attendance of members. Mr. Leslie Tait, Foveran, read a paper on "Bees."

Royal Horticultural Society of Aberdeen.

A meeting of the acting directors of this Society was held in the office of the Secretary, Mr. A. M. Byres, C.A., Aberdeen, on Friday evening, the 20th ult., Councillor Lyon presiding. It was agreed that the summer exhibition should be held in the Duthie Public Park, the use of which has been granted by the Aberdeen Town Council, on July 29 and 30. Judges, stewards, and show committee were appointed. The exhibition is to be on the grandest scale ever attempted in Aberdeen before; large money prizes being offered in addition to the usual prizes, in honour of Her Majesty's Jubilee year.

Mr. Henderson, Wellwood, Cults, submitted the report of the committee in reference to "Jubilee prizes." It stated that in commemoration of Her Majesty's Jubilee, the North of Scotland Association have decided to offer the following prizes to be competed for by members of the Association, viz.:—(1). Gold Medal for the best essay on "The Principal Points to be considered in Judging Fruits, Plants, and Vegetables." (2). Gold Medal to the member who shall produce a plan for the best arrangement of a kitchen garden not to exceed one acre in extent, with a list of the trees and small fruit bushes best suited to various exposures, and the best description of their mode of arrangement. A cordial vote of thanks to the President for presiding brought the proceedings to a close.

THE GOOSEBERRY BORER.

The Gooseberry is often materially injured by attacks of its enemies, of different kinds; at the present moment many of my trees have entire branches destitute of a single leaf, the buds having been picked off during the past hard winter by tomtits. Later in the season the young leaves are devoured by numbers of the speckled larvæ of one of the sawflies, whilst the pretty caterpillars of the magpie moth are terribly voracious and destructive. The caterpillars of another species of moth (belonging to the same family of geometric or looper caterpillars as that of the last-mentioned moth) is equally obnoxious to the growing berries, and hence it is known to growers of this fruit by the name of the berry-borer, from its habit of burrowing into the half-grown fruit.

We have received occasionally notices from different correspondents of the ravages of this species. In 1885 a writer from the neighbourhood of Dundee, who had some acres of Gooseberries, sent us specimens (three of which are represented in the accompanying figure, 141) and stated that half a ton at least of the berries were lying thickly around and under the bushes. He had tried Hellebore, but it had no effect in stopping the mischief. The caterpillars sent with the injured berries are of a pale green colour, with the head and two longitudinal lateral stripes of pale yellow on each side of the body, and one central dorsal line of a darker colour, not made sufficiently strong in our engraving; they are slightly hairy, and belong to the great family of the geometrical caterpillars (Geometridæ), and produce 'a pretty pale greyish moth (Halia vanaria), which has several dark markings on the fore-wings, the largest and most central one representing the letter V laid on its side. The chrysalis is slender, and has two little curved hooks at the extremity of the body. When the mischief has extended thus far, it is not easy to say what other remedy than hand-picking can be adopted for their destruction. We do not know exactly where the caterpillars retreat to undergo their chrysalis state, but suppose they are fixed to the twigs, where, of course, they should be sought for carefully, and destroyed.

We do not know whether Gooseberry shows are as common now in the North of England as they used to be, or whether the growers of fine fruit now adopt a plan which we used to hear about, termed "suckling" the berries, which was practised by placing a glass of water beneath the fruit, so that the end of the pips (or dead blossoms) was hanging in the water, which was gradually absorbed by the berry, causing it to attain an unnatural, swollen size. *I. O. W.*

FLORISTS' FLOWERS.

NEW AND CHOICE ZONAL PELARGONIUMS.

Is not the zonal Pelargonium in danger of becoming too large? Who could but admire the fine trusses and splendid pips sent to the last meeting of the Royal Horticultural Society by Messrs. J. R. Pearson & Sons, from the Chilwell Nurseries, near Nottingham? And yet some of the varieties appeared unduly large and bordering on coarseness. The zonal Pelargonium is attractive in proportion as the flowers are stout, finely formed, smooth and circular; colour is a matter of taste, and there are flowers

Fig. 141.—Gooseberry Borer.

of all shades to please those who have varying fancies. Of the new varieties in course of distribution this season mention must be made of the Rev. R. D. Harries, soft salmon-scarlet, very fine; Mr. Daird Saunders, pale lilac-pink, very large, stout, and symmetrical; and W. Bealby, rosy-scarlet, large, and striking. Of older flowers the following were particularly noticeable:—Aspasia, white, very fine; C. H. Swinstead, vermilion; Clytie, scarlet, flushed with magenta; Constance, rosy-pink; Edith Little, blush-pink, very pleasing; Edith Pearson, salmon-rose, very fine; Edith Strachan, clear salmon; International, very delicate blush-white, extra fine; Lady Francis Russell, clear rosy-pink; Lord Chesterfield, magenta; Mrs. Johnson, rose; Mrs. Miller, dark crimson, very rich; Norah, blush-white; Omphale, pale salmon; Othello, dark scarlet, very fine; Ruby, rosy-scarlet; and Sissy, salmon, the upper petals shaded with orange and pink, very fine in colour. All the foregoing were raised at Chilwell, and they possess that robustness of habit, branching character, and freedom of bloom peculiar to the strain. *D. E.*

The Gladiolus.

As a rule, when the weather is cold, as it has been this year and still is, most plants grow strongly if they grow slowly, and the Gladiolus is no exception to this, especially when the weather is dry—as it has also been—the roots work freely underneath. As soon as the plants have pushed through the ground the Dutch hoe must be run through the ground, even if there are no weeds to be destroyed. Showers of rain have a tendency to cause the formation of a hard thin crust on the surface, and the breaking of this is an essential part of good culture; the action of hoeing aërates the soil, and allows the subsequent rainfall to pass more freely through the ground. By-and-by, when hot dry weather sets in, it is a good plan to place over the surface a thin dressing of light decayed manure, and to give the plants a good watering through the rose-spreader of a garden hose, or the rose of a large waterpot. The dressing of manure retains the moisture in the soil, and preserves a more equable temperature in it. It is not roasted by day, nor chilled by cold nights, which does more injury to such plants than most people imagine. In Nature the surface of the ground is protected in some way, less or more, with an undergrowth of weeds or some decayed matter, such as the fallen leaves of trees. Seeds sown early in April will now have produced a plentiful crop of young plants, which will grow rapidly in frames. I have generally recommended sowing the seeds in pots thinly, so that the young plants need not be pricked out. Three or four inches of fine soil may be spread over the surface of a gentle hotbed, and the seeds sown broadcast over it. The plants must be grown freely through the summer, and be well exposed to the light in the autumn, so that the small bulbs may have a chance to ripen well; this is essential to their flowering strongly the following season.

The Amaryllis.

The illustration at p. 709 of Amaryllis Colonel Burnaby shows the great advance that has been made in these gorgeous spring flowering hothouse plants. I question much whether there is anything of either H. pardinum or H. Leopoldii in it. Probably it is either a seedling from Empress of India or has been raised from a variety of which that is the pollen parent. This type, when well grown, has produced three scapes from one bulb, and as many as fifteen flowers on the three scapes. We have often six flowers on the strongest scapes. Seedlings of this type should be chosen either as seed or pollen bearers, as they have in an eminent degree the two properties of vigorous growth and the habit of producing the largest number of flowers on a scape.

Now is the time to sow the seeds which have just ripened. They may be sown in pots, and the pots plunged in a brisk bottom-heat. They vegetate freely if the seeds are good in about two weeks; and in five or six weeks from the time of sowing the young plants may be pricked out, and ought to be grown on freely during the next two years. When the plants are in the early stages of their growth they have no tendency to rest in winter; they do not of course require much water, but they do not lose their leaves as the old-established plants do in the winter months. The old plants are also growing freely in a hothouse temperature, and the bulbs have plumped up again, some of them much larger than their usual size. It is interesting, during the growing season, to watch the plants develope the characteristic features peculiar to them; to note the development of offsets on some, while others have not made a single offset in twelve years. We have cultivated a bulb of Keizerii for over twelve years, and it is the same now that it was when purchased, nor has it made any increase. *J. Douglas.*

MASDEVALLIA VELIFERA.

Although not strictly speaking showy, this curious Masdevallia is very desirable in collections, on account of its peculiar form and colour. The flowers, which are thick and wax-like in texture, are greenish-yellow, shaded with brown, the tails being clear dark yellow. There is one thing about it, however, to which some would object, and that is its very unpleasant odour. The plant has a stout growth something like that of M. coriacea, and is very free growing. Our illustration (fig. 142) was taken from a flower sent by Mr. F. W. Moore, Curator of the Royal Botanic Gardens, Glasnevin, Dublin, where there is a good representative collection of Masdevallias.

Home Correspondence.

ELEUTHERINE PLICATA AS A DYE PLANT.—Amongst the exhibits from Montserrat at the late Colonial and Indian Exhibition were some reddish-looking bulbous roots with the simple label, "Dye roots, Allium gracile." Specimens having been obtained for the Kew Museum, it was soon seen that the bulbs were in a fresh and growing state; some were planted at Kew, with the view of deciding their accurate botanical nomenclature, and they now turn out to be those of Eleutherine plicata, an Iridaceous plant. Upon cutting the bulbs through a dark reddish or crimson-coloured juice exudes, which readily stains the fingers. To what extent it is used, or whether used at all as a dye in Dominica, does not seem apparent. Upon submitting a few bulbs to a firm of dye-extract manufacturers in Mincing Lane, they report that, for dyeing purposes, they stand very little chance against the aniline colours which are sold at exceedingly low prices. *John R. Jackson, Museum, Royal Gardens, Kew.*

CAPE AND NEW HOLLAND PLANTS.—Reading your notes in the *Gardeners' Chronicle* for May 21 anent the Heaths, Tetrathecas, Boronias, &c., in the Victoria and Paradise Nurseries, and also of the Leschenaultias of Mr. W. Balchin, was to me like the renewal of an early life; the tone of your article suggests also that did the Horticultural and Botanical Societies, or those of their members who can hark back thirty years, only just try and see what might be done to revive the taste for such lovely and beautiful old plants, it would be well, and doubtless be responded to most heartily, and as being something new—a novelty seemingly so dear to all minds of the present day, but would fain believe a novelty of no transient existence when once established; as I feel sure that an exhibition once or twice a year of the old-fashioned New Holland and Cape plants would be generally welcomed as a most delightful change to the sameness and monotony of the plant and floral exhibits we now see. *Robert H. Poynter, Taunton.*

Fig. 142.—MASDEVALLIA VELIFERA. (SEE P. 744.)

"NEW ROSES."—I have read with pleasure—and I hope with profit—the above by "Wild Rose" at p. 702. I cannot, however, agree with the writer that because a new plant gets seven certificates that it must necessarily be good. I think it entirely depends upon who confers these degrees. How many of our local societies have judges who are competent to confer such honours? I do not know one. I think the only Society in which the Rose growing public have confidence is the National; and if all new Roses that are being sent out passed through that ordeal there would not be, year after year, so much rubbish sent out, nor old Roses with new names, which "Wild Rose" justly condemns. At the Glasgow show, last July, I had the pleasure of seeing Messrs. Dickson's new Rose, Earl Dufferin, which was Certificated. I think this was a great mistake, and a violation of the rules of all our societies—viz., that no certificate should be given unless to a variety which is an improvement on, and distinct from, all existing varieties. There was only one bloom shown, and that was compared with a similar bloom of Prosper Langier, and, so far as it was possible to judge, they were identical. They may be quite distinct, but certainly as presented here they bore such a similarity as should, in my opinion, have justified the judges in withholding a Certificate. If Messrs. Dickson have not shown their Roses at any of the National Society's shows, they should do so at Edinburgh, as a certificate from that Society would be worth having, and unquestionably increase the demand for their Roses. *Tame Rose, Renfrew.*

LATE VEGETATING SEEDS.—Your correspondent whose Onions have had a struggle to emerge into vegetation has, I fear, many fellow sufferers. On heavy soils, however, the evils are more general; for great drought, accompanied by cold weather night and day, has kept the soil cold, and the surface is baked and cracked in an unusual manner. Dustings of fine soil at planting time and several times since then seems to have been of much benefit in assisting vegetation. We notice that where seeds are new the difference is great both in vigour and forwardness. Packets of new kinds indicates new seeds, and from such packets by far the finest Onions are growing at present. Nutting's Golden Ball and Veitch's Improved take the lead at present. Leeks are also very tardy in growth, and little difference in the bulk of the kinds is observable. Others apart from the above also suffer. Parsley, which we raised so well in heat, hardened off and planted out, does fairly well, but seeds in the open ground do not seem to vegetate. Beet and Parsnips were slow to move, but earlier lots and successions are now growing apace. Cabbage stood the winter well, and no vacancies have occurred. Among a number of kinds planted in one brake Allan's Incomparable have outdistanced them all. One of our own, which we saved some years ago, is nowhere against Incomparable, and we thought our own pet near perfection. Peas have stood still till lately, and we notice the earlier lots are only equal in forwardness to those which were sown weeks later. Three or four sowings of Turnips are nearly at the same stage of growth. "Fly" has not been troublesome till lately. Broccoli, which should have been ready for use during March and April, are now in abundance, not large and good, and will give supplies into June. We observe that where Cauliflowers, Borecole, Brussels Sprouts, Savoys, and Cabbages, were planted between the ridges, which were turned up to the influence of the weather, are doing remarkably well. The shelter they receive, and the kindly soil placed with the roots at planting times, have done much to help free growth. Fruits generally are most promising; Cherries (on wall) early; mid-season and Morellos have set amazingly, and must require much thinning. Small fruits are as abundant as they can be. Apples are still mostly in bloom (this is a somewhat late district in the Scottish Midlands), but the trees are a mass of flowers. We never had Strawberries more promising, and for all purposes Vicomtesse Hericart de Thury and President are most serviceable kinds. These two under glass are doing admirably. Early matured plants which were long at rest, plunged in an open border all winter, have been extra good since the beginning of April. *Scot.*

RED SPIDER ON VINES.—Knowing how troublesome a matter it is at all times to eradicate this pest I venture to tell Mr. Douglas the mode we adopt, and as I have practised it for the past twenty years without once causing the slightest injury to either fruit or foliage he may with safety adopt it. We always choose a dull evening for the work, and omit damping down the house in the afternoon, allowing the ventilators to be open rather later than usual, to allow of the foliage being dry, and the atmosphere also, and we never commence operations until quite late in the evening, taking care that all ventilators are shut quite close, that there may be as little escape of the fumes as possible. According to the length of piping in the house slake down sufficient quicklime to make a thickish wash, about an hour or so before it is required, and after the pipes have been made as hot as possible, let this be applied to them with an ordinary whitewash brush; but one of the hands must previously keep the pipes wetted with water just in front, and a third follow with flowers of sulphur to dust upon the wet lime-wash. The house will be quickly filled with the fumes without fear of injury. After the operation the fire is kept going for about an hour; the only precaution we take is to ventilate the house rather earlier than usual the following morning. I have never known this remedy to fail, and even in very stubborn cases a second dose at a fortnight's interval has completely stopped their ravages. I shall be glad to afford Mr. Douglas any further information if I have not made my statement quite clear. *Walter Child, Croome Court.*

COVENT GARDEN PRICES.—As a regular reader of the *Gardeners' Chronicle*, as well as a grower for Covent Garden Market, I take the liberty of troubling you with a few remarks upon the market sales. With many more growers we have had from time to time occasion to complain of the sales made on our behalf by the commission salesmen, and gladly hailed your announcement some weeks ago concerning Messrs. Draper & Son's intention of making an experiment in the way of public auction for private home-grown forced fruit and flowers. This, we thought, would be the cure to all the evils of the past, seeing it was recommended by both the *Gardeners' Chronicle* and your contemporary, the *Garden*, the latter adding to its notice that Messrs. Draper & Son would simply charge a small commission upon the sale of goods to cover expenses. Upon the above recommendations we resolved to give the new experiment a trial; but how sadly disappointing were our returns. The goods sent were only sold for a little more than the half that we had been getting from our usual salesman, and besides that, the commission charged was 2½ per cent. higher than that charged by him, with the addition that they (Messrs. Draper & Son) send neither boxes nor labels, as the salesmen do. It is quite evident, then, that auction sales for home-grown fruit do not supply the cure for the evil complained of, and we quite endorse the note of warning given by your correspondent at p. 713, May 28. There is certainly room for some little improvement amongst the salesmen, and we hope that the present ventilation of the question of sales will not be lost upon them; but whilst we say that we are far from saying that all the salesmen are alike; for our own part, after several trials of different kinds we have come to the conclusion that with one of the leading salesmen and a good quality of goods, well sent up in the way of packing, the returns will always be satisfactory. So far as

we have learned about the auction sales, the effect of them has been in the wrong direction, salesmen having more difficulty to dispose of good fruit and flowers at fair remunerative prices to the growers, whilst the consumer does not benefit one fraction by the experiment. *J. W. B.*

THE ROYAL HORTICULTURAL SOCIETY'S COMMITTEE MEETINGS.—As the Council of the Royal Horticultural Society proposes to take the wise course of consulting with the Fellows as to its future action, will you permit me to invite that body to consider also the desirability of varying the character of its committee meetings in such way that they shall become purely business meetings, and no longer be regarded as quasi-exhibitions. This reform may perhaps be accelerated now that the Council perceive these meetings do not pay to advertise them as shows. The stimulus afforded to all and sundry to exhibit products, but especially flowers, at the meetings in past years, because of the crowds of persons who saw those products no longer exist; and the conservatory is unhappily now on these committee days, and especially late in the day, as marked for its emptiness as formerly it was for its crowd. One well-known nurseryman aptly remarked at the last meeting that the affair was rapidly becoming a sort of mutual admiration society, meaning thereby that the exhibits were seen by the various exhibitors, and by few others. If the public will not come—and it seems hardly desirable that they should, unless there are exhibitions of a commensurate kind to gratify them—then it is wiser to regard these meetings henceforth as purely practical business gatherings, and treat them accordingly. Were that the case, the meetings need not be prolonged, as now, till a late hour in the day, compelling exhibitors even of the most trifling objects, to kick their heels in depressing suspense and impatience because kept there uselessly, there being no compensation found in an admiring public. As a remedy I respectfully urge that the meetings shall uniformly close at 4 P.M., at which hour it shall be open to all exhibitors of plants, or other products staged specially for the judgment of the respective committees to remove them. That long hours of waiting, militate against the popularity of the meetings as far as country growers are concerned, there can be no doubt, for many who would find no hardship to reach home in good time if enabled to leave South Kensington at 4 o'clock, would decline to submit to the 6 o'clock rule, and therefore remain absent. But the other day an exhibitor of some choice plants from Weedon was compelled to remain in London till 10 P.M. because he could not otherwise catch an earlier train, thus actually inflicting punishment, as it were, upon a meritorious exhibitor for his good nature. Practically it should be understood the comittee meetings are for the purpose of adjudicating upon the merits of plants, flowers, fruits, and vegetables, from a purely practical point of view, and that all persons, whether exhibitors, members of the committees, Fellows, or the representatives of the Press, if they wish to inspect the exhibits must do so within the hours prescribed, and by fixing the hour of closing as late as 4 o'clock, ample opportunity would be afforded. It seems hopeless to suggest now that even those hours might be once again enlivened by some dissertations on the products exhibited. *X.*

YOUNG VINES ON OLD BORDERS.—Probably the young Vines referred to by "J. W. T." at p. 718 were planted between the old ones in the old border, and in which case the condition of the latter was improved by having some of their roots chopped off in the process of making holes for the young Vines, ultimately the young fibrous roots resulting from the severance of the old ones pushing into and appropriating the new soil that had been placed about the roots of the newly planted Vines to the detriment of the latter. Now that the Vines are swelling their bunches only temporary improvement should be aimed at—that of swelling and ripening larger bunches by laying on the border a few inches thick of short dung and giving liberal supplies of liquid manure at the roots when necessary during the next four or five months. Then means should be taken to effect a permanent improvement in both sets of Vines by opening a trench 3 feet wide the entire length and depth of the border at about 3 or 4 feet from the Vines, cutting away all roots within that space, and removing the surface-soil from the roots in the strip of border between the trench and the stems. Fill up with a compost consisting of five parts sound fibry loam, one of wood-ashes, one of lime, one of fresh horse-droppings (if to be had), one ordinary-sized garden barrowful of fresh soot, and a bag or two of Thomson's Vine and plant manure, afterwards mulching the border as recommended above. Two years later another section of the old border should be removed and then filled up as indicated, and so on until the whole of the old border from the starting point is removed, and in its stead is a new one. *H. W. Ward, Longford Castle.*

AUGUSTE NICAISE STRAWBERRY.——There is a mistake in the note on Auguste Nicaise Strawberry in the *Gardeners' Chronicle*, May 28, p. 707; it should have been eight instead of eighteen to the pound. On the 14th I gathered two fruits which weighed 5 oz., and fifteen weighed 1½ lb. I gathered over 17 lb. from forty plants, and had the largest fruits only weighed eighteen to the pound I should not have thought it worth while to have written about them; indeed, my employer, and every person that has seen them, say they are the largest Strawberries they have ever seen. If any one should disbelieve the weight, it can be substantiated by other people. I have some ripening now which are not quite so weighty as the previous lot, but there are numbers of them that will weigh considerably over an ounce each; but those were from picked plants. This variety has been tried at Bagshot Park gardens this year, and although the plants were lifted from the ground, being self-layered; they produced the best crop that they have had there this year; so that I consider the variety quite worth any one's while to try who have not already done so. *E. Webber, Hall Grove.*

A POWDER TO DESTROY BEETLES, CRICKETS, &C.—If any of your readers have a stock of crickets or beetles I should like to send them, free of charge, a new mixture that I have been experimenting upon, and have had good results with. We could not get a Cucumber left; traps were very well as far as they went. We had fair success baiting bottles with turmeric, as I know beetles like anything with plenty of flavour; we even mixed honey with beer and spice. The size of some of the insects we had to combat with was over 1 inch in length, and being furnished with wings, they flew direct to any spot they desired, thus avoiding tempting baits on the floor, for we tried to attract them off the shelves and away from the roof. Crickets proclaimed that they were among our pests, but since sprinkling this powder under the shelves and on the pipes we do not now hear or see one. This last week my gardener has carefully watched the effect on the beetles in the kitchen, and it appears to stupefy and poison all those that venture out, but as it is safe for any human being to use I want to gain the experience of others before recommending it generally. *Thomas Christy, 25, Lime Street, E.C.*

FLORAL EMBLEMS.—I do not recollect in your notes on the Colonial Exhibition if any floral emblems for India or any of the colonies were described. Should any exist I shall be glad if you or any of the readers of the *Gardeners' Chronicle* will favour me with a list of their names. *George Rowbotham.* [Our correspondent must be more explicit. Ed.]

POTATOS.—I am surprised to learn from Mr. F. W. Foord that the Potato crop of last season was inferior in quality. I think that is news to most Potato growers. The crop was not a heavy one as far as the early kinds were concerned, but was generally excellent in late kinds, the growths being well maintained. Then we have had one of the best Potato winters on record for evenness of temperature and absence of forcing weather in the early spring. I have plenty of seed Potatos now, which have lain exposed to the air, and have not pushed an eye, because the average temperature has been so low, thus checking growth and promoting good keeping. This fact explains the extraordinary slowness seen everywhere in the early planted Potatos to come through; indeed, I have never before observed such restfulness, and it has rendered many growers uneasy because tubers two months in the soil have made no external sign. A few warm days and nights will, no doubt, show soon that the tubers have not been inactive absolutely, but they have found in the soil, as others have found in the store, the smallest possible inducement to activity. It is also obvious that as far as home-grown Potatos are concerned we are not likely to have any in the market for six weeks, so that good old tubers well preserved should still find a satisfactory market. Very much of the lack of quality now found, results perhaps from the fact that the stocks from the best Potato districts are bought up first, and those from the indifferent ones last. From Middlesex and the London districts, which turn out Potatos of the first quality, few are left for market after Christmas. Storing in clamps or pits injures the quality of eating Potatos appreciably. For latest purposes the tubers should be kept in barrels or boxes, being occasionally looked over carefully to keep down growth. *A. D.* [In many districts there was supertuberation, due to rainy weather following a long period of drought, and this affected unfavourably great quantities of the tuber. Ed.]

SOCIETIES.

MANCHESTER BOTANICAL AND HORTICULTURAL.

May 27 to June 3.—The annual exhibition of plants, fruits, and flowers at Old Trafford was opened on the above date on a plot of ground that had been secured by the Council of the Society; and for the accommodation of the more tender plants a long range of glass was specially erected. Several large tents were also utilised, so that altogether a very large space was provided for the safe keeping of the exhibits. The show being held on ground away from the surroundings of the Botanical Gardens seems on that account to have lost somewhat of the pleasure and interest it had hitherto enjoyed in connection with the Whit-week floral *fête*, but when we entered the grounds and inspected the plants and flowers themselves it was with feelings of satisfaction we observed the immense numbers of plants and cut flowers that were brought in response to the invitations of the Council. Quite a new departure has been taken this year, for since the grounds of the Society have been placed for the time being at the services of the Jubilee Exhibition it was impossible to hold it as hitherto, and, instead of the usual list of classes and prizes, a circular was issued some time ago, in which it was stated that exhibitors might bring of their best, the class and quantity of plants being left to the choice of the respective competitors—Gold and Silver Medals being awarded, instead of the usual money prizes. The response was most hearty and liberal, that the show as a whole compared very favourably with any of its predecessors, and if we missed the large specimens of the Messrs. Cypher, Rylands, and other famous exhibitors, there were great numbers of plants of smaller size better adapted to the embellishment of our ordinary stoves and conservatories.

The collection of Orchids by many of the leading nurserymen was most extensive; whilst many amateurs had willingly sent large groups, the whole making one of the most effective displays seen in Manchester. Such liberal support exhibits a hearty willingness to support the Society that has done so much to help and foster a taste for all pertaining to horticulture in the County Palatine.

Entering the glasshouse, the first thing to arrest attention was a row of Odontoglossum citrosmum, some thirty-six plants, suspended along the roof on one side of the building, each with one or more spikes of bloom, the colour of the flowers varying from white to that of deep rose. Many of these spikes had one and two laterals, and reached down 2 to 3 feet below the basket. Immediately below these was a bank of choice Orchids, Palms, and Ferns, which with the Odontoglossum citrosmums were safely brought from the St. Albans establishment of F. Sander & Co.; altogether some 300 plants were staged by this firm, each plant and flower being as fresh as when taken from the Orchid-houses. Many plants each of Lælia purpurata, L. Warneri, Cattleya Mossiæ, C. Mendelii, C. Skinneri, D. hercoglossum, Masdevallia Houtteana, various other Dendrobiums, and Cypripedia; Oncidium hastatum Roezlii, O. Marshallianum, Odontoglossum Alexandræ, in fine form, and many plants; a large number of hybrid Odontoglossums, O. nævium majus, Miltonia, Schillerianum, O. facetum, vexillaria polyxantha, various Aërides, and many Masdevallias, all staged in a free and charming manner mixed with Ferns, &c., made a most effective bank, that was much admired. Two very distinct plants in this group deserve mention, one being Maxillaria Sanderiana, having large open flowers, which are white over a good portion, the base of sepals and petals and labellum being of a deep chocolate and port wine colour; the other plant is Cattleya Schroderi, almost pure white, in the way

of C. Trianæ or Mendelii, having a round labellum and yellow throat.

Messrs. J. Laing & Co., Forest Hill, London, staged a large number of flowering Begonias, in all shades of colour; the immense size of the single blooms and the fulness of the double varieties were indicative of the attention bestowed on this now popular flower. The Liverpool Horticultural Company (J. Cowan manager) also staged a fine group, including Palms, Ferns, Crotons, with numerous Orchids; among the latter the most effective were Vandas, Lælias, Dendrobiums, a number of Chysis bractescens, Lælia majalis, L. lobata, and Dendrobium tortile roseum.

Messrs. Cutbush & Son, Highgate, made a large display of miscellaneous plants, among which Azaleas, Palms, Heaths, Maples, and Dracænas, were nicely blended with Boronias, Clerodendron fragrans, a beautiful lot of the seldom seen Leschenaultia biloba major, whose bright blue flowers were much admired; Tetratheca hirsuta and Leptospermum bullatum were also well represented in this display.

From O. O. Wrigley, Esq., Bury, came 300 plants of Cattleya Mossiæ, bearing a profusion of lovely blossoms. Some of the specimens were carrying from twelve to twenty blooms each. A little multiplication sum will give some idea of the large number the plants carried. A bank of these was made on each side of the show-house, each bank being some 15 yards long. Ferns and light foliage plants were used very effectively in the arrangement, the whole being a display not readily forgotten.

J. Broome, Esq., Didsbury, had a very fine group of Orchids, stove and greenhouse plants, togther with a collection of Sarracenias and other Pitcher plants. Vanda teres was a fine plant, with over fifty spikes of bloom; as were likewise V. suavis Gotteschalkii, Dendrobium Wardianum clavatum, D. Bensonæ, Cattleya Mossiæ, Lælia purpurata, Aërides Fieldingii, and Phalænopsis grandiflora.

Amongst the Nepenthes we noticed bicalcarata, sanguinea, Hookeri, Mastersianax, &c. There were large plants of Sarracenia Chelsonix, S. Flambeau, S. flava maxima, S. Swaniana, and S. Mitchelliana, &c. C. Moseley, Esq., Grangethorpe, Rusholme, had an excellent group, which included Indian Azaleas, Palms, Ferns, Yucca filamentosa variegata, Dendrobium nobile, Anthuriums, and Ericas.

Mr. B. S. Williams, Holloway, showed a number of fine Amaryllis, Azaleas, Crotons, Hydrangeas, many choice and well-bloomed Orchids, besides good varieties of Imantophyllum.

Messrs. W. & G. Birkenhead, Sale, near Manchester, exhibited a fine and varied assortment of stove and greenhouse Ferns, including many of the rarer kinds. The beautiful shades of green observed in the newly-expanded fronds of these beautiful plants were quite a relief after viewing the vivid colours of many of the collections of plants.

Messrs. R. P. Ker & Son, Aigburth, had a capital display of Indian Azaleas and Calceolarias, whilst Messrs. Heath & Son, Cheltenham, displayed many species and varieties of Orchids and Palms, the whole being prettily edged with plants of Adiantum and Panicum variegatum.

J. Heywood, Esq., Stretford, staged twenty-four specimen Orchids, each one being good of its kind, and the duplicates that were present and single plants, included Lælia purpurata, C. Mendelii, C. Mossiæ, Angræcum sesquipedale, Dendrobium thyrsiflorum, D. Falconeri, well grown in bush form, full of flower; Oncidium ampliatum majus, and Vanda tricolor.

A nice collection of Miltonia vexillaria was sent from the Duke of Devonshire's gardens at Chatsworth; these were in 6 and 8-inch pots, and full of spikes and flowers.

A grand display of cut Orchid blooms was made by A. Heine, Esq., Fallowfield, who had twenty-four glasses filled with different species and varieties—i.e., Calanthe veratrifolia, Odontoglossum Alexandræ, Cattleya Skinneri, C. Mossiæ, C. Mendelii, Lælia purpurata, L. elegans, Dendrobium thyrsiflorum, D. suavissimum, Cypripedium Lawrenceanum, C. villosum, Odontoglossum facetum, O. citrosmum, &c.; these were tastefully associated with Adiantum cuneatum.

Mr. W. Owen, Hartford, had a fine display of Cattleya Mossiæ blooms, and pots of Adiantum.

Mr. J. Mason, Victoria Street, and Ashton Nursery, staged a magnificent lot of bouquets, wreaths, anchors, and crosses, with baskets of cut blooms, consisting of Roses, Carnations, Lilacs, Lilies of the Valley, the whole nicely banked up with small Palms, and edged with Fern, moss, and Isolepis gracilis.

Messrs. J. R. Pearson & Son, Nottingham, had some good clusters of zonal Pelargoniums; Mr. T. Ware, Tottenham, showing fine heads of bloom of varieties of Pæonies. From Messrs. Perkins & Son, nurserymen, Coventry, came an immense mourning wreath, bouquets, sprays, and buttonholes.

S. Schloss, Esq., Bowden, sent a fine collection of stove and greenhouse plants in flower, that were associated with Ferns and Palms; amongst them being a specimen of Bougainvillea glabra, 5 feet by 4 feet, and full of flower; a fine seedling Anthurium, A. crystallinum; A. Scherzerianum, with forty spathes; Azalea Iveryana, 6 feet by 4 feet; Rhododendron Sesterianum, large white flowers; Eucharis amazonica, Clerodendron Balfourii; among the foliage plants were Dicksonia antarctica, with stem 10 feet high, and well formed head. Latania borbonica, Cibotium regale, Dracænas, Adiantums, &c., were employed to mask the front lines of pots.

A fine feature in the tents was the collection of hardy herbaceous, alpine, and bulbous plants shown by the Messrs. F. & A. Dickson & Sons, of Chester, which included Pæony arborea, T. P. Lambertiana, Countess of Tudor, Baronne d'Alex; Gladiolus elegantissimus, G. Ne Plus Ultra, and others; fine collections of Ixias, also of Iris, Lilium Harrisii, very fine; Papaver nudicaule, P. miniatum, Camassia esculenta atro violacea; fine collections of Violas, Anemone sylvestris, Trollius europæus, and Scilla campanulata alba.

Messrs. J. Dickson & Sons, Chester, had a group of hardy plants equally extensive, comprising from 300 to 400 specimens, and containing the following:—Cypripedium calceolus (a grand example), C. pubescens. C. spectabile (in fine form), Lilium Harrisii, L. Szovitzianum, L. testaceum, L. candidum, L. pyrenaicum, L. davuricum grandiflorum, Tulipa retroflexa, T. fulgens, &c.; Orobus niger, Funkia Sieboldii, F. ovata aurea maculata, Phloxes in variety, Delphinium Victor le Bihan, D. Belladonna, and some grand seedlings; Spiræa aruncus, S. japonica, S. palmata, &c.; Doronicum platycerum excelsum, Saxifraga nepalensis, S. McNabiana, Dielytra spectabilis and alba, Pæonia tenuifolia fl.-pl., and the beautiful single form; Farfugium grande, Campanula Burghaltii, C. van Houttei, C. nemoralis, C. azurea, C. latifolia, and C. macrantha; Narcissus bicolor, N. poeticus recurva, N. odoratus, N. Tazetta orientalis, N. Grand Monarque, &c.; Gladioli, Dodecantheon integrifolium, Sempervivums in variety, Saxifragas, Violas, alpine Auriculas, &c.; altogether upwards of 400 specimens, entirely filling one tent.

Other showy and acceptable plants came from Messrs. A. Waterer & Son, who showed a capital lot of Rhododendrons in pots; and Messrs. Paul & Son occupied their usually important position, with a fine display of Roses in pots—good useful sorts, several of recent introduction being noticeable.

S. Barlein, Esq., Didsbury, had a circular group 6 yards in diameter, arranged for effect. We have no hesitation in saying that this was the finest thing in its way seen at a Manchester exhibition, and Mr. G. Williams, his gardener, deserved great praise for successful execution. The centre plant was a light feathery Geonoma, well raised up, and banked with Selaginella denticulata; nice plants of Gladiolus elegantissima and white Marguerite were inserted; the outer edge of the space had a number of plants of Dracæna Lindeni and others slightly elevated above the undergrowth; and the intervening space was filled lightly with pots of Rhodanthe, Crotons, a few Dracænas, and a carpeting of moss with an edging of Adiantum and Panicum variegatum.

Messrs. Rylance & Son were as usual well to the fore with twelve large plants of show and fancy Pelargoniums, and six well bloomed specimens of zonals; each fresh, full of bloom, dwarf and compact. Mr. W. Plant exhibited fifty seedling Aquilegias, many of distinct and beautiful colours, very floriferous, that were much admired. These plants were a sample of a large quantity now flowering in the garden of R. P. Gill, Esq., Ashton-on-Mersey, where Mr. Plant, the gardener, has been working at these beautiful hardy subjects for the past five years; the results obtained being as fine a type as could be desired, as may be gathered from the fact that three of the seedlings were awarded First-class Certificates. Pansies, Calceolarias, Gloxinias, and alpines were shown in large numbers and in excellent condition; the Calceolarias especially being dwarf, with wide spreading heads, the flowers of large size, and beautiful and distinct as to colour.

Mr. J. Brown had about six dozen pots of Roses, Tea and hybrid perpetuals, full of bloom.

From Messrs. Hooley & Sons, Stockport, came also thirty-six good specimens; whilst Mr. W. J. Williams, florist, Stockport, staged about fifty well bloomed plants of Roses.

The fruit shown by Sir J. W. Pease, M.P., Mr. J. F. Campbell, the Earl of Ellesmere, Mr. W. Breshuton. Chorley; the Rev. W. Sneyd, Keele Hall, &c., was of excellent quality. In the former collection Mr. McIndoe had twenty-eight stands and dishes, some being duplicates, but a large proportion being single dishes—Grapes, Cherries, Figs, Peaches, Nectarines, Strawberries, Melons, Oranges, Lemons, and Apples being well represented. Mr. T. Earnshaw showed good Muscats, Black Hamburghs, Tomatos, and Cucumbers, &c. Mr. W. Chuck, gr. to Peter Thellusson, Esq., Brodsworth Hall, was awarded a Second class Medal for Grapes and Strawberries.

BATH AND WEST OF ENGLAND AGRICULTURAL.

Dorchester, *May* 31.—An exhibition of flowers, fruit, and vegetables was opened on Tuesday, May 31, in connection with the agricultural department. The horticultural exhibits, although limited to one large tent, presented quite a representative collection. It will be well to mention that the tent is constructed upon a capital principal, the two ends are of wood and glass, and the temperature can be raised or lowered by a well arranged method of ventilation, according to the state of the weather, thus adding greatly to comfort of the visitors, and not placing the plants in jeopardy of being injured by heat or cold. As only a limited number of prizes is offered, the plant exhibits were not arranged in the usual show order, but the interior of the tent presented the same attractive appearance as a well and tastefully arranged conservatory, so that the familiar groups of twelves and sixes of veteran prize-winners in the stove and greenhouse classes were not conspicuous in this exhibition. The steward of this department, the Hon. and Rev. J. T. Boscawen, F.L.S., Lamorran Probus, Cornwall, directed the arrangement of the various exhibits, and the idea of harmonising the exhibitors' plants one with another so as to produce the best general effect, was well carried out.

The Orchids were the chief feature of the show especially those exhibited by W. E. Brymer, Esq., Ilsington House, Dorchester (gr., Mr. J. Powell), which gained the ten-guinea Cup. The most noticeable amongst this excellent group were splendid plants of Lælia purpurata in a basket, with fifty-four blooms, quite fresh; Cattleya Mossiæ, also in a large basket, a magnificent specimen, carrying 120 blooms; Dendrobium Falconeri, growing on a Tree Fern stump, such a plant as is rarely seen; a second specimen of this was also very good; Vanda teres was well represented by a very fine plant with fourteen spikes of bloom; and also good plants of the following:—Miltonia vexillaria, Lælia purpurata Russelliana, Cypripedium niveum, C. Lawrenceanum, Vanda tricolor, Masdevallia Harryana, Odontoglossum Pescatorei, and small well flowered pieces of O. crispum. The above-named exhibitor also contributed some fine Ferns, Carnation Souvenir de la Malmaison in pots, Clerodendron, Ixoras, Anthurium, and a nice pan of Scutellaria Mocciniana. The fine Tree Fern shown by this exhibitor was wisely plunged in the ground in the centre of the tent, and with good effect. H. M. Middleton, Esq., Bradford Peverell, Dorchester (gr., Mr. W. Gallop), was fortunate enough to be awarded the five-guinea Cup, offered for the best specimen Orchid in the show; this was a magnificent plant of Odontoglossum pulchellum, with forty-five spikes of bloom. This award did not give general satisfaction, inasmuch as it is not a showy looking flower; but Mr. J. Dominy (judge) pronounced it to be a wonderful plant, with which opinion we quite concurred. H. M. Middleton, Esq., also contributed good Gloxinias, and a fine plant of Dendrobium nobile. R. D. Thornton, Esq. (gr., Mr. J. Mundell), Birkin House, Dorchester, exhibited good Gloxinias in 6-inch pots. N. Bond, Esq., Creech Grange, Wareham (gr., Mr. T. Tyler), showed a collection of hardy Azaleas, some greenhouse Rhododendrons, and Ferns. This garden is said to contain many meritorious things, although it is a place but little known beyond the Isle of Purbeck. Captain Dymond (gr., Mr. Surman) exhibited a group, amongst which were grand plants of Adiantum gracillimum and Farleyense. Sir W. Marriott, Down House, Blandford (gr., Mr. Denny), also contributed a grand plant of Adiantum Farleyense. Mr. J. Crocker, King's Kerswell, sent a stand of Gloire de Dijon Roses,

but being late coming to hand, they were not seen at their best.

Lord Wimborne and Lord Alington kindly sent some Palms, and amongst the former lot were some fine Seaforthias, Arecas, &c. General Hemming sent a fine plant, amongst others, of Latania borbonica.

Mr. Crane (gr., Mr. Smith) put up a stand of seedling Pansies; amongst them were some promising varieties. Mr. F. Hooper, Vine Nursery, Widcombe Hill, Bath, arranged some good stands of Pansies, as also did Mr. H. Hooper, Harvester Nursery, Chippenham.

Messrs. R. Smith, of Worcester, as usual, must be credited with fine specimens of Clematis. We noted a few of the best as follows:—Madame Van Houtte, silvery-white; Lady Caroline Neville, pale mauve; Lucie Lemoine, flowers of grand substance, paper-white; in the centre of these were a nice lot of hardy Acers.

Mr. Harris, nurseryman, Dorchester, planted some small beds with Pelargoniums.

Fruit.—In this class prizes were offered for the best collection, and for the best dish of Strawberries; only one exhibitor came forward for the collection, W. E. Brymer, Esq., with a fairly good lot (gr., Mr. J. Powell). The best dishes were Peaches, Grapes, Nectarines. The same exhibitor took 1st for Strawberries, with a good dish of President; 2d, M. Bond, Esq., with Sir J. Paxton. A collection of well-kept Apples was worthy of notice, sent by Mr. W. Gallop.

Only two competitors came forward for the collection of vegetables, Mr. D. Williams, gr. to Lord Wimborne, Canford Manor, taking 1st honours with a collection which would be hard to beat at this time of the year. The dishes were Lyon Leek, Chelsea Gem Pea, Early Milan Turnip, Veitch Model Carrot, a nice dish of Mushrooms, Sutton's Queen Broccoli, half-a-dozen Telegraph Cucumbers, Canadian Wonder Beans, Perfection Tomatos, Brown Cos Lettuce, Italian Tripoli Onions, Ashleaf Potatos, and Connover's Colossal Asparagus; 2d, Mr. J. Powell, gr. to W. E. Brymer, Esq., with a fair lot—his best dishes were Leeks, extra fine; Beans, Turnips, Asparagus, Broccoli, and Potatos.

We noticed nothing to call for special mention in horticultural structures.

Mr. J. Mathews, of Weston-super-Mare, had a nicely arranged group of terra cotta statuary, vases, &c., also a small building roofed (as an example) with his corrugated tiles, which seem to be all that could be desired in this style of roofing. *G. H. R.*

The Orchid Houses.

Insects.—The exceedingly cold and changeable character of the present spring has rendered great caution necessary in ventilating the houses. Should warmer weather ensue insects will begin to increase in number, more especially thrips. It is best to try every safe means for destroying these before resorting to steaming or fumigating, and if driven to the latter remedy, before doing so, time will be well spent in going over the plants when the foliage is dry, and brushing down into the growths a little flowers of sulphur: a very small quantity will suffice, not enough to endanger the plants if washed down into the pots. In doing it simply dip a small, soft brush into the sulphur, and brush it into the growth; this will drive the thrips from their hiding-place, thereby exposing them to the effects of the tobacco fumes. I maintain that thrips are easier killed than aphis, if kept fully exposed. It is necessary after fumigating to examine the plants, and sponge off any eggs that are found on the underside of the leaves; if this be not done, another generation will appear in a few days.

Work amongst the Plants.—The new growth of many Dendrobiums will be getting well advanced and sending out roots from the base; those plants that were not repotted before should now be top-dressed. Remove any of the old compost that will come readily away, taking care not to disturb the roots, for should the plants now receive a check, it will cause them to finish their growth prematurely and start a new one, the consequence being that neither will finish sufficiently strong to produce good flowering pseudobulbs. Strong plants of D. Bensonæ in company with D. Jamesianum and D. infundibulum make a pleasing display at the present time. The former, when growing, delights in abundance of heat, and a moist air with a light position. If grown in pots or pans it does best when set well above the compost, keeping the base of the pseudobulbs exposed. This Orchid roots well in fibrous peat, but there must not be much of it. It is, no doubt, well known that the D. Jamesianum type of Dendrobe will grow in the cool-house, but we find them to flower freer when grown on the north side of the Dendrobium-house. The following hybrid Lælias and Cattleyas (if starting to grow) should receive attention:—Lælia callistoglossa, L. flammea, L. Philbrickiana, Cattleya Marstersoniæ, and C. exoniensis ×. Cattleya Mendelii and C. fausta start growing much earlier than the former. If any of these hybrids should appear exhausted through over-flowering, and should put on a shrivelled appearance, they may be restored to health by placing them in a division in which the air is more moist and the night temperature a few degrees warmer, but such plants should be returned to the Cattleya-house when they have regained their vigour, otherwise they will become too soft, in which condition disease might assail them. Weak plants of Cattleya Mossiæ should have their flowers cut off when opened; the white varieties suffer much if the blooms stay on a long time. Cattleya Lawrenceana, C. speciosissima, and C. Skinneri should be potted, or top-dressed when the growths have started. *C. Woolford, Downside, Leatherhead.*

Plants and Their Culture.

The Conservatory.—Large foliage plants planted out in conservatories that are suitably constructed and heated, and are properly furnished with beds and borders, can be kept in creditable order with considerably less labour than when grown in pots, and the planting-out system not only lessens work but affords better opportunities of displaying the beauties of the plant. It must, however, be admitted that such a gay display of flowers cannot be kept up continuously by this mode as when the pot-system is adopted, and the pots are changed at will, but herein lies the question of labour, now become so serious to most of us. Amongst large-growing plants that take a leading place in this kind of embellishment Palms rank first, and Kentias may be placed foremost with these; K. Fosteriana, K. australis, K. Belmoreana, &c., form grand specimens, and are at all times admired; these with Arecas, Phœnixes, Chamædoreas, Rhapis, Seaforthias, Cocos, &c., are now, where in good condition, developing foliage, and will need frequent and copious supplies of water to well moisten the beds throughout, and it may be remarked that an error is more likely to be committed by not giving enough, than by giving too much, provided the plants are perfectly established, and the beds efficiently drained. Newly planted specimens will, of course, require very careful watering until well rooted. The foliage should likewise be thoroughly syringed with tepid rain-water each afternoon when the structure is closed, and its condition may be maintained or improved by occasional sprinklings of Clay's fertiliser upon the surface of the soil immediately previous to watering. It is marvellous how quickly concentrated manures of this kind act upon Palms and similarly constituted plants, by changing sickly-looking foliage to a healthy appearance, when the debility is occasioned by lack of nourishment. Scale is often troublesome to Palms, and may be kept under by sponging and employing insecticides. We generally use Fir-tree oil for this purpose, and keep thrips down with the syringe. Seaforthias are particularly liable to attacks from these, and its foliage when neglected is quickly disfigured by them. Tree Ferns also require plenty of water at this season, and their stems, which are now enwrapped with active roots, should be kept constantly damp by means of the syringe; their old fronds are sometimes allowed to hang after they die, and thus partially protect the stems from drought; but although this is a wise provision of Nature, I cannot say I like to see it utilised in conservatories where neatness should be one of the chief attractions. Although Cycads do well in confined root-space and are moderate in their demand for water, some of them are also suitable for planting out. I recollect good examples of Zamia pungens, &c., at Woburn that were treated in this way. The various kinds of Musas all succeed best planted out, as does likewise Ravenalia madagascariensis, a plant possessing noble foliage similar to the Musas, and known as the "Traveller's Tree," on account of water being at all times found in the axils of its leaves. The thong-like roots of the Musas are gross feeders, and should be plentifully supplied with liquid-manure through the summer, as should also the Ravenalia, it being also requisite on account of their massive foliage that good judgment should be exercised in planting these plants. Pandanus and Dracænas of the Draco and indivisa types need similar treatment as has been advised for Palms. *Thomas Coomber, Hendre Gardens, Monmouth.*

Obituary.

It is with great regret that we have to announce the death of Mr. George Jackman, of Woking Nursery. Mr. Jackman attended the recent show of the Royal Botanic Society at Regent's Park, where he contracted a cold which developed into congestion of the lungs; but it was not considered that there was any cause for fear till Friday last, when Mr. Jackman was suddenly taken worse, and gradually sank till he died, shortly after mid-day, on Sunday, May 29. Among horticulturists Mr. Jackman's memory will ever be associated with hybrid Clematises, to which he gave such close attention, and with such success. One of his productions—C. Jackmanni—is so well known that we need only mention it now. He will also be remembered by his valuable addition to gardening literature, *The Clematis as a Garden Flower*, which was the product of the joint labours of himself and the late Thomas Moore. Mr. Jackman, who was the only son of George Jackman, was born March 13, 1837, and has lived all his life at Woking, succeeding to the nurseries on his father's death. He leaves a widow and eleven children.

The Weather.

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING JUNE 11. (AVERAGE OF THIRTY-THREE YEARS.)

June 5	59°.4	June 9	60°.0
„ 6	59°.6	„ 10	60°.1
„ 7	59°.7	„ 11	60°.2
„ 8	59°.9	Mean for the week ...	59°.8

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 32° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature.				
	Above or below the Mean for the week ending May 30.	Accumulated.			
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 4, 1887.	Below 42° difference from Mean since Jan. 4, 1887.
Principal Wheat-producing Districts.		Day-deg.	Day-deg.	Day-deg.	Day-deg.
0. Scotland, N. ...	1 above	54	0	+ 50	+ 39
1. Scotland, E. ...	1 above	67	0	+ 67	+ 41
2. England, N.E. ...	5 below	32	0	— 55	+ 82
3. England, E. ...	4 below	53	0	— 151	+ 168
4. Midland Cos. ...	5 below	50	0	— 138	+ 166
5. England, S. ...	3 below	67	0	— 136	+ 151
Principal Grazing, &c., Districts.					
6. Scotland, W. ...	2 above	81	0	— 5	+ 47
7. England, N.W. ...	2 below	64	0	— 100	+ 118
8. England, S.W. ...	1 below	75	0	— 110	+ 172
9. Ireland, N. ...	0 (aver.)	77	0	+ 11	+ 23
10. Ireland, S. ...	1 above	87	0	— 19	+ 97
— Channel Islands	3 below	72	0	— 181	+ 77

DISTRICTS.	RAINFALL. More or less than the Mean for the Week.	RAINFALL. No. of Rainy Days since Jan. 4, 1887.	RAINFALL. Total Fall since Jan. 4, 1887.	BRIGHT SUNSHINE. Percentage of possible duration for the Week.	BRIGHT SUNSHINE. Percentage of possible Duration since Jan. 4, 1887.
Principal Wheat-producing Districts.	Tenths of Inch.		Ins.		
0. SCOTLAND, N. ...	4 less	88	16.0	21	22
1. SCOTLAND, E. ...	2 less	67	8.2	30	32
2. ENGLAND, N.E. ...	0 (aver).	67	6.3	1	29
3. ENGLAND, E. ...	1 less	63	6.9	19	34
4. MIDLAND COS. ...	2 less	60	6.7	9	30
5. ENGLAND, S. ...	2 less	61	7.0	16	33
Principal Grazing, &c., Districts.					
6. SCOTLAND, W. ...	5 less	71	14.4	46	33
7. ENGLAND, N.W....	4 less	59	9.0	29	33
8. ENGLAND, S.W....	4 less	62	8.4	22	41
9. IRELAND, N. ...	5 less	69	10.8	47	33
10. IRELAND, S. ...	5 less	60	10.3	42	41
— CHANNEL ISLANDS	1 more	70	7.7	25	46

THE PAST WEEK.

THE following summary record of the weather for the week ending May 30, is furnished from the Meteorological Office:—

"The *weather* has been generally fair and mild in Ireland and Scotland, but very dull and unseasonable in England, with occasional slight falls of rain.

"The *temperature* has been 1° or 2° above the mean in Scotland, and the greater part of Ireland, but in the English districts it has continued below, the deficit ranging from 1° in 'England, S.W.,' to 4° in 'England, E.,' and 5° in the 'Midland Counties' and 'England, N.E.' The highest of the maxima, which were generally recorded during the earlier part of the week, ranged from 60° in 'England, N.E.,' and 62° in the 'Channel Islands,' to 70° in 'Ireland, N.,' 71° in 'Scotland, E.,' and 'England, S.W.,' and to 72° in 'Ireland, S.' The lowest of the minima, which were registered on irregular dates, varied between 37° in 'Scotland, E.,' and 47° in the 'Channel Islands.' The minima during this period were considerably higher generally than any recorded since the middle of last October.

"The *rainfall* has been rather more than the mean in the 'Channel Islands,' but less in nearly all other districts. In Ireland, Scotland, and the north-west of England the fall has been very slight.

"*Bright sunshine* shows an increase in Ireland and the greater part of Scotland, but a decided decrease over England and in the 'Channel Islands.' The percentage of the possible amount of duration ranged from 46 to 21 in Scotland, and from 47 to 42 in Ireland, while in 'England' it ranged from 29 in 'England, N.W.,' to 9 in the 'Midland Counties,' and to only 1 in 'England, N.E.' The percentage of bright sunshine has not been so low in the English districts since the latter end of January."

PEAT AS A PAPER-FIBRE.—Peat as a fibre for the manufacture of paper is attracting attention in America. A paper-maker who has been experimenting informs the *Paper Trade Review* that "as a suitable material it may now be looked upon as an accomplished fact." The process of preparing the fibre is thus described:—The turf, or top surface of the peat, is removed, and is utilised for litter, and the fibrous peat is taken up with an ordinary peat-spade, in strips or blocks 12 inches by 3; it is placed on trays so formed that a current of air passes through, and placed in racks on the trays for partial drying. After being partially dried on the trays the peat is put through a machine which thoroughly separates the fibre. The peat passes around a toothed drum, and at an incredible speed is separated exactly in the same way as a man would separate oakum. Great lumps of peat are shovelled in at the top of the machine and are in a moment later blown across the floor like so much wool at the rate of 3 tons an hour. The fibre is finally dried on the floors of the mill or manufactory, is put into sacks, and is ready for the market. *Indian Agriculturist, April* 30.

NOTICES TO CORRESPONDENTS.

*** Correspondents will greatly oblige by sending early intelligence of local events likely to be of interest to our readers, or which it is desirable to bring under the notice of horticulturists.

INTELLIGENT READERS, DO PLEASE NOTE *that letters relating to* ADVERTISEMENTS, *or to the supply of the Paper, should be addressed to the* PUBLISHER, and that all communications intended for publication, as well as specimens and plants for naming, should be addressed to the EDITOR. Such communications should be *written on one side only of the paper*, and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

ANTS IN THE TENNIS LAWN: *Mrs. Shillingford.* As the ants are completely in possession, it will be no easy task to dislodge them at this season; but you might try mild applications of quite fresh Peruvian guano, which is very distasteful to the ant; or a weak dilution of carbolic acid—say one part acid to fifty of water. Several applications will be necessary, whichever be employed.

BOTANICAL BOOK: *A Young Gardener.* For further study get Henfrey's *Elementary Course of Botany* (Van Voorst, London). The phials can be obtained at any good chemist's.

CAMELLIA LEAVES DISFIGURED: *F. B.* The leaves have been punctured by aphides whilst in a very young stage. The drainage may also be at fault, and that in spite of the main drain passing under the border.

CARNATIONS: *W. J. G.* We cannot tell you what the creature is if you do not send one for our inspection.

CLOVER AND VETCH ROOTS: *J. W.* Nothing unusual; almost all Leguminous plants have these swellings.

CORRECTION.—At p. 703, col. *a*, line 26 from the bottom, for Comtesse de Ingreuse, read Comtesse de Pregneuse.

CUTTING DOWN TULIPS AND HYACINTHS: *Bon accord.* These should not be denuded of their foliage before it has turned yellow, but if they are considered unsightly there will be no harm done by lifting the bulbs with care and "laying them in" in a sunny place to mature.

GLADIOLUS: *H. T.* Yes, often seen in Crocuses.

LESCHENAULTIA BILOBA MAJOR. *W. B. & Sons.* A beautifully bloomed little plant. We wish more more of it and similar subjects were grown as market plants.

MARKET PLANTS: *A Market Gardener.* For Pelargoniums see p. 744 of the present issue. The species of Cytissus grown are racemosus and Atleeanus, Varieties of Heliotrope are numerous. Good are Jersey Beauty, mauve; Albert Delaux, Roi des Massifs, a dark flower; and Roi des Noirs, a deep blackish-purple.

NAMES OF PLANTS: *J. Carter & Co.* Exochorda grandiflora.—*F. E. C.* Saxifraga Hostii.—*O. Thomas.* Myriocarpa colipensis, an interesting Urticaceous plant. Will you kindly oblige us with a fresh shoot, packed in wet moss, for microscopic examination?—*W. C.* Claytonia alsinoides.—*Sir C. Strickland.* The material sent is not sufficient to enable us to identify the Berberis satisfactorily. If you can send us better material we will try again. Can you give the country?—*Jas. Hopkins.* Chrysosplenium oppositifolium. — *G. Payne.* 1, Ranunculus Auricomus; 2, Stellaria Holostea; 3, Potentilla fragariastrum; 4, Chrysosplenium oppositifolium; 5, Nepeta glechoma; 6, Pedicularis sylvatica.—*J. E. M.* 1, Symphytum tuberosum; 2, Epimedium alpinum; 3, Stellaria Holostea; 4, Mercurialis perennis; 5, Kerria japonica fl.-pl.; 6, Anchusa italica. — *J. H.* 1, Dielytra eximia; 2, Ledum palustre; 3, a Pyrus? (want foliage); 4, Amelanchier canadense. — *North.* The Cockspur Thorn (Cratægus crus Galli), if it has large thorns.—*J. J. Watney.* Letter received, but it contained nothing to be named.—*Theod. Lange.* It is a pretty variety of Cattleya Mendelii.

NARCISSUS: *W. M. P.* A double form of N. poeticus.

PEACH LEAVES: *G. T.* The silver leaf-disease, the cause of which is unknown. Cut the shoots back, they may break out healthily. Give plenty of water and weak manure-water.

RESURRECTION PLANT FROM MEXICO: *Mexican.* Selaginella lepidophylla is so called.

STRAWBERRIES: *Bon accord.* You must have made your Strawberry bed so exceedingly rich that the plants now produce nothing but leaves. You will do no good by cutting these off, and had better allow all to grow, even the runners, so that the soil may become somewhat less rich. When Strawberries throw up strong flower-stalks there is nothing to be gained by removing the foliage, unless the plants stand too close to each other, the season being a moist one, and therefore liable to produce rotting of the berries. Strawberry runners, if well prepared betimes, and planted in August, will bear good crops on suitable soils, but as a general rule the plants bear most in the second year. Nearly all kinds of beetles, especially the various kinds of weevils, feed on the roots and leaves of garden plants, the green rose-chafer feeding chiefly on the roots and blossoms of the Strawberry. In dull weather this beetle may be caught by hand, but during sunshine they are more active, and may then be taken with a bag-net. If the maggots (which remain underground two and three years) are numerous, they may be got rid of by turning the soil over, and afterwards allowing poultry to clear off the grubs.

CATALOGUE RECEIVED.

DAMMANN & Co., San Giovanni a Teduccio, near Naples, Italy—Bulbs, Roots, and Orchids.

COMMUNICATIONS RECEIVED.—T. L.—W. B. H.—T. S. & Co.—C. D.—H. E.—R. T.—B.—F. W. S.—R. D.—W. W.—H. H. S.—H. Low.—J. R. J.—R. A. K.—J. G. B.—O. T.—E. C. M.—F. W. M.—J. C.—Clarke Bros.—Vagabond.—Cervantesi.—C. W. D.

MARKETS.

COVENT GARDEN, June 2.

[The subjoined reports are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list weekly, and are responsible for the quotations. It must be remembered that these quotations are averages for the week preceding the date of our report. The prices fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the prices at any particular date, still less can they be taken as guides to the price in the coming week. ED.]

OUR market has been heavily supplied the last three or four days, trade being quiet, and prices considerably affected. *James Webber, Wholesale Apple Market.*

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz.	6 0–18 0	Fuchsias, doz. ...	4 0–12 0
Arum Lilies, dozen...	9 0–12 0	Hydrangeas, doz. ...	9 0–12 0
Azaleas, per dozen ...	18 0–30 0	Lilium longiflorum, per dozen ...	24 0–36 0
Cinerarias, per doz...	6 0– 9 0	Lily-of-Val., 12 pots	12 0–18 0
Cyperus, per dozen .	4 0–12 0	Lobelias, dozen ...	4 0– 6 0
Dracæna terminalis, per dozen ...	30 0–60 0	Marguerite Daisy, per dozen ...	6 0–12 0
— viridis, per doz.	9 0–24 0	Mignonette, doz. ...	6 0– 9 0
Erica, various, per dozen ...	18 0–30 0	Musk, per dozen ...	3 0– 6 0
Euonymus, in var., per dozen ...	6 0–18 0	Myrtles, per dozen...	6 0–12 0
Evergreens, in var., per dozen ...	6 0–24 0	Palms, in var., each	2 6–21 0
Fairy Roses, doz. ...	8 0–12 0	Pelargoniums, dozen	6 0–18 0
Ferns, in variety, per dozen ...	4 0–18 0	— scarlet, per doz.	4 0– 8 0
Ficus elastica, each .	1 6– 7 0	— Ivy-leaved, doz.	4 0– 6 0
Foliage plants, various, each ...	2 0–10 0	Rhodanthe, dozen ...	6 0– 9 0
		Roses, various, per dozen ...	18 0–30 0
		Spiræa, per dozen ...	9 0–12 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Abutilons, 12 bun ...	2 0– 4 0	Myosotis, 12 bun. ...	2 0– 6 0
Anemone, 12 bun. ...	2 0– 4 0	Narcissus, 12 bun, ...	1 0– 3 0
Arum Lilies, 12 blms.	3 0– 5 0	— double, 12 bun...	3 0– 6 0
Azaleas, 12 sprays ...	0 6– 0 9	Pansies, 12 bunches	2 0– 3 0
Bouvardias, per bun.	0 6– 1 0	Pelargoniums, 12 spr.	0 6– 1 0
Camellias, 12 blooms	1 0– 3 0	Primroses, 12 bun....	0 6– 1 0
Carnations, 12 blms.	0 9– 2 0	Primulas, double, 12 sprays ...	0 9– 1 0
Eucharis, per dozen	4 0– 6 0	Roses, Tea, per doz.	1 0– 2 0
Gardenias. 12 blooms	1 0– 3 0	— coloured, dozen.	2 0– 4 0
Heliotropes, 12 spr.	0 6– 1 0	— red, per dozen ...	1 6– 2 0
Jasmine, white, bun.	0 6– 0 9	— Saffrano, dozen...	1 0– 1 6
Lilac, 12 bunches ...	4 0– 8 0	Spiræa, 12 bunches..	6 0– 9 0
Lilies of the Valley, 12 sprays ...	0 6– 1 6	Stephanotis, 12 spr.	2 0– 4 0
— 12 bunches ...	6 0–12 0	Tropæolums, 12 bun.	1 0– 2 0
Lilium longiflorum, 12 blooms ...	3 0– 6 0	Tulips, 12 bunches ...	2 0– 4 0
Marguerites, per 12 bunches ...	3 0– 6 0	Tuberoses, 12 blms....	1 0– ...
Mignonette, 12 bun.	3 0– 6 0	Violets, 12 bunches...	0 4– 0 9
		Wallflowers, 12 bun.	3 0– 6 0

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apple, ½-sieve	4 0– 6 0	Melons, each	1 6– 3 0
— Nova Scotia, brl.	8 0–12 0	Peaches, dozen	6 0–15 0
Grapes, per lb.	3 0– 5 0	Pine-apples, Eng., lb.	1 0– 1 6
— Channel Isl., lb.	2 0– 3 0	— St. Michael. each	3 0– 8 0
Kent Cobs, 100 lb.	60 0– ...	Strawberries, per lb.	1 0– 3 6
Lemons, per case	12 0–21 0		

VEGETABLES—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, per doz.	4 0– ...	Lettuce, Cos., Fr., each	0 6– ...
Asparagus, French, per bundle	2 0– 6 0	Mushrooms, punnet	1 6– 2 0
— English, per 100	5 0– ...	Mustard and Cress, punnet	0 4– ...
Beans, Kidney, lb.	2 0– ...	Onions, per bushel	4 0– ...
Beet, red, per dozen	1 0– 2 0	Parsley, per bunch	0 6– ...
Carrots, per bunch	0 6– ...	Peas, per quart	4 0– ...
Cauliflowers, per dozen	3 0– ...	Potatos, per cwt.	4 0– 5 0
Celery, per bundle	1 6– 2 0	,, kidney, per cwt.	4 0– 5 0
Cucumbers, each	0 6– 1 0	Rhubarb, per bundle	0 6– ...
Endive, per dozen	3 0– ...	Seakale, per punnet	2 6– ...
Green Mint, bunch	0 6– ...	Shallots, per lb.	0 3– ...
Herbs, per bunch	0 4– ...	Spinach, per bushel	4 0– ...
Leeks, per bunch	0 3– ...	Sprue, bundle	1 0– ...
Lettuce, per dozen	1 6– 2 0	Tomatos, per lb.	2 6– ...
		Turnips, new, bunch	1 0– ...

POTATOS.—Old samples very much advanced in price. Regents, 140*s.*; Magnums, 150*s.*; Champions, 100*s.* per ton. New, 16*s.* to 20*s.* per cwt.

SEEDS.

LONDON: *June* 1.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., write that the seed market to-day presented a holiday appearance. The sowing demand is now about over, and no great speculative movement has developed itself; still, there is some inquiry for Clover seed for holding over. Stocks of all descriptions remaining on hand are generally light, and prices accordingly moderate. Occasional orders drop in for spring Tares. For Hemp and Canary seed the sale is slow. There is more inquiry for sowing white Mustard. Rape seed also continues in favour. Blue boiling Peas sell at last week's currencies.

CORN.

Averages.—Official statement showing the average price of British corn, imperial measure, in the week ended May 28:—Wheat, 34*s.* 6*d.*; Barley, 23*s.* 1*d.*; Oats, 18*s.* 9*d.* For the corresponding week in 1886:—Wheat, 32*s.* 6*d.*; Barley, 23*s.*; Oats, 29*s.* 4*d.*

FRUIT AND VEGETABLES.

COLUMBIA (EAST LONDON): *June* 1.—Good supplies of all kinds of farm and market garden produce. Trade fairly active at undermentioned quotations:—Spinach, 1*s.* 6*d.* to 2*s.* 6*d.* per sieve; Cauliflowers, 2*s.* 6*d.* to 8*s.* per tally; Cabbages, 2*s.* 6*d.* to 5*s.* 6*d.* do.; Lettuces, 1*s.* to 1*s.* 6*d.* per dozen; Turnip Radishes, 6*d.* to 9*d.* per dozen bunches; Greens, 1*s.* 6*d.* to 2*s.* do.; spring Onions, 2*s.* to 2*s.* 6*d.* do.; Rhubarb, 1*s.* to 1*s.* 6*d.* do.; English Onions, 6*s.* to 8*s.* per cwt.; foreign (new Maltas), 6*s.* 6*d.* to 7*s.* 6*d.* do.; Carrots, 22*s.* to 28*s.* per ton; Mangels, 11*s.* 6*d.* to 14*s.* do.

STRATFORD: *May* 31.—The trade and supply have been good during the past week:—Cabbages, 1*s.* 6*d.* to 2*s.* per tally; Greens, 2*s.* per dozen bundles; Cauliflowers, 6*d.* to 1*s.* per dozen; Carrots, household, 25*s.* to 30*s.* per ton; do., cattle feeding, 12*s.* to 16*s.* do.; Mangels, 10*s.* to 17*s.* do.; Swedes, 18*s.* to 20*s.* do.; Onions, Dutch 3*s.* to 3*s.* 6*d.* per bag; do., Egyptian, 110*s.* to 130*s.* per ton; Watercress, 6*d.* per dozen; Lettuce, 1*s.* 6*d.* per score.

POTATOS.

BOROUGH AND SPITALFIELDS: *May* 31.—Supplies of new increasing; old decreasing. Quotations:—Regents, 80*s.* to 130*s.*; Magnum Bonums, 80*s.* to 140*s.*; Champions, 70*s.* to 90*s.* per ton. New Malta rounds, 10*s.* to 12*s.*; and Lisbon, 10*s.* to 11*s.* per cwt.

COLUMBIA (East London): *June* 1.—Quotations:—New Jersey kidneys, 30*s.*; do. Malta, 20*s.*; do. rounds, 12*s.* 6*d.* per cwt.; York and Lincoln Magnums, 75*s.* to 110*s.*; do. Regents, 70*s.* to 100*s.*; do. Victorias, 80*s.* to 95*s.*; do. Champions, 65*s.* to 80*s.*; Kent and Surrey Regents, 80*s.* to 100*s.*; do. Magnums, 80*s.* to 105*s.*; do. Champions, 70*s.* to 80*s.*; Cambridgeshire Regents, 80*s.* to 110*s.*; do. Magnums, 90*s.* to 120*s.*; do. Champions, 60*s.* to 80*s.*; Scotch Regents, 90*s.* to 140*s.*; do. Magnums, 100*s.* to 150*s.*; do. Victorias, 80*s.* to 95*s.*; do. Champions, 60*s.* to 85*s.* per ton.

STRATFORD: *May* 31.—Quotations:—Scotch Magnums, 100*s.* to 120*s.*; do. Champions, 85*s.* to 95*s.*; light-soil English, 100*s.* to 120*s.*; dark do., 90*s.* to 100*s.* per ton. New: Lisbon, 10*s.*; do. Jersey kidneys, 20*s.* per cwt.

"ARCHIMEDEAN"
AMERICAN LAWN MOWERS.

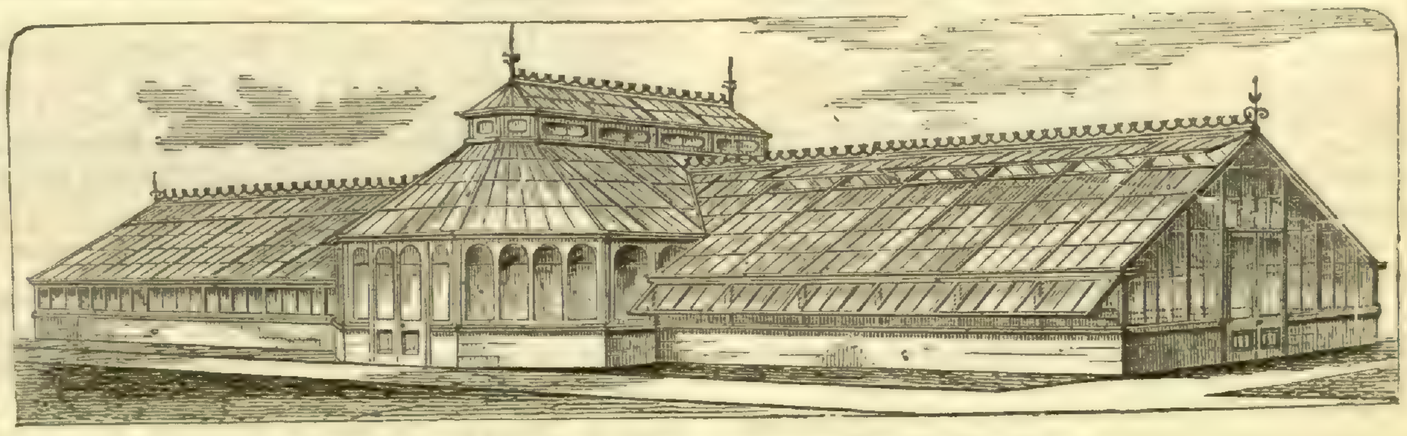
AWARDED
HIGHEST PRIZE
AT THE
Paris Exhibition, 1878;
and the JURY, in their REPORT say:—
"The 'ARCHIMEDEAN' did the BEST WORK of any Lawn Mower exhibited."
ALSO AT
Sydney Exhibition, 1879-80
AND AT
Melbourne Exhibition, '80-1

Opinions of the Press:
"Far superior to any of ours."—Vide *The Field.*
"Remarkably easy to work."—Vide *Gardeners' Magazine.*
"The quickest, most simple, and most efficient mower ever used."—Vide *Garden rs' Chronicle.*
"We feel bound to recommend it to our readers as one of the best mowers we have as yet made acquaintance with."—Vide *Floral World.*

PRICES FROM
25s.
Delivered Carriage Free to all Railway Stations in Great Britain.

WILLIAMS & CO. (Limited), Manufacturers and Patentees.
SELLING AGENTS: J. G. ROLLINS & CO. (LIMITED), AMERICAN MERCHANTS,
OLD SWAN WHARF, LONDON. E.C.

Five 1st Prize Medals recently awarded in open competition.



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R. HALLIDAY & CO.,
HOTHOUSE BUILDERS and HOT-WATER ENGINEERS,
ROYAL HORTICULTURAL WORKS, MIDDLETON, MANCHESTER.

Vineries, Stoves, Greenhouses, Peach Houses, Forcing Houses, &c., constructed on our improved plan, are the perfection of growing houses, and for practical utility, economy, and durability cannot be equalled. We only do one class of work, and that THE VERY BEST.

Conservatories and Winter Gardens designed architecturally correct without the assistance of any one out of our firm, from the smallest to the largest. **Hot-water Heating Apparatus**, with really reliable Boilers, erected, and success guaranteed in all cases. **Melon Frames, Sashes, Hotbed Boxes, &c.,** always in stock.

Plans, Estimates and Catalogues free. Customers waited on in any part of the Kingdom.

Our Maxim is and always has been—
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_____ 1887.

Please send me "THE GARDENERS' CHRONICLE" *for* _____ *Months, commencing* _____, *for which I enclose P.O.O.* _____.

☞ **Please Note that all Copies sent Direct from this Office must be paid for in advance.**

THE UNITED KINGDOM:—12 Months, 15*s.*; 6 Months, 7*s.* 6*d.*; 3 Months, 3*s.* 9*d.*; Post-free.
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Cheques should be crossed "DRUMMOND."

G. C.,
June 4, 1887.

Shanks's Patent

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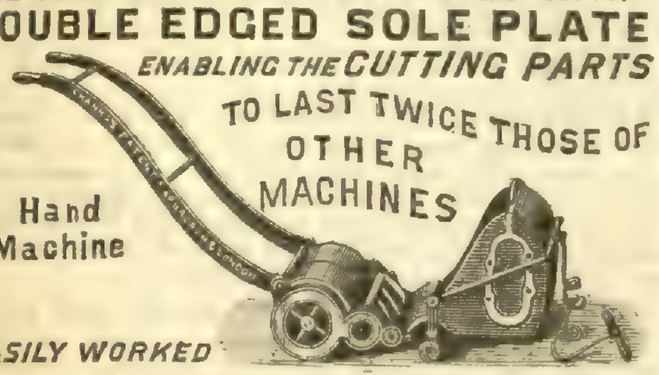
THE ONLY LAWN MOWER FITTED WITH

DOUBLE EDGED SOLE PLATE

ENABLING THE CUTTING PARTS TO LAST TWICE THOSE OF OTHER MACHINES



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EASILY WORKED

MAKING THE LAWN LIKE VELVET

DOES NOT GET OUT OF ORDER

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TO CUT 10 INCHES WIDE	£3. 10. 0	TO CUT 18 INCHES WIDE	£8. 0. 0
TO CUT 12 INCHES WIDE	4. 10. 0	TO CUT 22 INCHES WIDE	8. 10. 0
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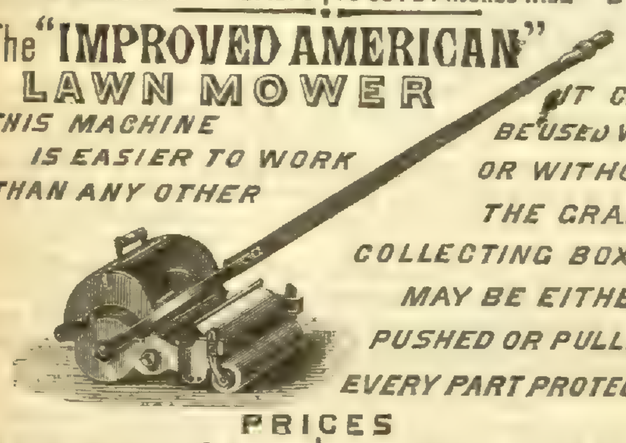
The "IMPROVED AMERICAN" LAWN MOWER

THIS MACHINE IS EASIER TO WORK THAN ANY OTHER



IT CAN BE USED WITH OR WITHOUT THE GRASS COLLECTING BOX MAY BE EITHER PUSHED OR PULLED EVERY PART PROTECTED

PRICES

10 INCH MACHINE	£3. 0. 0	14 INCH MACHINE	£4. 15. 0
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GRASS BOXES EXTRA

HORSE AND PONY MACHINES

ILLUSTRATED LISTS OF THESE UNRIVALLED MACHINES POST FREE

GARDEN ROLLERS

OF ALL SIZES

ALEX. SHANKS & SON

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A LARGE STOCK OF MACHINES OF ALL SIZES ALWAYS KEPT AT 27 LEADENHALL STREET WHERE REPAIRS CAN ALSO BE EXECUTED

SMALL LAWN MOWERS

6 INCH 25/-, 7 INCH 35/-, 8 INCH 45/-,

HORTICULTURAL GLASS.

A large quantity of all descriptions and sizes in stock, at the lowest possible prices.

NICHOLLS & CLARKE,
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WARNER'S CELEBRATED AQUAJECTS.

Two Prize Medals awarded Calcutta Exhibition, 1883–4.

Very easy to work, strong—the best Implement of its type. Numerous testimonials.

Very simple, durable, will wear for years. Price, 30*s*.

Unsolicited testimonial.

In use twenty years, it may last twenty more.

From W. BROOKES (*late* Stephen Brown), *Seedsman, Nurseryman, and Florist, Weston-super-Mare, to* J. WARNER & SONS, *London, April* 17, 1885:—

"Gentlemen,—I have sent per rail an Aquaject I wish thoroughly repaired except the spreader, I do not want that attached. *I have had it in use constantly for just* 20 *years*, with very little repairs, which speaks well for it; and I think by thoroughly repairing now it may last 20 more.—Yours respectfully, (Signed) W. BROOKES."

JOHN WARNER AND SONS, Hydraulic and Horticultural Engineers, Manufacturers of Garden Engines, Syringes, Fountains, &c., The Crescent Foundry, Cripplegate, London, E.C., and The Foundry Works, Walton-on-the-Naze, Essex.

To be obtained of every Ironmonger and Plumber in the Kingdom.

PEDIGREE SEEDLING TEA ROSE,

"PRINCESS BEATRICE."

NOW OFFERING FOR THE FIRST TIME.

A vigorous grower; free flowering. Flowers of the most perfect form; colour pale yellow, centre deep golden-yellow, edge of petals slightly laced with bright rose colour.

First-class Certificate, Royal Hort. Society, June 23, 1885.

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Price:—	0	7	6	single plants.
	1	10	0	six ,,
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H. BENNETT, Pedigree Rose Nursery,
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CUTBUSH'S MILL-TRACK MUSHROOM SPAWN.—Too well known to require description. Price, 6*s*. per bushel (1*s*. extra per bushel for package), or 6*d*. per cake; free by parcel post, 1*s*.

None genuine unless in sealed packages and printed cultural directions enclosed, with our signature attached.

WM. CUTBUSH AND SON (Limited), Nurserymen and Seed Merchants, Highgate Nurseries, N.

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DAFFODILS in July

Seeds of Rare Perennials now

Little Book of Daffodils

Established in succession, 120 years

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BEDFORDSHIRE and SUSSEX Coarse SILVER SANDS, 6*s*. to 10*s*. per ton; SUSSEX and KENT PEATS, 8*s*. to 9*s*. per cube yard. By Truckloads.
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Gravel!—Gravel!—Gravel!

JOHN KNIGHT, Upper Bourne, Farnham, having a very large quantity of beautiful Red Binding Farnham GRAVEL for Carriage Drives and Garden Paths, will sell the same at a very reasonable price, as the ground must be cleared. Apply as above.

PEAT and SAND.—Light Brown PEAT for Nursery and Greenhouse Work, in four-ton trucks of 10 yards each, at 10*s*. per yard. In bags at 2*s*. 6*d*. per bag. Rhododendron and American Plant Beds, at 15*s*. per ton. Orchid Peat, 5*s*. per bag. Fresh SPHAGNUM, 7*s*. 6*d*. per bag. SILVER SAND, coarse or fine, 13*s*. per ton.
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HORTICULTURAL SOILS, MANURES, SUNDRIES, and BERKSHIRE POTTERY. Catalogue free per post, of every Horticultural Requisite.

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It is the most effective and permanent fertiliser in the market. We have taken over 1000 First Prizes for Plants, Flowers, Fruits, and Vegetables grown with this Manure. In tins, 1*s*.; bags, 7 lb., 2*s*. 6*d*.; 14 lb., 4*s*. 6*d*.; 28 lb., 7*s*. 6*d*.; 56 lb., 12*s*. 6*d*.; 112 lb., 20*s*., all carriage paid. We also supply finest quality Fish Guano, pure Dissolved Bones, and Crushed Bones, in 1 cwt. bags, 10*s*., carriage paid. Dr. Voelcker's Analysis guaranteed. Cash with order.

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MECHI'S SOOT AND SEWAGE MANURE.

A dry powder, carefully manufactured by Mechi's process,

WHICH IS DISTINCT FROM ALL OTHERS.

The very best Manure for Roots, Grass, Potatos, Wheat, Barley, Oats, Turnips, Mangels, Fruit, Vegetables, Hops, &c.

DESTROYS WIREWORMS, SLUGS, INSECTS, and GRUBS.

35s. per Ton loose; 40s. per Ton in bags; 4s. per Cwt. in bag.

Delivered Free on Rail or Boat.

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Post-office Orders payable at Mark Lane.

69 and 70, MARK LANE, LONDON, E.C.

NATIVE GUANO.—Price £3 10*s*. per ton in bags; lots under 10 cwt., 4*s*. per cwt. Sample bag (1 cwt.) sent, carriage paid, to any station in England on receipt of P.O. for 5*s*.

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COCOA-NUT FIBRE REFUSE.

4*d*. per bushel; 100 for 25*s*.; truck (loose, about 2 tons), 40*s*.; 4-bushel bags, 4*d*. each.

LIGHT BROWN FIBROUS PEAT, 5*s*. 6*d*. per sack; 5 sacks, 25*s*.; sacks, 4*d*. each

BLACK FIBROUS PEAT, 5*s*. per sack, 5 sacks, 22*s*.; sacks, 4*d*. each.

COARSE SILVER SAND, 1*s*. 9*d*. per bushel; 15*s*. per half ton; 26*s*. per ton, in 2-bushel bags, 4*d*. each.

YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1*s*. per bushel

SPHAGNUM MOSS, 8*s*. 6*d*. per sack.

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For Potting, Rafts, Blocks, &c. To be obtained only from

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CATALOGUE of all HORTICULTURAL REQUISITES post-free.
POTTERY of all descriptions.

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HARRIS'S SPECIALLY PREPARED

SULPHIDE OF POTASSIUM.

Strongly recommended by Mr. Edmund Tonks, B.C.L., and a number of leading horticulturists, as absolutely destructive to mildew, &c., on plants.

Mr. W. COLEMAN, *Eastnor Castle, Ledbury, writes*:—

"I have given the Sulphide of Potassium a fair trial, and the excellent effect it has produced is more than satisfactory—it is marvellous. The first trial was made on old winter Cucumbers, badly infested with mildew. One syringing nearly cleaned them; a second completely destroyed the pest. The second attack was made on red spider, also on Cucumbers. Two dressings destroyed the spider. The third and most important trial was made on an old Vine attacked by spider and mildew. The result was equally satisfactory. A young Melon plant, infested with black aphis, was well syringed. The plant is now clean and growing freely."

☞ The above successful results were obtained by the use of PHILIP HARRIS AND CO.'S Specially Prepared Sulphide of Potassium, a very superior article to the ordinary chemical of that name.

Sold in Bottles, 1*s*. each, or free by post 1*s*. 3*d*. each, containing sufficient to make 32 gallons of solution.

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A Concentrated Chemical Food for Plants. The true food of plants is to return in the form of fertilisers to the soil the elements taken from it by the growth of the plants themselves. PASTUPLANTA contains these elements in a peculiar degree combined in a convenient and concentrated form.

20*s*. per cwt., or in Tins, containing about 2 lb., 1*s*. each, or free by post 1*s*. 6*d*. each.

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(*As supplied to the Royal Gardens, and many of the Nobility and Gentry of the United Kingdom.*)

BROWN FIBROUS KENT PEAT, 5*s*. per sack; 5 for 22*s*. 6*d*. BEST BLACK FIBROUS PEAT, 4*s*. 6*d*. per sack; 5 for 20*s*. COARSE SILVER SAND, of best quality. 1*s*. 6*d*. per bushel; 14*s*. per half ton; 25*s*. per ton. PEAT MOULD, YELLOW FIBROUS LOAM, each 1*s*. per bushel; 3*s*. per sack. PURE LEAF MOULD, 1*s*. per bushel; 4*s*. per sack. Best fresh COCOA-NUT FIBRE REFUSE, 1*s*. 3*d*. per sack; 10 for 10*s*.; 15 for 14*s*.; 20 for 18*s*.; 30 for 25*s*.; 2-ton truck, free on rail, 25*s*. SPHAGNUM MOSS, 2*s*. per bushel, 6*s*. per sack. HORTICULTURAL CHARCOAL, 2*s*. 6*d*. per bushel; 8*s*. per sack. BEST RAFFIA, 1*s*. per lb.; 7 lb. 6*s*. 6*d*. CRUSHED BONES, GUANO and other MANURES. STICKS, LABELS, Virgin CORK, Bamboo CANES, and POTTING COMPOSTS, ready for use, 5*s*. per sack. RUSSIA MATS, from 12*s*. to 21*s*. per dozen. SPECIALITE TOBACCO CLOTH and PAPER, 8*d*. per lb.; 28 lb. for 18*s*.; 56 lb. for 35*s*.; 1 cwt. for 67*s*. The best in the market. Price List post-free. Terms—cash with order.—W. HERBERT AND CO., Hop Exchange Warehouses, Southwark Street, London, S.E.

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W. WOOD AND SON are now cutting from THE NEW ESTATE (the only estate celebrated for its special quality of ORCHID PEAT).
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To Gardeners.

PROCTOR AND RYLAND'S
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Special Garden Manures.
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10*s.* per bag of 1 cwt. on receipt of Postal Order.
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TWO PRIZE MEDALS.

Quality, THE BEST in the Market. (All sacks included.)

PEAT, best brown fibrous ...	5*s.* per sack;	5 sacks for 22*s.* 6*d.*
PEAT, best black fibrous ...	4*s.* 6*d.* ,,	5 sacks for 20*s.*
PEAT, extra selected Orchid	5*s.* 6*d.* ,,	5 sacks for 25*s.*
LOAM, best yellow fibrous ...	1*s.* per bush., 3*s.* per sack. (sacks included).	
PREPARED COMPOST, best		
LEAF MOULD, best only		
PEAT MOULD, ,,		

SILVER SAND, coarse, 1*s.* 6*d.* per bush., 14*s.* half ton, 24*s.* ton.
RAFFIA FIBRE, best only ... . 1*s.* per lb.
TOBACCO CLOTH, finest imported ... 8*d.* lb., 28 lb. 18*s.*
TOBACCO PAPER ,, (Spécialité) 8*d.* lb., 28 lb. 18*s.*
MUSHROOM SPAWN, finest Milltrack ... 5*s.* per bushel.

	In bags.				
CHUBB'S "PERFECT" FERTILISER, the Best Food for all kinds of Plants, Flowers, Fruits, Vegetables, &c. ...	Tins. 1/6	7lb. 3/-	14lb. 5/-	28lb. 8/-	56lb. 1cwt. 14/- 22/-
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VIRGIN CORK, best quality only		—	3/-	5/6	10/6 17/-

HORTICULTURAL CHARCOAL, ditto, 2*s.* 6*d.* per bushel.
COCOA-NUT FIBRE REFUSE (by Chubb's special process), sacks, 1*s.* each; 10 sacks, 9*s.*; 15 sacks, 13*s.*; 20 sacks, 17*s.*; 30 sacks, 25*s.*; 40 sacks, 30*s.* Truck-load, loose, free on rail, 25*s.* Limited quantities of G., special quality, granulated, in sacks only, 2*s.* each. Terms, strictly Cash with order.

CHUBB, ROUND & CO.,
WEST FERRY ROAD, MILWALL, LONDON, E.

"CUPROLENE,"

THE ONLY

INFALLIBLE

WEED DESTROYER.

A NEW DISCOVERY.—The Cheapest, Best, and Most Effectual Preparation for Killing Weeds, Dandelions, Moss, &c., wherever they may exist.

NO DISTURBANCE OF GRAVEL.
SAVES LABOUR, TIME, AND MONEY.
SUPERSEDES ALL OTHER PREPARATIONS.

N.B.—If our Cuprolene fail to do its work effectually we will refund the money paid for same.

Prices, Carriage Paid to any Station.

4 galls., sufficient for	100 galls. of water	... £0	6	0
8 ,, ,,	200 ,, ,,	... 0	12	0
16 ,, ,,	400 ,, ,,	... 1	2	0
40 ,, ,,	1000 ,, ,,	.. 2	7	6

5 per Cent. Disct. for Cash; carriage paid on returns of 16 galls.
100 galls. will cover an area of about 50 yards × 50 yards.

SOLE PROPRIETORS AND MANUFACTURERS,
DEIGHTON & SMITH, Agricultural Chemists,
BRIDGNORTH.

JENSEN'S

Every grain fertilizes because the Guano is perfectly pure. It is most economical, one part of Manure to 100 parts of soil being ample for garden use.
Write for Pamphlet, Testimonials and Instructions.

FISH-POTASH

Dr. Voelcker's analysis guaranteed. FISH-POTASH contains Ammonia, Phosphates and Potash in large proportions, which are the principal elements of fertilization.

GUANO.

2-lb. Tins, 1s.; in Bags, 7 lbs., 2s.; 14 lbs., 4s.; 28 lbs., 6s. 6d.; 56 lbs., 10s. 6d.: 1 cwt., 16s.; 2 cwt., 30s., carriage paid. Special terms for larger quantities.

J. JENSEN & CO. LIMITED,
10, St. Helen's Place, London, E.C.

PEAT, LOAM, SAND, &c.—Splendid Brown Fibrous PEAT (full of fibre), 9*s.* per yard; Yellow Fibrous LOAM (best in England), 10*s.* per ton; SILVER SAND (coarse and fine), 10*s.* per ton. Each in truckloads. COCOA-NUT FIBRE REFUSE, 20*s.* per large truckload. Send for List.
BRINKWORTH AND SONS, Reading.

CERTAIN SUDDEN DEATH

To all Grubs, Aphis, Lice, Red Spider, Thrip, Mealy Bug, Caterpillars, &c., &c.

PERFECTLY HARMLESS to the Hands and Skin, but will cure Ringworm in Animals, and all Diseases produced by parasites.

FIR TREE OIL
(SOLUBLE) INSECTICIDE

A combination of Hydrocarbon Oils, made soluble in Water, for Destroying ALL INSECTS & PARASITES that infest Trees and Plants, whether at the Roots or on the Foliage.

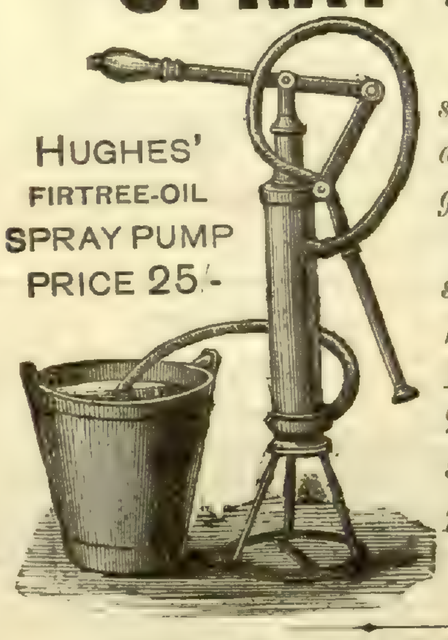
Sold by Seedsmen and Chemists, 1s. 6d, 2s. 6d. & 4s. 6d; ½ gallon 7s. 6d, 1 gallon 12s. 6d, or less in larger quantities.

A Treatise on FIR TREE OIL as an INSECTICIDE, its application to Plants and Animals, sent Post free on receipt of address, by the Manufacturer,

E. GRIFFITHS HUGHES, Manchester.

Wholesale: HOOPER & Co.; CORRY, SOPER, FOWLER & Co.; C. E. OSMAN & Co; and from all the London Seed Merchants and Wholesale Patent Medicine Houses. NEW YORK—ROLKER & SONS.

HUGHES' FIR TREE OIL SPRAY PUMP



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A splendid substitute for the Syringe for using Insecticide, Price 25s. A larger size for watering purposes, 45s.

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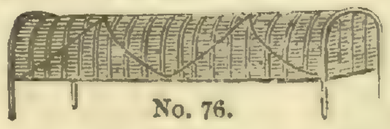

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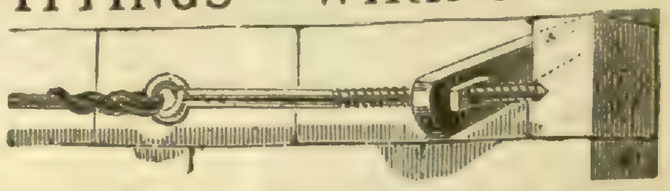

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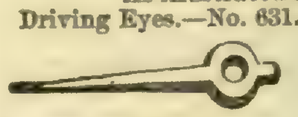

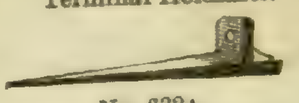

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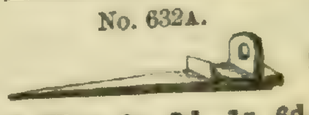

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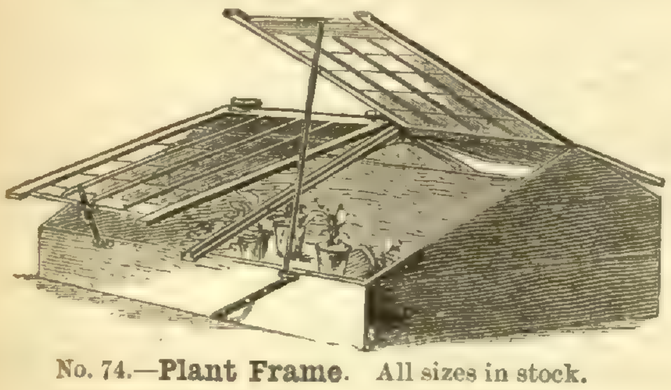

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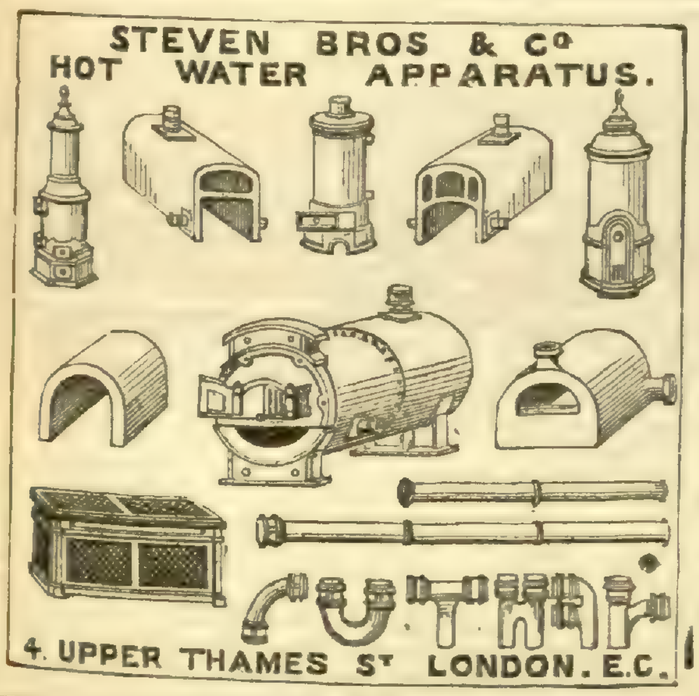

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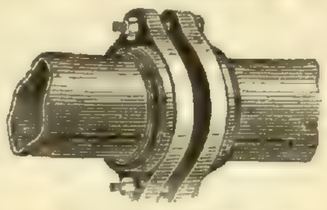

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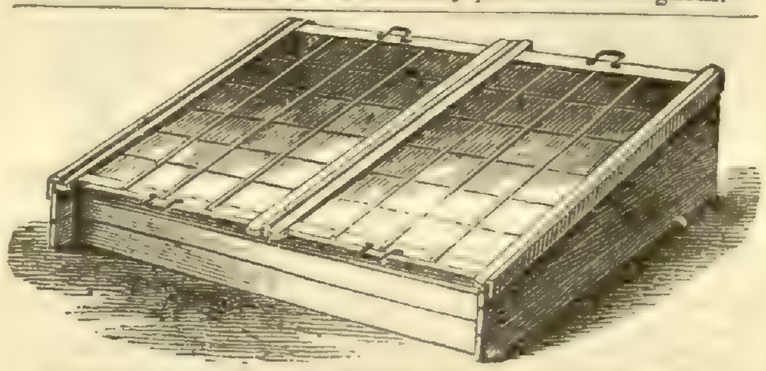

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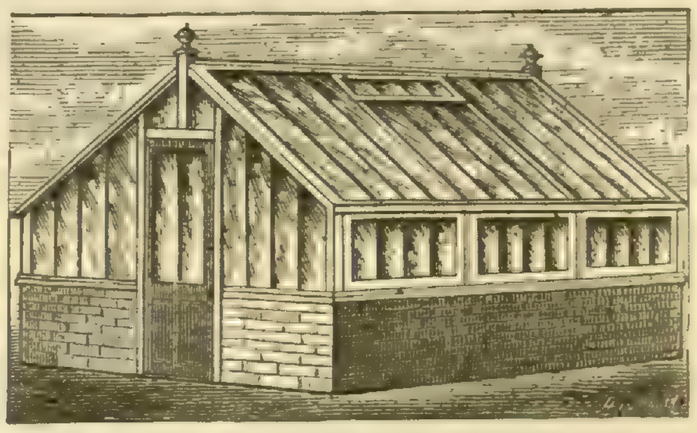

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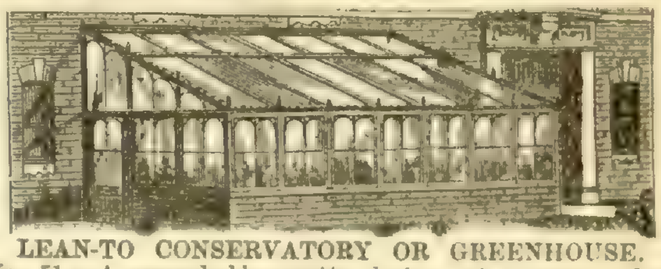

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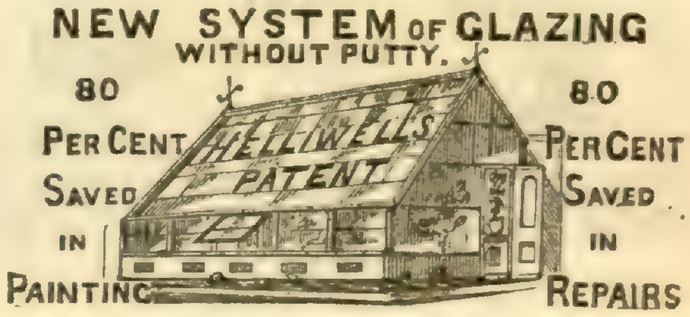

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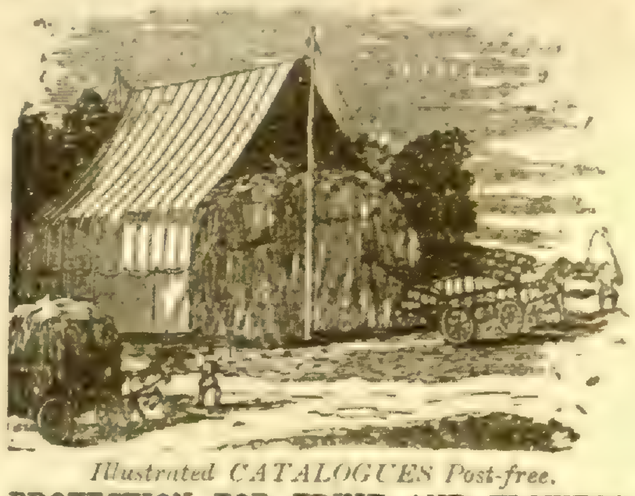

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9	„ ..	0	5	6	20	„ ..	0	11	0
10	„ ..	0	6	0	21	„ ..	0	11	6
11	„ ..	0	6	6	22	„ ..	0	12	0
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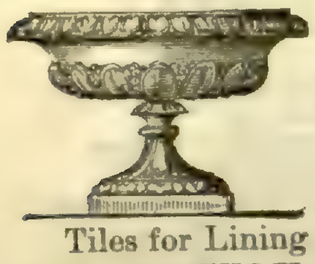

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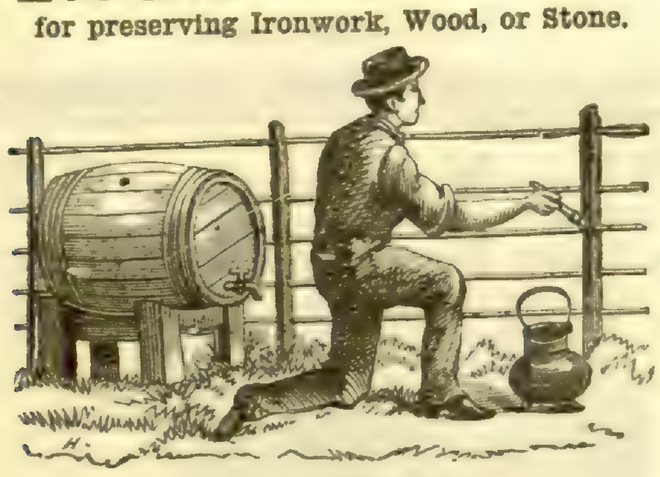

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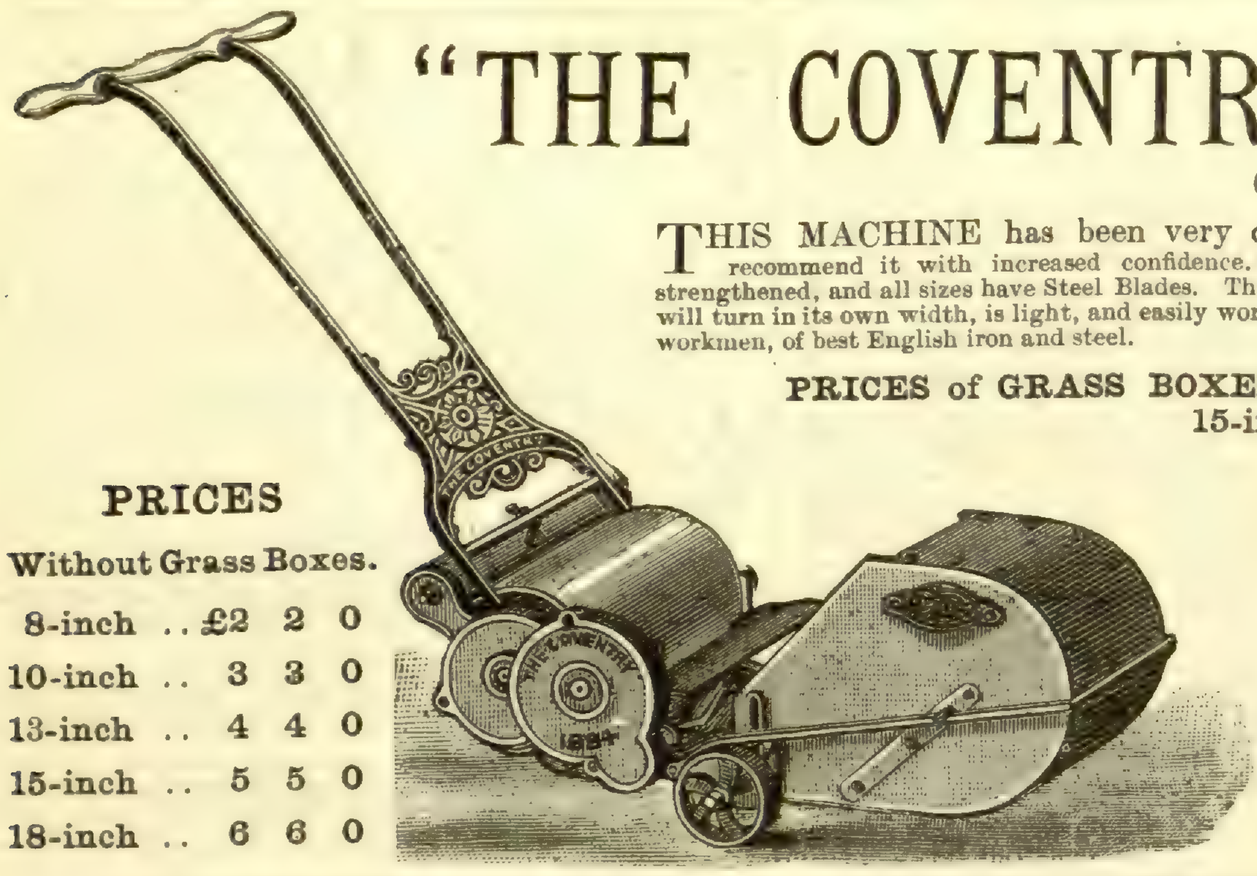

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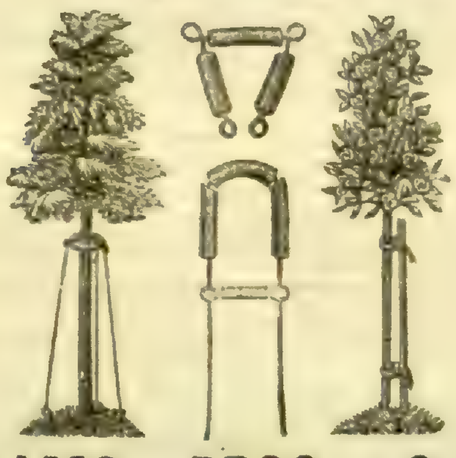

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CONTENTS.

Amaryllises, Kelway's ... 768
Antwerp Exhibition, at 774
Apiary, the 777
Beetle, longicorn, affecting Orchids 776
Books:—
Ball's Notes of a Naturalist in South America 775
Botanical Magazine 767, 774
Broccoli, a useful ... 777
Cambridge Botanic Gardens 766
Cœlogyne Sanderiana ... 764
Conifers in growth ... 772
Covent Garden prices ... 777
Cypripedium politum × ... 764
Flower garden, the ... 771
Forestry 770
Fruits under glass ... 771
Gardening appointments 786
Gardeners' Royal Benevolent Institution ... 773
Hardy fruit garden ... 779
Herbaceous border ... 770
Kitchen garden 779
Law Notes:—
Campbell *v.* Caledonian Railway Co. 779
Muckross Abbey 763
Natal to the Transvaal ... 766
Obituary:—
McIntyre, Mr. A. ... 779
Orchid notes and gleanings 769
Phylloxera Laws ... 774
Plants and their culture 771
Polemonium cœruleum var. himalayana ... 766
Polyanthuses 778
Potato culture 775
Primula reticulata ... 777
Primulas, Indian ... 777
Punch's Victorian Era ... 773
Ramie, cultivation of, in Spain 767
Sander's nursery... ... 776
Seed trade, the 768
Societies:—
Reading Horticultural 778
Royal National Tulip... 778
Trees and Shrubs ... 770
Vanda Amesiana ... 764
Veronicas, New Zealand 778
Vines, inarched 778
Uropedium Lindeni ... 769
Weather, the 779
Yucca brevifolia 772
Zygocolax Veitchii ... 765

ILLUSTRATIONS.

Beetle, a longicorn, destructive to Orchids 776
Cypripedium politum × 765
Hive, the Sandringham 777
Pinus Lambertiana 769
Woiblet spur and wired frame bee-hive 777
Yucca brevifolia 773

NOTICE TO SUBSCRIBERS.—All Numbers of the "Gardeners' Chronicle" from January 1 of this year are still to be had.

ROYAL HORTICULTURAL SOCIETY,
South Kensington, S.W.
NOTICE!—COMMITTEE MEETINGS: Scientific, at 1 P.M., in the Lindley Library; Fruit and Floral, at 11 A.M., in the Conservatory, on TUESDAY NEXT, June 14. Admission free to Fellows at 12 o'Clock; and to the Public at 1 o'Clock, upon payment of 1s.
N.B.—Entrances, N.E. Orchard House, Exhibition Road; and Exhibitors' Entrance, east side of Royal Albert Hall.

ROYAL BOTANIC SOCIETY.
Gardens, Regent's Park, N.W.
SECOND SUMMER EXHIBITION of PLANTS, FLOWERS, and FRUIT, WEDNESDAY, June 15.
Schedules of Prizes, &c., to be obtained at the Gardens.

CRYSTAL PALACE.
GREAT ROSE SHOW of SEASON.
SATURDAY, July 9. Postponed from July 2.
For Schedules and Entry Forms apply to
Mr. W. G. HEAD, Garden Superintendent, Crystal Palace, S.E.

ALEXANDRA PALACE,
London, N.
GREAT ROSE SHOW, JULY 14, 15, and 16. Entries Close July 7, 1887. For Schedules and full particulars, apply to J. S. COOKE, Secretary of the Show, Alexandra Palace, N.

RICHMOND HORTICULTURAL SOCIETY.
The SUMMER EXHIBITION will be held in the Old Deer Park on WEDNESDAY, June 29. The Schedule contains 104 classes, of which 68 are open to all. In addition to Money Prizes, amounting to about £250, eight Silver Jubilee Medals, value £2 each, will be given.
The SURREY BEEKEEPERS' ASSOCIATION will hold a SHOW of BEE APPLIANCES and HONEY on this occasion and Free Lectures will be given at intervals. Entries close on Wednesday, June 22.
The AUTUMN SHOW will be held on November 2 and 3.
For Schedules, apply to
22, George Street, Richmond. J. H. FORD, Esq., Hon. Sec.

BRIGHTON and SUSSEX FLORICULTURAL and HORTICULTURAL ASSOCIATION.
GRAND SUMMER EXHIBITION, JULY 6 and 7, at the Royal Pavilion. 1st prize for 10 Stove and Greenhouse Plants, £10. 1st prize for 8 Orchids, £5. 1st prize for 12 Foliaged Plants, £5. 1st prize for 48 Roses, £5. 1st prize for Collection of Fruit, £5. Schedules of prizes ready.
EDWARD CARPENTER, Secretary.
Secretary's Office: 96, St. James' Street, Brighton, March 28, 1887.

NATIONAL ROSE SOCIETY OF ENGLAND.
GRAND EXHIBITION
will be held in the
WAVERLEY MARKET, EDINBURGH,
ON
WEDNESDAY, July 13, 1887;
In connection with the SUMMER SHOW of the
ROYAL CALEDONIAN HORTICULTURAL SOCIETY.
For Schedules, &c., apply to SECRETARY, Royal Caledonian Horticultural Society, 18, Waverley Market, Edinburgh.

PRIMULAS—PRIMULAS—PRIMULAS.—Eighteenth year of distribution. Williams' Superb Strain, 1s. 6d. per dozen; 10s. per 100. CINERARIAS, same price. Package and carriage free. Double White PRIMULAS, 6d. each. Volunte Nationale alba, the best winter white PELARGONIUM, strong rooted plants 1s. each.
JOHN STEVENS, The Nurseries, Coventry.

CREEPERS FOR WALLS, in Pots, can be moved at any time.—By planting what is suitable, an ugly object may easily and rapidly be made beautiful. Descriptive LIST and advice free.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

ARUM LILIES.—Surplus Stock of Flowering Bulbs for Sale, 15s. to 30s. per 100.
PALFREY AND HORNE, Packmores, Warwick.

To the Trade.
Sowing RAPE SEED and White MUSTARD SEED.
H. AND F. SHARPE have fine samples of the above-named Seeds suitable for sowing purposes, and will be pleased to submit them, with prices, on application.
Seed Growing Establishment, Wisbech.

ASPARAGUS.—This delicious vegetable does not require half the expense often incurred. Strong roots, 2s. 6d. per 100; extra strong ditto, two years old, 3s. 6d. per 100; three years, 5s. per 100.
RICHARD SMITH AND CO., Worcester.

PEACHES! NECTARINES! GRAPES! &c.—Highest market prices guaranteed for really good and well packed fruit of above.—WISE AND RIDES, Covent Garden.

SQUELCH AND BARNHAM, North Row, Covent Garden, W.C., are OPEN TO DISPOSE OF any quantity of MUSCATS and BLACK GRAPES, TOMATOS, CUCUMBERS, FRENCH BEANS, STRAWBERRIES, CHOICE FLOWERS, &c. Highest Market Prices obtained. Account Sales daily; Cheques weekly or as preferred by Sender. Baskets and Labels supplied. References given.

MESSRS. GREGORY AND EVANS, NURSERYMEN, Sidcup, and 285, 286, 287, 288, Flower Market, Covent Garden, W.C., are open to RECEIVE CONSIGNMENTS of Choice CUT FLOWERS in any quantity for their Commission Department. Boxes and Labels supplied.
Telegraph Address—"COMMISSION, SIDCUP."

WANTED, Large PALMS, TREE FERNS, and other large ORNAMENTAL FOLIAGED PLANTS, in EXCHANGE for ORCHIDS or OTHER PLANTS. Send full particulars to
The LIVERPOOL HORTICULTURAL COMPANY (John Cowan), Limited, The Vineyard and Nurseries, Garston, Liverpool.

"THE GARDEN."—Wanted, the Volumes for 1877, 1878, and 1879.
Address, Mr. LYNCH, The Botanic Gardens, Cambridge.

PRIMULAS and CINERARIAS.—Cannell's varieties are well known to be by far the best in the world. Strong seedling plants now ready for posting off to all parts of Europe.
PRIMULAS, 1s. 6d. per doz., 11s. per 100; in pots, 16s. per 100.
CINERARIAS, 1s. per dozen, 7s. per 100; in pots, 12s. per 100.
H. CANNELL AND SONS, The Home of Flowers, Swanley, Kent.

JOHN MOOY'S CATALOGUE of DUTCH FLOWER ROOTS is now ready, and has been posted to the Trade; should any of his Customers not have received it, he will be pleased to forward another Copy on application.
JOHN MOOY, 8, Houtplein, Haarlem, Holland.

Miss Joliffe Carnation.
H. B. MAY has a splendid stock of Flowering Plants of this popular variety, from 9s. per dozen.
Dyson's Lane Nursery, Upper Edmonton.—Telegraphic address: "PTERIS, London."

Special Trade Offer of
RHODANTHE, White and Coloured, good stuff. Packed and put on rail free, price 50s. per 100, cash with order.
H. TITE, The Nurseries, Hampton-on-Thames, Middlesex.

FINEST LILY OF THE VALLEY CROWNS for Early Forcing, by Gustav A. Schultz, Berlin. For price write to
JACOB AND VALENTIN, 56, Cheapside, London, E.C.

NARCISSUS "EMPEROR."—The largest and best of all the Daffodils. Orders now Booked for Autumn Delivery. Price on application.
F. & A. DICKSON & SONS, The Queen's Seedsmen, Chester.

VERBENAS—VERBENAS.—100,000, all strong, healthy, and well-rooted, in 4, 8, or 12 varieties, 6s. per 100, 50s. per 1000. Package free. Terms cash with all orders.
FLETCHER, SON AND CO., Florists, &c., Chesterfield.

KELWAY AND SON.
KELWAY'S "MODEL" CALCEOLARIA.
KELWAY'S "MODEL" CINERARIA.
Price of Seed on application.
Langport, Somerset.

A Few Large Healthy
PALMS, 3 to 5 feet high, for immediate disposal—Latania borbonica, Seaforthia elegans, Chamærops excelsa, and Phœnix reclinata—from 10s. per pair.
GARDENER, Holly Lodge, Stamford Hill, London, N.

SPHAGNUM MOSS for SALE at Grange Plantation. Apply,
JOHN MILLER, Overseer, Grange, Coldingham, Berwickshire, N.B.

CHEAP PICEA NORDMANNIANA, 1½ to 2 feet, 10s. per dozen; 2 to 2½ feet, 15s. per dozen; 2½ to 3 feet, 24s. per dozen; 3 to 3½ feet, 30s. per dozen. All EVERGREENS and FRUIT TREES cheap; CURRANTS and GOOSEBERRIES from 7s. 6d. per 100. 25 per cent. discount allowed for cash to clear. For LIST apply
T. L. MAYOS, Highfield Nurseries, Hereford.

F. & A. DICKSON & SONS hold large stocks of the following, and are Booking Orders at moderate prices:—BEDDING PLANTS, in great variety. CHRYSANTHEMUMS, DAHLIAS, Tuberous BEGONIAS, a fine collection; HERBACEOUS and ALPINE PLANTS, in pots; H.P. and TEA ROSES, in pots. Special LISTS on application. The Queen's Seedsmen, Chester.

FIELD AND HEARSON'S NICOTYL VAPORISER. For the Destruction of Aphis, &c., WITHOUT SMOKE. CATALOGUE post-free.
BENJAMIN FIELD, F.R.B.S., 75A, Queen Victoria Street, E.C.; Depôt, Swan Place, Old Kent Road, S.E.

Important Notice.
To Florists, Seedsmen, Horticultural Builders, &c.
PLANTS, FLOWERS, FRUITS and VEGETABLES a Specialty.
WM. J. WELCH begs to call particular attention to his productions for
ILLUSTRATING BOOKS, MAGAZINES, CATALOGUES, and for ADVERTISING PURPOSES.
For Specimens see *Gardeners' Chronicle*, 1883 to 1886.
ADDRESS:—25, Wellington Street, Strand, London, W.C.

SALES BY AUCTION.

Wednesday Next.—(Sale No. 7431.)

A fine lot of TERRA-COTTA VASES, JARS, FLOWER-POTS, BASKETS, &c., suitable for Conservatories, Greenhouses, &c.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, June 15.

On view morning of Sale, and Catalogues had.

Wednesday Next.—(Sale No. 7431.)

SPECIAL SALE of ORCHIDS in FLOWER.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, on WEDNESDAY NEXT, June 15, at half-past 12 o'Clock precisely, a splendid collection of ORCHIDS in FLOWER and BUD, comprising some grand forms of Odontoglossum Alexandræ, O. vexillarium, O. Pescatorei, hybrid Odontoglots, some fine varieties of Masdevallia Harryana, M. rosea, Oncidium macranthum, Cattleya Mendelii, C. Mossiæ, C. labiata, C. Sanderiana, Anguloa uniflora superba, A. Clowesii, Cypripedium Dominii, C. niveum, Cœlogyne pandurata, Phalænopsis speciosa, P. Wightii, Dendrobes, &c.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7432.)

CATTLEYA BOWRINGIANA.

MR. J. C. STEVENS has received instructions to include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, June 16, a magnificent importation of the new and beautiful autumn-flowering CATTLEYA BOWRINGIANA. The flowers are borne several on a spike, the sepals and petals being rich rosy-purple, and the labellum rich purplish-crimson, with a yellowish-white blotch below. The plants are in the best condition.

On view the morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7432.)

RECEIVED DIRECT.

Twenty-three cases of ODONTOGLOSSUMS, CATTLEYAS, PESCATOREAS, HOULLETTIAS, &c., from United States of Colombia; a quantity of CATTLEYA ACLANDIÆ, in splendid order, from Brazil, &c.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, June 16.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7432,)

VALUABLE IMPORTED and ESTABLISHED ORCHIDS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, June 16, at half-past 12 o'Clock precisely, a fine lot of CATTLEYA MENDELII, C. MOSSIÆ, LYCASTE SKINNERII, ODONTOGLOSSUM GRANDE, O. CRISPUM, &c., all in the best possible condition, from Messrs. Shuttleworth, Carder & Co. Also a small Collection of ESTABLISHED ORCHIDS, the property of a Gentleman, and to be sold without reserve, including Odontoglossums, Masdevallias, Lælias, Oncidiums, Cattleyas, &c. (mostly unflowered plants).

On view morning of Sale, and Catalogues had.

Shepherd's Bush.

DISSOLUTION of PARTNERSHIP. SALE of LEASEHOLD NURSERY, PLANTS, &c.

To Nurserymen, Florists, Gardeners, &c.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, The Willow Vale Nursery, Uxbridge Road, Shepherd's Bush, close to Uxbridge Road Station, on MONDAY, June 13, at 12 o'Clock precisely (unless an acceptable offer be made previously), the commanding long LEASEHOLD Property, known as The WILLOW VALE NURSERY, comprising a six-roomed Dwelling-house, double span Show-house, Fernery, Palm-house, Stabling, &c. Held for an unexpired term of fifty years at the low rental of £60.

Following the Sale of the Property, will be offered, in suitable Lots, the remaining stock of STOVE and GREENHOUSE PLANTS.

May be viewed. Catalogues can be obtained on the Premises; of Messrs. DOD, LONGSTAFFE, SON, AND FENWICK, 16, Berners Street, W.; and of the Auctioneers, 67 and 68, Cheapside, E.C., and Leytonstone.

Tuesday Next.

IMPORTED and ESTABLISHED ORCHIDS.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, June 14, at half-past 12 o'Clock precisely, 100 lots of ODONTOGLGOSSUM ALEXANDRÆ, fine imported pieces, in splendid condition, by order of Messrs. Shuttleworth, Carder & Co.

IMPORTED ORCHIDS, received direct, for unreserved Sale, including several plants of Vanda tricolor, 200 Odontoglossum grande, 200 O. Uro-Skinneri, 60 Cattleya Skinneri, 380 Lycaste Skinneri, 150 Lælia acuminata and rosea, Oncidium splendidum, &c.

Also 500 lots of well-grown ESTABLISHED ORCHIDS from various collections, including a great variety of Cypripediums, Odontoglossums, Cattleyas, Aërides, Saccolabiums, Vandas, Oncidiums, Dendrobiums, Lælias, Phalænopsis, and others; a copy of Warner's "ORCHIDACEOUS PLANTS" in good condition; and green TREE FROGS.

On view morning of Sale, and Catalogues had.

Friday Next.

ORCHIDS IN FLOWER.—SPECIAL SALE.

MESSRS. PROTHEROE AND MORRIS desire to announce that they have arranged to hold an ADDITIONAL SPECIAL SALE of ORCHIDS in Flower at their Central Auction Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, June 17, at half-past 12 o'Clock precisely. Entries should be sent in not later than Monday next to appear in the Catalogue.

On view morning of Sale, and Catalogues had.

Brixton, S.W.—Wednesday Next.

Important to Nurserymen, Market Growers, and Others.

VALUABLE LEASEHOLD NURSERY, STOCK and UTENSILS.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the premises, The Nursery, No. 114, Loughborough Road, Brixton (close to Loughborough Junction Station), on WEDNESDAY NEXT, June 15, at 12 o'Clock precisely, the valuable LEASEHOLD NURSERY, comprising a substantially built Dwelling House, Seventeen Greenhouses, containing about 18,000 feet of glass, 8000 feet of Piping, Pits, Stabling, &c.; the whole standing on about an acre of ground, and held at the very low ground rent of £26 8s. Also in lots, the Stock in Trade, consisting of 3000 PALMS of sorts, 4000 FERNS, HORSE, two VANS, and Utensils in Trade.

May now be viewed. Catalogues may be had on the Premises; of Messrs. PATERSON AND SONS, Solicitors, 26, Bouverie Street, E.C.; of C. A. AINGER, Esq., Solicitor, 59 and 60, Chancery Lane, W.C.; of Messrs. STEER AND KNIGHT, Accountants, 22, Basinghall Street, E.C.; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C., and Leytonstone.

Friday Next.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to include in their SALE of ORCHIDS, on FRIDAY NEXT, June 17,

CATTLEYA VELUTINA.

An importation of this superb Cattleya just received in splendid condition, with dormant and sound eyes. This is one of the rarest and most beautiful species. The blossoms are 5 inches in diameter, and the colour is most distinct and unlike any other Cattleya; sepals and petals are dark orange spotted and blotched red; the lip white bordered with pale yellow, upper part of lip golden yellow.

CYPRIPEDIUM VITTATUM BREVE, Rchb. F.

This is a very scarce Orchid, and most difficult to import, only a few plants being in collections; they have arrived in grand condition, with fine healthy leaves nearly 3 feet long; its large flowers are produced several in number on stout erect spikes, having mauve-brown tints, which neatly contrast with the bright olive parts of its blossoms.

At the same time will be offered healthy plants of the following ORCHIDS in extra fine order:—Miltonia Regnellii, large masses; Cattleya Harrisoniana, Sophronitis coccinea, Oncidium species, Batemannia species; Houlletia Brocklehurstiana, Stanhopea species, Burlingtonia decora picta, and many other choice ORCHIDS, in Flower or Bud.

On view morning of Sale, and Catalogues had.

Tuesday, June 28.

ORCHIDS in FLOWER.—SPECIAL SALE.

MESSRS. PROTHEROE AND MORRIS desire to announce that their next SPECIAL SALE of ORCHIDS in FLOWER and in BUD will take place on TUESDAY, June 28, for which they will be glad to receive notice of Entries as early as possible.

Central Auction Rooms, 67 and 68, Cheapside, E.C.

Important Sale of Timber at Peckham, S.E.

By order of The General Wood Company.

MR. F. J. BISLEY has instructions from the above Company to SELL by AUCTION, on the Premises, viz., Swedish Wharf, High Street, Peckham, S.E., on WEDNESDAY and THURSDAY, June 15 and 16, at 12 for 1 o'Clock each day, a large and useful STOCK of TIMBER, comprising a quantity of Joiners' and Carpenters' Planks, Deals, Battens, Scantlings, &c.; 3000 Scaffold and Ladder Poles, 6000 Birch Putlogs, Spruce Scaffold Boards, Weather Boards, Yellow and White Cut Boards; about 2000 squares of prime Floorboards and Matching, Slating Battens and Pantile Laths, Mouldings, Sawn Fir, Pitch Pine and Oak Boards, Wainscot Oak (dry and well-seasoned); also a large quantity of useful Oak, Pitch Pine and Fir Planks, Flitches, &c.

On view two days prior to Sale. Catalogues may be obtained on the Premises, of The General Wood Company at above address, and of Mr. F. J. BISLEY, Chester House, Union Road, Rotherhithe, S.E.

Important Sale of the Woodlawn Collection of

Valuable PLANTS, comprising several thousands of choice Orchids, Nepenthes, Sarracenias, Eucharis, Lapagerias, Ericas, Azaleas, and a general assortment of grand Stove and Greenhouse productions, which include some of the most rare and finest specimens in the country. Also Eight First-class Plant-houses, with Heating Apparatus complete.

MESSRS. ARTINGSTALL AND HIND beg to announce that they are favoured with instructions from Joseph Broome, Esq., who is leaving Woodlawn, situate at Didsbury, near Manchester, to SELL by AUCTION, at 12 o'Clock noon, on WEDNESDAY, THURSDAY, and FRIDAY, June 22, 23, and 24 (and NOT on TUESDAY, June 21, as formerly notified—that day being fixed by an Order in Council for the Jubilee Celebration), in the grounds of the above-named residence, the whole of the exceptionally fine COLLECTION of PLANTS, and the greater portion of Plant-houses.

Catalogues will be issued fourteen days prior to Sale, when they may be obtained, together with further particulars, on application (personally, or by post) to Mr. ALFRED COLE, Head Gardener; or from the Auctioneers, 45, Princes Street, Manchester.

Dulwich.—By Order of the Mortgagees.

HIGHLY IMPORTANT to MARKET GARDENERS and FLORISTS.

TO BE SOLD, at a Pulling-down price, 21 Modern GREENHOUSES, 27,000 feet of GLASS, 5000 feet of PIPING, with Leasehold DWELLING-HOUSE, and 3 Acres of Ground. Ground-rent only £31.

Apply to Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, London, E.C.

FOR SALE, in consequence of Mr. Imrie's death, the old-established and well-known NURSERY BUSINESS so successfully carried on for upwards of sixty years at Ayr. The Grounds extend to about 40 Acres, adjoining the Railway Station, and are well stocked with saleable Trees and Shrubs. Further particulars on application to IMRIE AND COMPANY, The Nurseries, Ayr, N.B.

In Bankruptcy.

To NURSERYMEN, SEEDSMEN, FLORISTS, and Others.

TO BE SOLD, as a going concern, the STOCK in TRADE of Mr. William Fisher, Nurseryman, Seedsman, and Florist, situate at Horninglow Cross, Burton-on-Trent. Satisfactory arrangements can be made with the Landlord as to tenancy. The Stock, which is young, is in good condition, and a very profitable business can be carried on.

Tenders for the same will be received either by ROBERT HARRISON, Accountant, High Street, Burton-on-Trent, or WILLIAM BENNETT, Accountant, Union Street, Burton-on-Trent, joint Trustees, and from whom further particulars may be obtained.

Tenders to be sent in by June 22, 1887.

TO BE LET, or SOLD, a Small NURSERY, near London (8 miles); good Dwelling-house, nine Hothouses, and Pits.

Apply to EDW. DRAPER, Esq., 3, Vincent Square, Westminster, S.W.

To Florists.

TO BE LET, for the Culture and Exhibition of Flowers and Plants under Glass, an extensive area of LAND adjoining Kennington Park, in front of South Place and Newington Terrace.

Apply to Messrs. MEYNELL AND PEMBERTON, Solicitors, 20, Whitehall Place, S.W.; or, to Messrs. BRIANT AND SONS, Estate Agents, 200, Kennington Park Road, S.E.

Kent, near Railway Station.

TO LET, a SMALL NURSERY, about 10 miles from London.

C. E. B., *Gardeners' Chronicle* Office, 41, Wellington Street, W.C.

AURICULAS on Sale, from the best Show varieties, stock of the late Ed. Pohlmann.

F. POHLMANN, Summergate, Halifax.

KELWAY AND SON intend showing a large collection of PYRETHRUMS at the Royal Horticultural Society, South Kensington, on TUESDAY, June 14, and at the Royal Botanic Society, Regent's Park, on WEDNESDAY NEXT, June 15. Langport, Somerset.

"'SIR WATKIN' is the best and largest Narcissus, also deliciously scented. Special prices also of 'Emperor' Narciss, and all other Flowering Bulbs on application."

JAMES DICKSON AND SONS, "Newton" Nurseries, Chester.

HYPERICUM CHINENSE.—Good plants, set with buds, of this scarce and fine greenhouse St. John's Wort. 2s. 6d. to 5s. A very free-flowering species. See *Gardeners' Chronicle*, May 28. Trade supplied.

GILBERT DAVIDSON, Wernoleu, Ammanford, R.S.O., Carmarthenshire.

PRIMULA, Double White, 5s. per dozen, 35s. per 100. Price for quantities on application. Terms cash with order.

TAYLOR AND CO., Nurserymen, Timperley, Cheshire.

Begonias.

BOX'S JUBILEE VARIETIES, plants established in pots, will flower in July, dwarf habit, circular flowers, erect, equal to named sorts. Singles, 12 distinct colours, crimson, scarlet, red, rose, pink, white, salmon, flesh, orange, yellow, golden, purple, the dozen for 12s. Doubles, 6 colours, 2s. each. On rail London, packing free.

J. R. BOX (for last ten years J. Laing's sole partner), Nurseryman, Croydon.

15,000 TEA ROSES,

Consisting of the following and numerous other varieties,

All fine plants, in 5½ and 6 inch pots:—

Maréchal Niel	Souvenir de Paul Neron
Perle des Jardins	Isabella Sprunt
Safrano	Madam Bravy
Reine Marie Henriette	Waltham Climber No. 2
Comtesse de Nadaillac	Sunset
Souvenir d'un Ami	Niphetos
Catherine Mermet	Gloire de Dijon
Homère	Madame Cusine
Waltham Climber No. 1	The Pet
Lady Mary Fitzwilliam	Duke of Connaught
W. A. Richardson	Adam
Perle de Lyon	Alba rosea
Etoile de Lyon	Goubault
Madame Lambard	Waltham Climber No. 3
Devoniensis	Climbing Devoniensis

12s., 15s., & 18s. per doz., according to size.

The Company believe their Tea Roses to be unsurpassed by any in the country: they are clean, healthy, and vigorous, and, should any purchaser be dissatisfied with them, they may be at once returned.

LISTS, with full particulars, post-free, on application to

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

THE VINEYARD & NURSERIES,

GARSTON, NEAR LIVERPOOL.

The Gardeners' Royal BENEVOLENT INSTITUTION.

DONATIONS AND COLLECTIONS

already Promised or Sent towards the

JUBILEE FUND OF 1887:—

	£	s.	d.
The DUKE of WESTMINSTER, K.G. (President) ...	£50	0	0
Baron FERDINAND DE ROTHSCHILD, M.P. ...	52	10	0
Lord REVELSTOKE	26	5	0
Baron SCHRODER	31	10	0
The BARONESS VON ROEMER, Sandrock, Hastings	10	0	0
JAMES HUGHES, Esq.	21	0	0
JAMES McINTOSH, Esq.	31	10	0
HARRY J. VEITCH, Esq., Treasurer	31	10	0
N. N. SHERWOOD, Esq. (Messrs. Hurst & Son) ...	21	0	0
H. B. MILDMAY, Esq., Shoreham Place	20	0	0
Mrs. W. GIBBS, Bristol	2	10	0
GEORGE ANDERSON, Esq., Sydney	5	5	0
A FRIEND	10	10	0
EDWD. KEMP, Esq., Birkenhead	1	1	0
ROB. JORDAN, Llanaway Gardens	1	1	0
W. SWANSBOROUGH, Glasslough Gardens ...	0	10	0
G. F. WILSON, Esq., Weybridge	5	5	0
Messrs. RAILTON AND CO., Melbourne, New South Wales, per N. N. Sherwood, Esq.	5	0	0
RICHARD CHRIMES, Esq., Rotherham	5	0	0
Messrs. JONES, Brynstedford, Conway	3	0	0
Messrs. WILDER, Sulham, Reading	2	2	0
Mr. A. C. BISHOP, Alresford	0	10	0
Sir C. H. STRICKLAND	1	0	0
Messrs. JAS. DICKSON AND SONS, Chester ...	1	1	0
J. G. GODWIN, Esq., Chester	1	1	0
J. BENTLEY, Esq., Barrow-on-Humber	1	1	0
JOHN COLEBROOK, William Street, S.W. ...	5	5	0
Messrs. THOMSON AND SONS, Clovenford, Galashiels	5	5	0
J. J. SMITH, Esq., Willow Lodge, Christchurch ...	2	2	0
Mrs. COWPER COLES, The Lodge, Bramdean ...	0	10	0
CHARLES CRAWSHAY, Esq., Hingham, Aylsham	1	1	0
F. WIGAN, Esq., Clare Lawn, East Sheen	5	5	0
JOHN SEDEN, Messrs. Veitch & Son, Chelsea ...	0	5	0
THAMES BANK IRON CO., Upper Ground Street	5	5	0
Miss FINDLEY, Brampton Speke, Exeter... ...	1	10	0
E. HORNE, Esq., Reigate	0	10	0
Captain CHRISTY, Core Hill, Sidmouth	1	1	0
Miss ROBSON, Hunton, Maidstone	0	10	0
F. G. SAUNDERS, Esq., Caversham, Reading ...	1	1	0
JOHN C. NICHOLL, Esq., Merthyr Manor, Brigend	5	0	0
N. BLANDFORD, Moor Hill Gardens, Southampton	1	10	0
THOS. LUNT, Ardgowan Gardens, Greenock ...	2	0	0
R. STRAND, Denne Hill Gardens, Canterbury ...	0	5	0
JAS. PRUST, Daglensworth Gardens, Cirencester ...	1	1	0
B. SMITH, Botleys Park, Chertsey	0	10	0
C. COOPER, Seed Merchant, Plymouth	1	1	0
JOHN CHOWN, The Gardens, The Hollies, Weybridge	0	10	0
J. SHEPSTONE, High Elms Gardens, Watford ...	0	10	6
JOHN MURRELL, Leigh Park Gardens, Bristol ...	0	4	0
E. CORDING, Stanlake Gardens, Twyford	0	2	6
JESSE WILLARD, Holly Lodge Gardens, Highgate	0	10	6
WM. BROWN, Merivale Gardens, Atherston ...	1	1	0
JOHN HEAL, Messrs. Veitch & Sons, Chelsea ...	0	5	0
CECIL BOYLE, Esq., Broghill, Wimbledon ...	5	0	0
EDWD. MUCKLOW, Esq., Castle Head, Lancashire	1	0	0
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W. RHYMES, Gardener, East Moulsey	0	2	6
HENRY DOWNING, Norbury Park Gardens ...	1	10	0
E. QUECKENDEN, Seedsman, Harefield	0	5	0
G. H. RICHARDS, Somerley Gardens, Ringwood ...	0	10	0
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ROBERT LAING, St. Margaret's Gardens, East Grinsted...	1	1	0
R. SAWFORD, Danesbury Gardens	0	5	0
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S. CHINERY, Edwardston Gardens, Bexford ...	0	16	6
GEORGE FORD, Wrest Park Gardens, Beds ...	1	0	0
JOHN WILSON, The Gardens, Newton-le-Willows...	1	5	0
JAS. CHILD, Houndswood Gardens, St. Albans ...	1	10	0
GEORGE TAYLOR, Messrs. Veitch & Sons, Chelsea	0	5	0
EDW. HUGHES, Edenhurst Gardens, Sevenoaks ...	0	15	0
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JAS. RUSSELL, Portalock Gardens, Lochgilphead	0	10	0
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R. HAYNES, Kilavrock Gardens, South Norwood ...	0	5	0
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SILAS WARR, Woolston Gardens, North Cudbury...	0	5	0
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THOS. GLEN, Worth Park Gardens, Crawley ...	1	0	0
JOHN LEE, Esq., Kensington	5	5	0
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Mrs. CROWLEY, Normandy House, Alton	2	2	0
R. HANNAY, Esq., Broadwater Down...	2	2	0
Mrs. FREEMAN, Coventry	1	1	0
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Captain PROBYN, Grosvenor Street	1	1	0
GEO. B. HOWES, Esq., Ravenscourt Park	1	11	6
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NATHAN CRAIG, Esq., Birkenhead	2	0	0
Messrs. HOLLINGSWORTH, Turkey Mill, Maidstone	5	0	0
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J. SALTER, Selborne Gardens, Streatham	0	9	0
J. WINTER, Rockville Gardens, Linlithgow ...	4	4	6
W. WILDSMITH, Heckfield Gardens, Winchfield ...	2	2	0
J. C. ELWORTHY, Nettlecombe Gardens, Taunton	1	1	0
JOHN PEARCY, Twyford Gardens, Winchester ...	0	5	0
WILLIAM KIDD, Ide Hill Gardens, Sevenoaks ..	0	10	0
G. HESTER, Brockley Hall Gardens	2	5	0
J. H. AMOS, Bromley, Kent	0	5	0
W. COURT, Messrs. Veitch & Sons, Chelsea... ...	0	10	0
W. R....	0	5	0
GEORGE WOOD, Juniper Hall, Dorking	0	3	0
W. E. WATERS, Staple Hall Gardens, Fenny Stratford	0	5	0
HY. PAYNE, Woolston Hall, Southampton	0	5	0
CHARLES SEDEN, Amwell House Gardens, Ware	10	10	0
ALEX. LINDSAY, Ditton Park, Slough	0	10	0
M. GLEESON, Clumber Gardens, Worksop	1	1	0
HENRY KENT, Tyttenhanger, St. Albans	1	0	0
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RATING OF NURSERIES.

A PUBLIC MEETING of NURSERYMEN will be held, under the auspices of the Nursery and Seed Trade Association, Limited, on TUESDAY, 28th June, 1887, at the HORTICULTURAL CLUB, Henrietta Street, Covent Garden, W.C., (by kind permission of the Committee), to take into consideration the excessive Rating of Nurseries, and to agree on a combined course of action with a view to the Reduction of Assessments. The Chair will be taken by J. Wood Ingram, Esq., of the firm of Messrs. Wood & Ingram, The Nurseries, Huntingdon, at 4 P.M. Nurserymen will oblige by early intimating to the Secretary their intention to be present, and also by forwarding to him in strict confidence (if the amount of the assessment is in excess of the rent), either the Amounts of their Rents and Assessments, or the proportion which the difference between the Rent and the Assessment bears to the rent itself.

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,, 5	7 ,, ...	10	0 ,,
,, 6	8 ,, ...	12	0 ,,
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(112 pages) for 1887

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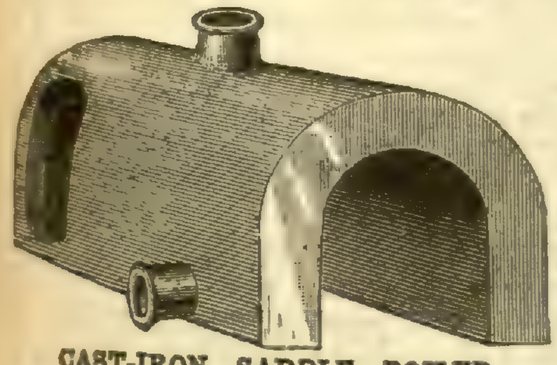

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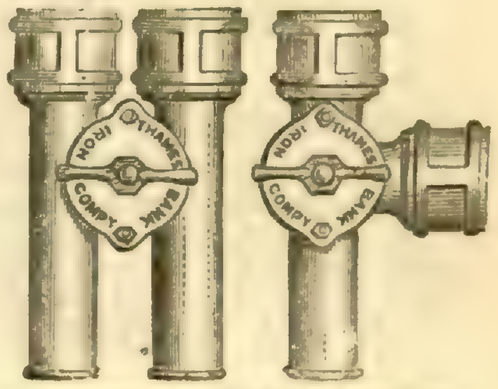

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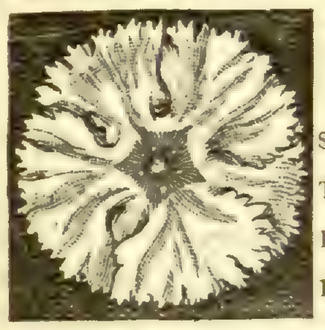

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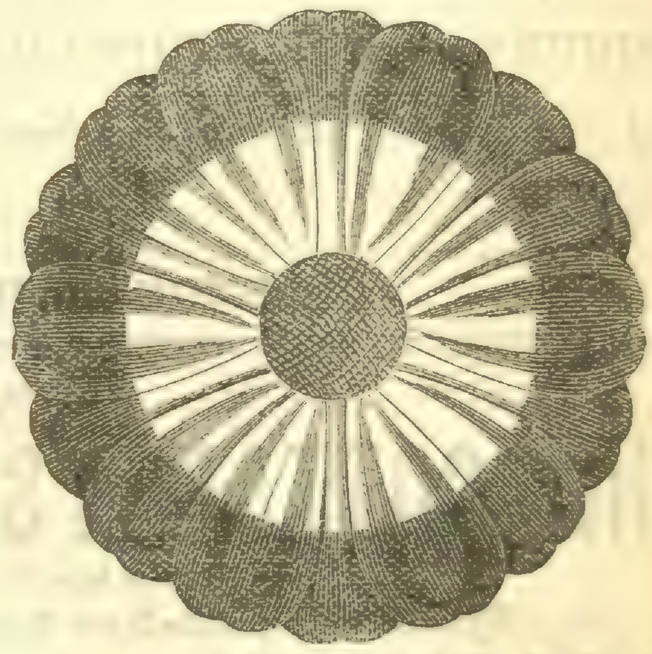

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This Exhibition was admitted to be by all who saw it last two years the largest and most varied of its kind in London.

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THE COTTAGER'S CALENDAR of GARDEN OPERATIONS.

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W. RICHARDS, 41, Wellington Street, Strand, London, W.C.

THE

Gardeners' Chronicle.

SATURDAY, JUNE 11, 1887.

MUCKROSS ABBEY.

THERE are two Abbeys, as there are two Hawarden Castles, one a ruin, holding the dust of some former chieftains of this country, the MacCarthys and O'Donoghues, the other the modern residence of the Herberts, though unfortunately the present respected owner, the son of one of the best of Irish landlords, resides in America and his house remains unoccupied.

The site of Muckross Abbey has been claimed as one of the most charming in the United Kingdom. The approach road passes for the distance of a mile through parks and groves, having the far-famed lakes and mountains of Killarney, with the distant ranges in the neighbourhood of Dingle, on the right. The shrubs and trees are very varied, and the whiteness of the road, which betokens limestone, and the colour of the rocks are very pleasant. Oak, Beech, and Ash are the chief timber trees of the grassland, and they are repeated in a delightful grove which is interspersed between what I may call the outer park next the road leading to Killarney, the lodge being just 2 miles from the town, and the inner park next the house. Spring had come suddenly with a balmy air when I paid my visit, on May 26, all the trees were in leaf, the Hawthorn was in blossom, and the cuckoo calling merrily. She rarely finds such a grove in which to sing and perpetrate her annual imposition of dropping her eggs in the nests of birds more honest than herself. The roadside is edged with such small trailers as Ivy and Periwinkle, and with large beds of that common shrub of this neighbourhood, the Hypericum, and with Butcher's Broom as an occasional plant. Yew is a frequent tree, and Spanish Chestnut an occasional one, and one of the most delightful little glades which the road passes through is formed of Oaks encircled with Yews growing at a higher level with luxuriant twisting branches. The floor below—

on which, no doubt, the fairies' dance—is formed of grass and thickly springing Blue Bells, and into this fair retreat the sun pierced through the foliage, causing cheerful light to fall upon the leaves and mingled shades and warm sunlight on the ground below.

The house is built of sandstone, I believe, but the entrance front has been coloured white, and this bit of artificiality amid the solid mountains leaving something to be desired. So does the slated roof, since slates with pointed gables in the olden style do not seem well assorted. But the house is a good one, large and good looking. One of its two other fronts contains the principal rooms and these look through a vista formed through surrounding shrubs into an inlet of the lake which runs up towards the house. The spot is charming, and the greyish-white colour of the rocks, where they are not hidden by the Arbutus or the abounding Oaks of these shores, increases its attractiveness. All sorts of trees flourish here—Limes and Horse Chestnuts in addition to those already mentioned, with a large variety of new and old Conifers, from Cryptomeria japonica and Pinus nobilis to P. Strobus and Scotch Fir. Rhododendrons thickly edging the lawns and shrubberies are named sorts, some of them very choice, and all in capital condition, making at the end of May a fine display. The Azaleas are brilliant, showing their bright hues like bushes of fire in some cases, and it seems almost unreasonable, after such a floral effort as they are now making, ever to expect them to blossom again.

The late Mr. Herbert loved his home, and lived here among his tenantry when he could, and attended to his garden as every gentleman should. The sorts of shrubs about his dwelling are very numerous. Among a bank of evergreens planted against a long wall adjacent to the offices of the house the following sorts all flourish :—Arbutus of darkish green, Bay of a paler colour, Portugal Laurel, Laurustinus, and that bright-leaved, shining evergreen, plentiful in the Channel Islands, and quite at home here. the Escallonia. The natural surroundings of Muckross Abbey are magnificent, but the beauty of the woods, and the rich verdure of the mountain sides, and of the numerous isles that stud the lakes, soften the ruggedness which the bare peaks of mountains 3000 feet high might otherwise have displayed. Water is a great tamer of rough landscapes, as you may see in the effect of the islet-spotted lake before the windows of this delightful residence when the sun descends over the ranges in the opposite shore on a summer evening, when the peaks are bathed in purple light, and the water, smooth as glass, lies like a mirror at their base.

A mile's walk from Muckross Abbey brought me to a landmark which I had seen from afar, and which I was pleased to visit as the memorial of a good landlord erected by his tenantry. The late Mr. Herbert was much beloved by the warm-hearted people among whom he delighted to reside. For years he acted as an educator in this district, spending his fortune in the improvement of his property and of those who dwelt upon it. He understood the habits of the population, and strove by his personal influence to induce certain desirable changes amongst them. He lodged them in model cottages where the space devoted to their lodgings conduced to health and cleanliness. He endeavoured to relegate the pig to his proper and subordinate quarters, and to remove the dunghill from the front door. He encouraged industry and early rising by his own practice, aud on one occasion, when some of his small-farm tenants were observed coming late to their work in the morning, he gave them a hint which Irish humour did not fail to appreciate, by sending the sluggards some parcels of nightcaps, a present from "his honour." The memorial of this good man consists of a massive and lofty cross erected over his grave in the Protestant burial place by tenants who are chiefly composed of Catholics. The simple and appropriate inscription runs thus:—"In affectionate memory of the Right Honourable Henry Arthur Herbert: born 1815, died 1866. His tenantry have erected this cross to record their sense of his virtues and their grief for his loss."

The well known Torc Waterfall, formed by a small stream plunging down a mountain chasm towards the lake below, is about a mile from the Abbey. Near Muckross, too, and 7 miles from Killarney, after an ascent of 2756 feet above the sea-level on ponies or on foot, one reaches the summit of Mangerton, near the Devil's Irish Punchbowl, for he has another in England at Hindhead, near Haslemere, Surrey. The overflow of this tarn 2000 feet above the lakes forms the "river" just mentioned as forming the Torc Waterfall. The view from Mangerton comprises a grand panorama of the lakes of Killarney, with the sea and the indented south-west coast in the opposite direction.

In the church of the ancient Abbey near this modern residence the chiefs of the neighbourhood were buried. Beneath a massive monument of native stone in the centre of the choir lies the MacCarthy who founded the Abbey in 1340, others of that family, and of the O'Donoghues of Ross Castle lying near him. The graveyard outside the church is still used occasionally, but most of the tombs, which are furnished with enormous slabs of the stone of the district, are covered with evergreen Ferns and Ivy. After examining the ruins I visited the cloisters, for the purpose of measuring the Yew tree which grows in the centre of the courtyard. It was a habit of the Franciscans to plant a Yew tree in this position, so that by the time it reached maturity it topped all the neighbouring walls as this one has done in the cloisters at Muckross, where the trunk has attained the girth of 10 feet, the age of the tree being 447 years.

I must mention the avenue leading to the gate of the ruins, by way of warning against planting ill-matched trees in opposite rows. In the case of this example the Lime was planted opposite the Horse Chestnut, and as the branches of these two trees do not marry well together, the noble effect of an avenue of Limes only when the branches interlace at top as they should do, is completely lost. *H. E.*

CYPRIPEDIUM POLITUM ×.

This is a very distinct showy hybrid, belonging to the acaulescent group. The leaves are somewhat large, oblong-acute, of a light green colour, with dark green tessellations. The dorsal sepal is varnished, whitish, with a red suffusion; nerves green, with a central bar of red stretching from the base upwards; the petals are linear, glossy, covered slightly with fine hairs, and purplish-red, but towards the base green, and marked with purple dots; the lip is suffused in front with purplish-red, and furnished with green nerves. The figure (fig. 143) was taken from a plant in the possession of Mr. F. G. Tautz, Studley House, Shepherd's Bush. It is a free-flowering hybrid, raised by Mr. R. Warner.

Flowers in Paris.—On January 1 there were sold in Paris, between 4 and 5 A.M., 150,000 dozens of cut Roses from Nice; 15,000 trusses (*bottes*) of Roses, 10,000 dozens of Camellias, 15,000 trusses of Lilacs. We take the figures from the *Bulletin d'Arboriculture.*

New or Noteworthy Plants.

Cœlogyne Sanderiana, *n. sp.**

This is a magnificent Sondaic discovery of Mr. Foerstermann, and dedicated at his desire to his energetic and enterprising patron, Mr. F. Sander. It may prove, if easy to grow, a dangerous rival to Cœlogyne cristata itself. I have very fine dried materials and a sketch in colours from Mr. Foerstermann. The flowers are snow-white. The side-laciniæ are marked with three brown stripes. The anterior lacinia has yellow crests, and is itself yellow, excepting a few white marks.

The dried flowers are equal in size to dried flowers of Cœlogyne speciosa. I have two splendid strong rhizomes. The bulbs exceed 2 inches in length, are sometimes only costate, at others wrinkled all over. There are two very large leaf-scars at the top, showing some scars of the vascular bundle, with a mucro as is seen in Maxillarioids. The leaves exceed a foot in length, and are 2½ inches wide, ribbed, chartaceous. The petiole is channelled and dilated at the base, which accounts for the enormous extent of the scar.

The peduncle proceeds from the fresh shoot when the leaves are still quite short, 1 to 1½ inch long. There are two breaks from one bulb in one of my specimens, and the dried sheaths look as if varnished. The bracts fall off before the flowers are open. I have only seen one at the top of an inflorescence, convolute, acuminate, narrow. There is a wide brown sheath at the base of one inflorescence. My inflorescences are five or six-flowered.

I have no doubt this fine Cœlogyne and the graceful Cœlogyne Foerstermanni [a description of which will be given shortly. Ed.] will afford great pleasure to orchidists. Their discovery and introduction are a great success. *H. G. Rchb. f.*

Vanda Amesiana, *n. sp.*†

This is a lovely plant, like a most delicate Phalænopsoid inflorescence (!), with a short stem laden with "dark green leaves, like those of Aërides affine." "The stem is 3¼ inches high." Its canaliculate leaves (apex not seen) are quite novel for a Vanda. The long inflorescence is laden with a dozen charming flowers, as large as those of Vanda Denisoniana, but of a far more thin, delicate substance, creamy-white with a rich rosy hue, most on the lip, which changes, when the flowers begin to fade, into light yellow. The spindle is green, with small sepia-brown dots. Ovary yellowish-green. Pedicels white, with brown spots at the base. Sepals and petals cuneate-oblong, blunt acute. Side laciniæ of the lip nearly square, small. Mid lacinia reniform bilobed, with three callous lines on the disc in front of a small transverse, rounded, callosity. Spur conical, compressed, short, empty, and glabrous inside. Perfume delicious! It is a most interesting topic to note the orchidist's habitual views. A Vanda has, or ought to bear, its normal Vanda leaves, seen so often since the naming of Vanda Roxburghi, or it may be permitted to have terete, or even subulate leaves. A Vanda, however, with leaves of Aërides affine was not seen till 1887, and as we were not accustomed to such a sight, though far less striking

* *Cœlogyne Sanderiana*, n. sp.—(Erectæ) rhizomate repente; pseudobulbis dense aggregatis fusiformi-cylindratis (siccis costatis seu rugosis) diphyllis, foliis petiolatis cuneato-oblongis acutis chartaceis; pedunculis "usque novemfloris;" bracteis anthesi dejectis; floribus magnis speciosis; sepalis ligulatis acutis extus linea mediana vix carinatis; tepalis lanceis acutis superne dilatatis; labello trifido, laciniis lateralibus semiovatis antice triangulis, lacinia mediana cuneato ovata-acuta undulata, carinis laceris multicristatis a basi in basin laciniæ anticæ columnæ androclinii, margine membranaceo trilobo, lobo mediano semiovato crenato, lobis lateralibus angulatis. *H. G. Rchb. f.*

† *Vanda Amesiana*, n. sp. — Foliis loratis complicatis, apice ——; racemo longe porrecto plurifloro (1—12), sepalis tepalisque cuneato oblongis obtuse acutis; labelli auriculis subquadratis parvis, lacinia mediana reniformi emarginata, carina transversa rotundata in basi, lineis brevibus elevatis antepositis ternis, calcari conico compresso vacuo laminam dimidium vix æquante. Ex imperio Indico, introd. exc. S. Low (Messrs. Hugh Low & Co.). *H. G. Rchb. f.*

than that of terete or subulate leaves, it may be much objected to, and may be a *crêvecœur* to many. I always remember in such cases my provincial friend, a very acute orchidist, who got quite cross at the sight of Cattleya citrina, as he had never known the existence of such a thin-leaved, plump bulbed Cattleya. His *confrères*, having known Cattleya citrina from the beginning as an acknowledged Cattleya, never took the trouble of wondering at it. It is a *fait accompli*. Custom, use, fashion rule the world—even the orchidic world.

We have to congratulate our excellent veteran, Mr. Stuart Low, for the introduction of this Indo-British novelty. My oldest English correspondent wishes me to name it in honour of an enthusiastic orchidist, F. A. Ames, Esq., Boston, Mass. *H. G. Rchb. f.*

×Zygocolax Veitchii, *Rolfe* (a bigeneric hybrid between Colax jugosus (male) and Zygopetalum crinitum (female).

Since the time when the result of crossing Cattleya intermedia with the pollen of Sophronitis grandiflora was the production of a Lælia, nothing has been obtained in the way of an artificial hybrid of so remarkable a character as the subject of the present note. Like the former it was raised in the establishment of Messrs. James Veitch & Sons, at Chelsea, and furnishes another proof of the skill of Mr. Seden as a hybridist. It was obtained by crossing Zygopetalum crinitum with the pollen of Colax jugosus, the seed having been sown in September, 1882, and the first flowers were produced in March of the present year. It was exhibited at the meeting of the Royal Horticultural Society on March 22 last as Zygopetalum Veitchii×, and deservedly obtained a First-class Certificate. The name, however, is not at all in agreement with the structure of the pollinary apparatus—a fact not known at that time. When the Messrs. Veitch were good enough to send me a flower for examination, knowing the great differences in the pollinary apparatus of the two plants, I carefully removed the anther-case to see how far it combined the characters of the two. It was an exciting moment, but I at once saw that Zygopetalum was out of the question, and that the pollinarium (the term used to indicate the whole pollinary apparatus—pollinia, caudicle, and gland) was just intermediate between those of the two parents. Being satisfied of its truly hybrid character the question of a suitable name presented itself. To those who do not believe in bigeneric hybrids our plant must be a poser. To sink Colax in Zygopetalum, as some former precedents would suggest, is altogether out of the question, and would land us in untold difficulties. The epiphytic Cyrtopodieæ, in which the upper sepal is free from the base of the column, fall naturally into two groups, one in which the caudicle is slender and elongate, the other in which it is short and broad; Colax falling into the former of these groups, and Zygopetalum into the latter. To ignore these differences because Nature has not made them proof against the arts of the hybridist, would be to discard the very characters on which existing genera are based, and judging by present appearances, hybridists may break down these characters in any unlooked-for direction, and land us in utter confusion; besides which, the principle is bad in itself, for, to reverse the process, we might separate those species which, though hitherto considered as belonging to the same genus, yet will not hybridise together. The only safe plan is to consider these hybrids as artificial productions, and to treat them accordingly. In my opinion, the precedent set by Dr. Masters in the case of Philageria is a safe one to follow. We may therefore call the present plant Zygocolax, a name suggested with the full concurrence of the Messrs. Veitch, and of some of my colleagues.

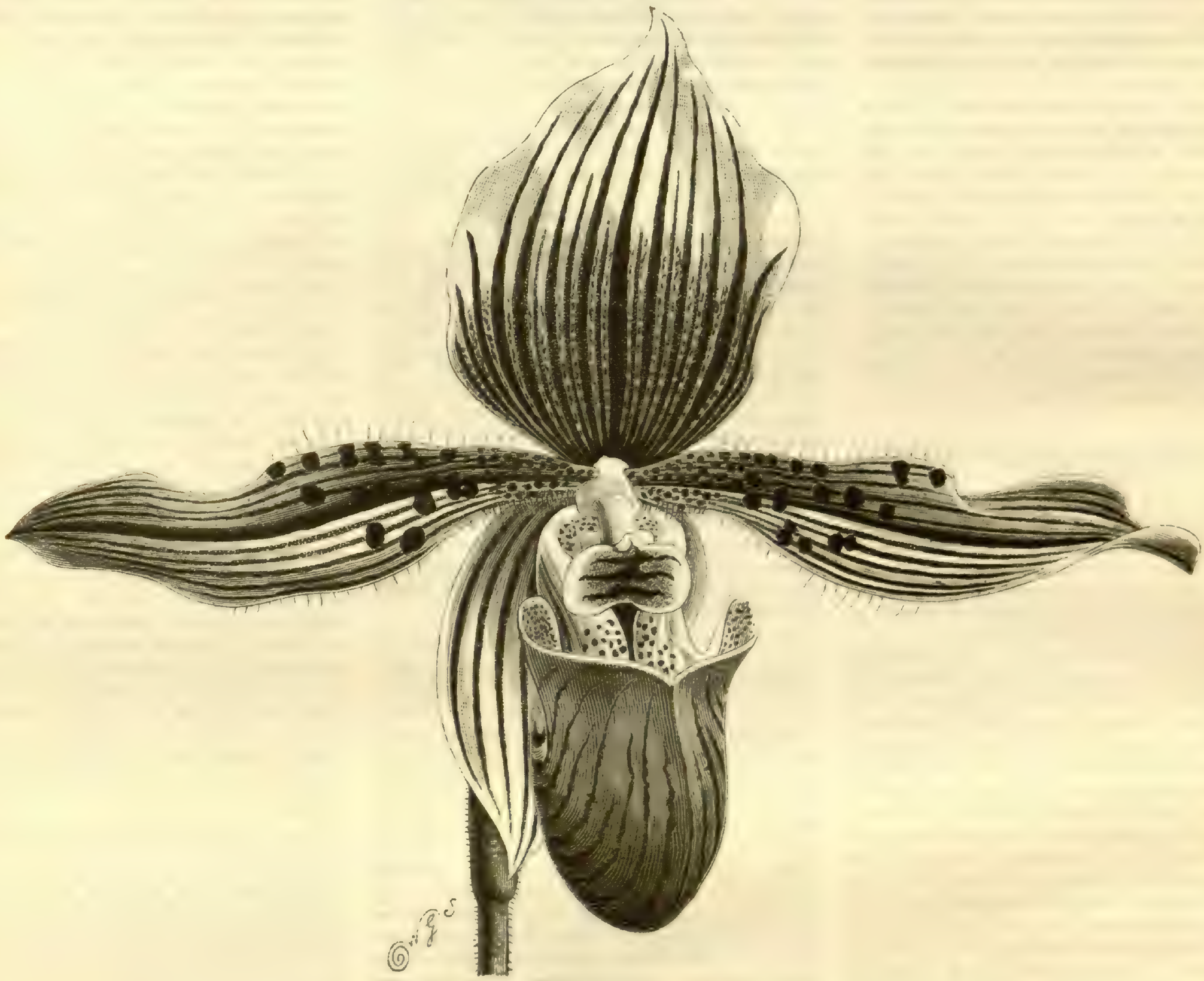

Fig. 143.—Cypripedium politum. (see p. 764.)

Zygocolax Veitchii has ovoid, much compressed pseudobulbs, with two or three linear-lanceolate leaves, 9—12 inches long, the basal leaves being a little broader and shorter than the upper ones. Scape a little shorter than the leaves, with a few sheathing, lanceolate, acute bracts, and large, handsome flowers, measuring over 2 inches across. The sepals and petals are very light greenish-yellow, marked with numerous small blotches of purple-brown, and the lip yellowish-white, with longitudinal striations of violet-purple. In colour it approaches the seed rather than the pollen-parent, though the ground colour of the segments being more yellow, and the markings smaller and more numerous than in Zygopetalum, indicates an approach to the pollen parent. In Colax, however, the markings are con-

fined to the petals, while in the hybrid the sepals and petals are alike, as in Zygopetalum. In shape it is almost intermediate between the two, the sepals and petals being shorter and broader than in the mother-plant, though almost as widely spreading, not connivent as in Colax, which has also very broad segments. The foliage, too, is about intermediate, both in character and in the time of making its appearance. The leaves of Colax appear before the scape; in Zygopetalum the reverse takes place; while in the hybrid both appear nearly together. As to the pollinia, they are ovoid, almost as in Colax, not flattened as in Zygopetalum, pale yellow in colour, not whitish as in the former, nor deep yellow, as in the latter. They are also seated on a distinct caudicle, a little shorter than in Colax, not subsessile on the gland, as in the mother-plant. Altogether it is a most remarkable hybrid, of great interest from a botanical point of view, and a very handsome plant for the cultivator.

In conclusion, a word as to Colax itself. It is a small genus of three or four species, and, as Lindley remarks, "with a caudicle quite unlike anything among their race. It has no distinct gland, but consists entirely of a thin wavy membrane, strengthened by an elevated line in the middle, and gradually narrowing to a line at the point where the gland is usually found. Mr. Bentham reduces the genus to Lycaste, which, however, has a very slender elongate and flattened caudicle, and a broad distinct gland, for which reason I believe Colax will have to be maintained as distinct. Paphinia, too, does not accord well with Lycaste, which latter is a natural group of uniform character when thus treated. *R. A. Rolfe.*

Polemonium cœruleum (*Linn.*) var. himalayanum, *Baker.*

This is the only Himalayan Jacob's Ladder. It was issued by Wallich, and has been dealt with by Mr. Bentham, in De Candolle's *Prodromus*, and by Sir J. D. Hooker, in *Flora Indica*, as P. cœruleum, pure and simple, but it is certainly so far different from the common European type as to deserve a distinctive name for horticultural purposes.

We have had it at Kew for many years, and it has maintained its individuality. My attention is again drawn to it now by receiving specimens sent for a name from Messrs. Paul & Son, of Cheshunt, who obtained it from Colonel Walker. It has larger flowers than the European type. In the living specimens now laid before me the expanded corolla measures 1½ inch in diameter, the round lilac-blue segments being ½ inch broad. The panicle-axis and calyx are very hairy. The mature calyx is ½ inch long. In leaf, inflorescence, and structure it does not differ materially from the European type. The seeds appear flatter and more acutely angled. Our specimens in the herbarium are from Lahul, Kashmir, and Kumaon, where it ascends the mountains to 12,000 feet. Mr. Dewar tells me that it is sometimes called grandiflorum in gardens, but it is quite different from P. grandiflorum, Benth., which is a native of Mexico. *J. G. Baker.*

CAMBRIDGE BOTANIC GARDENS.

There are always to be found in flower a number of rare and interesting plants here, under the care of Mr. R. Irwin Lynch, the curator. Some of the things have been prime favourites in days long gone by, and their beauty, as seen at Cambridge, leaves it hard to understand why they are not as great favourites now. The ferneries with the large planted out Aroids and Pandanads are always strong features at Cambridge, and we never saw them looking in better condition than they were a few days ago. Among the fine things seen in a hurried visit we noted the mammoth Aloe plicatilis, which is now covered with numerous spikes of orange flowers; Arctotis aureola, with fine orange flowers; A. aspera var. arborescens, white tipped with pink; A. revoluta, yellow; Calceolaria Burbidgei, a showy bright yellow species; Grevillea Preissiana, covered with crimson heads of flowers; Iris fimbriata and I. Milesii, the latter a very large porcelain-blue, which is said to flower only at the Cambridge Botanic Gardens; Asclepias curassavica, orange and scarlet; Cuscuta reflexa, parasite on a Pelargonium, and sending down its slender stems with their Lily of the Valley-like flowers; Heterotropa asaroides, like a Cyclamen, with curious black flowers; Senecio pauciflora, a neat yellow plant; Drosophyllum lusitanicum, flourishing vigorously with the Sundews; Mantisia saltatoria (the Dancing Girls), with its curious oscillating yellow and blue flowers; Impatiens Episcopi, mauve; Thunbergia fragrans, a pretty white climber; Oxalis Plumieri, a yellow climber; Philodendron erubescens, which, having mounted to the roof, is displaying its gaudy shining crimson spathes beside the handsome-leaved P. Carderi and the Tonga plant (Epipremnum mirabile). In bloom also we found a grand specimen of the showy Brugmansia sanguinolenta, the fine yellow Candollea tetrandra, many handsome Tydæas, and other Gesnerads; the curious scarlet Heterotoma lobelioides, Alpinia mutica, Mackaya bella; some Orchids, and many interesting things among the succulent plants.

Among many fine plants in the grounds we found in bloom the rare Iris Saarii, something in form like I. Susiana, but with pale yellow falls veined with black and white standards, closely netted with black; Rubus deliciosus, covered with white flowers (on wall); Allium Korataviense, Campanula abietina, a pretty mauve; Lilium giganteum, well advanced: Pentstemon Menziesii, very bright crimson; many rare species of Tulips, Fothergilia alnifolia, with white heads of flowers, resembling some of the Proteaceæ at first sight; and Capparis spinosa (Caper plant) in great vigour, with a very slight protection through the winter.

The bog garden is very interesting, and many successes have been scored there. The Aponogetons are in flower in the water, together with Menyanthes trifoliata, &c.; and on the banks Primula japonica, Sanguinaria canadensis, Viola biflora, and other things good and curious, are in bloom, amid a great profusion of pretty foliage plants.

NATAL TO THE TRANSVAAL.

(*Concluded from p. 610.*)

December 3.—We reached the Warm Baths, 3400 feet, a natural hot mineral spring, which bubbles out of granite rocks tilted up on edge, at a temperature of about 140°. One bright summer morning before sunrise I had a long bath in the water; it is an enervating but new and delicious feeling. The vegetation close to the spring is nothing very remarkable, consisting of a large tree of Syzygium cordatum, and a few plants of Ficus, Aloe, and Asparagus. A few Natal plants grow near here—Burchellia capensis, a Gardenia, and Scilla natalensis, in splendid form. New to me was a very pretty white and brown-flowered Indigofera, a Habenaria with spurs of extraordinary length, a splendid Brunsvigia, a scrambling purple-flowered leguminous plant with a delicious Violet-like scent; and a robust-growing Jatropha.

Passing the deep and rapid Komati or Umcomati River, 3300 feet, and keeping a sharp look out the while for crocodiles, we slowly toiled up and down vast mountain ranges, over execrable roads, and camped out on top of the Rooi Achter (Dutch, Red Hill), 5300 feet. Rain and mist hang constantly about these hills, as I found to my cost. A large collection of dried flowers I had made was destroyed by the continual damp. The rocky sides of these mountains are clothed with dense forest. Rain and bad roads detained us here a few days, which I spent in exploring as far as I was able.

Cyathea Dregei is very noticeable; stems 10 to 20 feet high, often three to five branched, and the fronds for length, breadth, and perfect condition I have never seen equalled. Here and there, mixed with the common form, were plants with distinctly drooping fronds, and climbing up their stems was a lovely little Myrsiphyllum studded with white flowers—quite distinct from M. asparagoides. In rocky places I lighted on an Anemone some 3 feet high, flowers half an inch across, white, twenty to thirty in number, leaves tripartite. It is probably a new species. In wet places the Natal Melastomad, Osbeckia Umhlasiana, was opening its showy purple flowers. Gomphocarpi are very numerous, varied, and handsome here. The flowers of some of these were thick set with legs of flies, beetles, and ants which these insects had unwillingly left behind them in the corona clefts.

The scenery here is most romantic. One beautiful little bit remains impressed on my memory. A mountain stream dashing from rock to rock above. Tree Ferns grew dense and broad, and from every nook and ledge of the grey lichen-covered cliffs were seen the orange-flowered Begonia natalensis, with a lovely purple Streptocarpus, both profusely bloomed; together with varied Ferns, such as Gleichenia umbraculifera and Mohria caffrarum. Above all were large trees of Greyia Sutherlandi, Syzygium cordatum, Erythrina latissima, Halleria lucida, with many other shrubs and trees quite strange to me. From observations taken here, the average summer temperature—shade—is 60°—65° night; 70°—75°, day; alt., 5300 feet. On one hillside I was fortunate enough to secure corms of a huge Gladiolus, or possibly a Watsonia. The leaves for size and texture reminded me of Phormium tenax; last year's flower-spike was 6 feet high, bearing the remains of twenty-five to thirty flowers.

About two miles from our road a solitary conical mountain attracted my attention, and I ascended to the top one clear day—alt., 5800 feet. On my climb up I passed a handsome climbing Dioscorea, leaves trifoliate, flowers white, hanging down in long, graceful racemes; also a shrubby Labiate, not in flower; leaves large and glutinous, with a strong and distinct scent. On the summit Pavetta Bowkeri was finely in flower. The prospect is a very extensive one to every point of the compass. If the High Veldt is compared to the long undulating swell of the ocean, then this part of the country might resemble the sea in its most violent mood. Southward I looked across the Komati Valley; northward a vast mountain range rose against the sky-rim, perhaps the watershed of the Limpope River; and yet not a single farm, farmhouse, town, or vestige of cultivation could I descry. The air on these mountain tops is very good and pure, without a particle of mist, and exceedingly clear and health giving.

On again descending and ascending by wry-necked tracks, deep in red clay mud and besprinkled with huge boulders till at last on December 10, from a hill-top, 4900 feet, we saw, far beneath us, some 30 miles off, in the De Kaap Valley, a patch of white, and knew it was the end of our voyage, *i.e.*, Barberton. With much delay and mishap we got down into the De Kaap Valley, 3000 feet, and saw here for the first time a very fine crimson flowered Bauhinia, flourishing to perfection. It has been named to me as B. Burkeana, but I think it must be a mistake. Harvey describes the plant as a climber—all I saw were decidedly shrubby; it is a very good thing. On the road down to the valley several Natal plants were seen—Calodendron capense smothered with its lilac flowers, also Dais cotinifolia, Psoralea pinnata, Phygelius capensis, Polygala virgata, and a very fine Dombeya with white and rosy flowers, figured in Harvey's *Thesaurus* as D. Burgessiæ, pl. 137—138. In a moist shady patch of bush I found a beautiful Aulaya or Harveya (Scrophulariaceæ), some 2 feet high, nearly rootless and destitute of leaves, bearing twelve to eighteen campanulate rosy flowers, richly scented. In the warm low valley a decided change takes place in the vegetation. Proteas and Tree Ferns are replaced by Mimosas. I omitted to mention amongst the plants seen in the Komati Valley was a singular Aloe? plant, 1 foot high, with red tubular Cyrtanthus-like flowers, narrow spiny-edged leaves, and a Lilium-like bulb composed of scales.

The very finest of our Natal terrestrial Orchids, Lissochilus Krebsii, grows here (De Kaap Valley) in partial shade; one or two distinct Ferns were in flower with a mauve labellum. In wet places a stately white Satyrium is noticeable, 3—3½ feet high. I had heard of a so-called "wild Tuberose" in these parts, but could find nothing like it. An Anona, probably A. senegalensis, grows here and there; the fruit is like that of A. reticulata, but smaller. Near the Queen's River, 2000 feet, a very fine Gloriosa, with pale yellow flowers, was seen. Slowly as we neared Barberton we heard the incessant explosions of dynamite in the gold-bearing quartz mountains behind the town. One night we had a heavy thunderstorm and the lightning playing round the famous Sheba reef had a very fine effect. At last, on December 20, we reached Barberton, a very busy town, some 5000 population, about eighteen months old, 2800 feet altitude, S. latitude about 25°—nearly the same as the southern point of Madagascar. Although in the middle of a Dutch Republic it is wholly an English town. It is growing very rapidly, and owing to its distance from civilisation necessities and comforts fetch exorbitant prices. Fresh fruit is not to be had, Potatos fetch £3 to £4 per sack! and all vegetables are scarce and dear in proportion. But this state of things will soon right itself, since there is a good deal of land being brought under cultivation near town. Water, wood, and stone are abundant, and with ordinary care the climate is good enough. To my regret time did not allow me to ascend the vast quartz mountains which lie behind Barberton, and from whence the gold is obtained. The plants at the base of these hills consist mostly of Acacia, Aloe, Euphorbia, Cissus, and Bauhinia.

I have now briefly described such plants as I met with, but a glance at the map will show how small a portion of the Transvaal was gone through. Many plants were out of flower, and many had not yet bloomed. I trust, however, that these rough notes on a little known country will serve their purpose. *R. W. Adlam, Pietermaritzburg, Natal.*

CULTIVATION OF RAMIE, OR CHINA GRASS, IN SPAIN.

In a recently issued Consular report on the trade and industry of the district of Barcelona during the year 1886, it is stated that agriculturists in the Gerona district have lately been turning their attention seriously to the cultivation of the Ramie, or China grass plant (Bœhmeria nivea, H. and A.). For some years past, in consequence of the destructive inroads of the Phylloxera and other pests among the vineyards, and of the increasing importations of cereals from America and elsewhere, the cultivation of the Vine and cereals has ceased to be as profitable as formerly in that part of Gerona, and finding that the climate and soil are in every way suited to the cultivation of this plant, and that the few essays that have been made have resulted in success, a factory for decortication has been erected near the plantation, its inauguration, although created and carried out under foreign (French) auspices, having been attended by the notables of Cataluna. Hitherto the roads from the above district have been dry beds of torrents, which prevented conveyance of produce to any distant market; now it appears the roads are to be levelled and made passable. It is said that this plant is destined to replace, not only the Hemp and Flax which are imported from France for the manufacture of textiles in Barcelona, but even that of Cotton. The plant grows to a height of 60 to 90 inches. It is essentially a textile plant, and two cuttings may be made in the year, and cultivated under good conditions a hectare would grow from 3000 to 10,000 kilos. of stalks. At present there are few or no reaping machines in that part of Spain, but as labour is cheap, the loading and pulling of the crop is done without much expense. The plantations at Torroella de Montgui, the district of Gerona in question, have an extent of 130 hectares, but there is land disposable for the culture extending over 3000 hectares. The present price of Ramie is 10 pesetas (8s.) the 100 kilos. There are three decorticating machines at work, moved by a steam-engine of 15-horse power. They decorticate 215 kilos. of stems in twelve hours, from which are obtained 43 kilos. of thread, requiring but two workmen to manage each machine—one to introduce the stalks and the other to receive the fibre; and the expense is 12 pesetas 50 c. per 150 kilos. of thread per diem. The society to whom the plantations and factories belong is the Société de la Ramie Française, founded in 1882, with a capital of 3,360,000 francs.

The advantage of the Ramie over other textiles rests in its great resistance to wear, three times greater than that of Hemp, and from its greater length is more flexible, and has the property of colour, assimilating itself to silk.

The thread produce can be manufactured into blinds, white cloth, mixed cloths for curtains and hangings, the *punto* cloth, the finest blankets and flannels equal to those manufactured from Sariss wool. *J. R. J.*

"THE BOTANICAL MAGAZINE."

(*Continued from p. 671.*)

In 1804-5 appeared Sir J. E. Smith's *Exotic Botany*, the coloured figures by James Sowerby. It is on quite the same plan as the *Botanical Magazine*, and the quality of both plates and letterpress is superior to the Magazine of the same date; yet it only reached two volumes of sixty plates each. The plants figured form a very interesting selection, largely Australian, with an infusion of Scitamineæ, or monandrous plants, as they were commonly called. Most of the plants were in cultivation at the time, but figures of others specially worthy of introduction are given. Thus Epacris longiflora (pl. 39), concerning which Smith observes:—"No species of Epacris has yet been raised in England; but surely the annexed plate will excite cultivators to endeavour to obtain some of the seeds." Two years later the same species was figured in the *Botanical Magazine* (pl. 982), from a plant grown by Loddiges. Plate 41 is a representation of the Australian Drosera peltata, which the author says there was scarcely any hope of seeing cultivated, though he would not despair, for twenty years before there was as little hope of seeing a flourishing Epidendrum in the gardens of Europe, though at the time of writing many of the tribe had become familiar.

In 1805 the first part of the *Paradisus Londinensis* appeared, and it was continued until 1808, reaching 117 plates. William Hooker, a pupil of Francis Bauer, was the artist, and R. A. Salisbury wrote the descriptions. Hooker was a clever artist, and was subsequently engaged by the Horticultural Society, contributing the excellent plates which adorn the earlier volumes of the *Transactions* of the Society.* He resided at Kew, and there is an interesting memorial of him in the collection of drawings in the Herbarium. It is a large coloured drawing of a branch of a Peach tree bearing both Peaches and Nectarines, from the garden of Mr. Gilpin, at East Sheen. The genuineness of the drawing is attested by the signatures of two witnesses, and the circumstance is alluded to by Salisbury in the first volume of the *Transactions of the Horticultural Society*.

The second edition of the *Hortus Kewensis*, consisting of five volumes, was published from 1810 to 1813. It was edited by William Aiton, and a large portion of the descriptive matter was contributed by Dryander and Robert Brown.

In 1812, while still connected with the *Botanical Magazine*, Sydenham Edwards gave the world his *New Botanic Garden*—a quarto containing sixty coloured plates, each illustrating two plants. This was followed in 1815 by the *Botanical Register*, in the foundation of which Edwards had the assistance of Ker, who had also been a valuable contributor to the Magazine; and for the remainder of this period the rival excelled the older publication. Edwards died in 1822, and was succeeded by M. Hart; and as early as 1823 (pl. 748) the initials J. L. (John Lindley) occur, though his name does not appear on the titlepage till 1829. With the powerful support of Lindley, the success of the *Botanical Register* was assured, and it was continued by the same editor until 1847, when it ceased altogether. Lindley himself was a good draughtsman, and occasionally contributed drawings; but after 1831 Miss Drake, who illustrated so many of Lindley's works, was the chief artist. Here and there we find the name of Mrs. Withers, who was also an accomplished artist. Altogether 2702 plates appeared in the *Register*, though unfortunately they were separately numbered in every volume after 1837.

Loddiges, the renowned nurserymen of Hackney—vestiges of whom still exist at the Crystal Palace—started their *Botanical Cabinet* in 1818; and it extended to twenty volumes and 2000 plates. The figures are usually neat and often pretty; but the work has not the slightest claim to the title "botanical." The letterpress is exceedingly meagre, and largely impregnated with pious ejaculations and admonitions.

In 1819 our Samuel Curtis published a *Monograph of the Genus Camellia*. There are five very large folio plates, each containing several varieties, drawn by Clara Maria Pope. From this work we learn that Lee and Kennedy had flowered twenty-five varieties of Camellia. Bound up in the same volume (from the library of the late Sir William Hooker), are two coloured engravings of Dahlias, apparently by the same artist, but undated, and perhaps unpublished. About twenty varieties are represented, and I mention them because they are just what we have recently returned to, namely, single, and the so-called Cactus varieties. In the same volume, too, is a fine original painting of the gorgeous Australian Doryanthes excelsa, which flowered in 1826 at Woodhall, Lanark, the seat of F. Campbell, Esq.

Lindley's activity in horticultural literature began in 1820, with a monograph of the species of Rose (*Rosarum Monographia*), containing nineteen coloured plates. This was followed in 1821 by the *Collectanea Botanica*, comprising forty-one coloured plates of an interesting selection of plants, chiefly noteworthy for the number of Orchids it contains; indeed, it merits the title of the herald of the Orchid era. Primula sinensis, an introduction of the Horticultural Society, is here first made known to the public.

Robert Sweet, many years manager for Colvill, the nurseryman, in the King's Road, Chelsea, was the author of several works connected with horticulture, commencing with *Hortus Suburbanus Londinensis*, 1818; an excellent catalogue, giving native countries, dates of introduction, references to figures, &c., of plants cultivated in the neighbourhood of London. His next work was the *Geraniaceæ* (1820-1830)—five volumes, containing 500 plates. Much might be said concerning this, but I must limit myself to the statement, that it is an enduring record of the early steps in raising garden varieties. The *Botanical Cultivator* passed through five editions from 1821 to 1331. In 1823 he started the first series of his *British Flower Garden*. This consists of three volumes, containing 300 coloured plates; and the second series (1831-1838) of four volumes and 412 plates; and there was a reissue of the whole in 1838. I have only seen a copy of the reissue, which is very badly coloured, except the last volume. Whether the original edition was better I am unable to say. Sweet had now two serials running, to which, in 1825, he added a third—the *Cistineæ*, which consist of one volume of 112 coloured plates. All these works were principally fed from Colvill's extensive nurseries.

Dr. W. Jackson Hooker's (afterwards Sir William J. Hooker) first independent book was his *Tour in Iceland*, 1813. Ten years later he founded the periodical, *Exotic Flora*, and continued it until he undertook

* Johnson (*A History of English Gardening*, p. 284) attributes this artist's *Pomona Londinensis* to William Jackson Hooker.

the editorship of the *Botanical Magazine*, when he concentrated all his horticultural resources in the latter. Sir William Hooker was his own artist; but as he is the principal personage in the next period of this history, I will only add that there are three volumes of the *Exotic Flora*, containing 232 handsome plates.

The late Duke of Bedford was a great patron of horticulture, and defrayed the expense of publishing various works connected therewith—among them the *Hortus Ericæus Woburnensis*. This is a classified catalogue, illustrated with single flowers of many species of Erica, and an ingenious "diagram of colours." The fine collection of Heaths at Woburn was subsequently presented to Kew.

Maund's *Botanic Garden* (1825—1842), a small quarto of nine volumes and 312 coloured plates, deserves special mention for the admirable colouring of the figures. Four plants are depicted on each plate, mostly, however, on a reduced scale, indicated at the side. Among the numerous excellent works of J. C. Loudon, the *Gardeners' Magazine* (1826—1843) should be cited, as it is a mine of information.

From the foregoing incomplete sketch of the English periodical horticultural literature of the first quarter of the present century some idea may be formed of the great and rapid strides then made in flower gardening. It is only surprising that with so many competitors in the field, and some of them superior to it, the *Botanical Magazine* should have survived.

An important event in this period was the formation of the Horticultural Society of London in 1805, followed by that of Edinburgh in 1809. An immense impetus was thereby given to horticulture, through its direct and indirect influences. Up to about the end of the first quarter of the century the London society continued in a most flourishing condition; and published six volumes of valuable essays under the title of *Transactions*. In 1824 the total number of Fellows was 1915, and this was augmented to 2197 by honorary and foreign members. The Society was supported by royalty and the nobility, as well as the most celebrated botanists and horticulturists of the day. Prominent among the contributors to the *Transactions* are Thomas Andrew Knight, Richard Anthony Salisbury, Sir Joseph Banks, J. Sabine, Sir J. E. Smith, and J. Lindley. Collectors were sent to various parts of the world. Thus J. Don to West Africa, J. Forbes to East Africa, J. Potts and J. Parks to China and Brazil, J. MacRae to the Sandwich Islands, and David Douglas to North America. The garden at Chiswick was established, and everywhere there was the greatest activity. Perhaps the greatest of all the Society's successes was Douglas's mission to North America, the fruits of which, however, belong to the next period. *W. B Hemsley.*

(*To be continued.*)

THE SEED TRADE.

Peas.—The representative of one of our largest wholesale seed houses informed me a few days ago that during the past season they sold about 40,000 bushels of Peas. This is a remarkable, and to some extent an astounding statement, and one can gain some idea what a gigantic undertaking it is to sow, cultivate, select or "rogue," harvest, pick over and get ready for sale such an enormous bulk made up of so many sorts. Time was when only about a dozen leading varieties had to be provided, now fifty at least are in demand, and the greater the number required the greater the care in growing them, and keeping the stocks well selected and pure. What a remarkable industry the seed trade is, and what an enormous amount of capital, labour, and enterprise is expended upon it.

The following sorts of Peas may be said to be passing out of general cultivation, owing to a gradual falling off in the demand for them, viz., Bellamy's Green Marrow, Burbidge's Eclipse, Woodford Marrow, Blue Scimitar, Hundredfold, Prizetaker, Sharp's Invincible, Early Emperor, Common Sangster's No. 1, Taber's Early Perfection, Dickson's Favourite, Princess Royal, Paradise Marrow, Alliance, and Alpha.

The following varieties are still in general demand:—Beck's Gem, or Tom Thumb, First-class Blue, Harrison's Glory, Pride of the Market, Dillestone's Early Prolific, Bishop's Longpod, Laxton's Prolific, Market Favourite, Victoria Marrow, Laxton's Supreme, Day's Early Sunrise, Maclean's Little Gem, and Maclean's Advancer, Champion of England, Fortyfold, Tall Green Mammoth, Dr. Maclean, and Laxton's Omega.

The following list represents sorts for which there is a growing demand, and they may be taken as illustrating the best standard Peas in cultivation:—William I., selected stock; Telephone, Duke of Albany, William Hurst, and Stratagem; these five may be taken as representing the most popular Peas of the day, and the demand for these increases rapidly. Other deservedly popular varieties finding more favour year after year are:—American Wonder, Sangster's No. 1 Improved, Kentish Invicta, Yorkshire Hero, Veitch's Perfection, Telegraph, British Queen, Ne Plus Ultra, and Prince of Wales.

So far the Pea crops look very promising; they are late, but there is a good clean growth, and if only fine sunny, growing weather were to set in, the plants would come away in the most satisfactory manner. All classes of gardeners are anxiously looking for a change that will bring warmer and more genial weather. *Pisum.*

A FINE LOT OF AMARYLLIS.

At Messrs. Kelway's, Langport, Somerset, I saw lately in full bloom a charming collection of Amaryllis. None were striking for their size—indeed, size often carries with it a coarseness of surface which is not so pleasant as a fine velvety or silky texture. All those I saw (they were under glass) were of a medium size, and all had a fine smooth surface on the petals. Some of the finest specimens were the following:—

Lucifer, a large bright carmine flower, with a perfect white band on each petal from base to tip, bold deep crimson feathers, a green bottom, and a purple eye. The labellum also, or what corresponds to it, had a fine white band. It is not often that a faultless white band comes out on all the six petals.

Firebrand, a fiery scarlet, veined deeper; broad petals, the inner and the outer making two fine triangles. It is a compact flower, of great substance, with half white bands, feathered with crimson, and a purple eye.

Acme is a large expanded flower, of a deep carmine crimson, and with its gorge spotted white.

Diana is in the way of Lucifer, but has more scarlet in it, and less bold feathering.

Incendie is white, with a rose blush, and very bold deep crimson feathering, of good shape and substance.

Antigonus is in the way of Acme, but better shaped.

Phereclus is white with crimson tips; all the rest is veined and spotted crimson, with a green bottom; it is of good shape.

Plumosa is cream-coloured, with bold crimson feathers and white bands; it is of lovely shape.

Cherub is white, with bright carmine tips, the feathering uniting with the tips. It is of a fine bell-shape.

Peter Drummond is salmon-scarlet, edged white; all the petals are crisped, and the bottom of the tube is of a deep crimson; the lower petals only have a half white band.

The gems, however, of this fine collection, in my opinion, are three or four; they are the following:—

Ruby, colour of Jacobæa Lily, of a lovely compact form, with very broad petals; it has a deeper colour in the gorge, which is formed of the dark coloured feathering. On the middle of each petal it has a deep-coloured velvetty band, with a very small green star at the bottom. It is a flower of great beauty.

Beatrice Kelway is of a brilliant carmine, edged white, with crimson feathering in the three upper petals, and a purple eye. This is an exquisite flower in every way.

Maxentius has bold, deep carmine tips, edged white, and bold crimson feathering. It has a fine compact shape.

St. Gatien is a deep crimson-scarlet throughout, deeper at the bottom, of fine shape and broad petals.

The foreman thinks the A1 of the collection is another, named Voltigeur, with a very stout scape. It had passed its first bloom, and the second was hardly expanded enough to show me its loveliness.

The Kelway collection of Amaryllis contains at least four different types. It would be well to keep them separate, and cross the individuals of one type with each other to maintain perfect each particular type, and improve it further by selection.

Messrs. Kelway have crossed the Jacobæa Lily (formosissima, or Sprekelia) both ways with their Amaryllis, and also with the Vallota, of which they have seedlings not yet flowered. Certainly in this collection there are colours much like those of the Jacobæa Lily and another horticulturist has on another occasion stated that he had effected the same cross, that is, of the Jacobæa Lily with the Hippeastrum; all I know is that I never succeeded in crossing these two Amaryllis.

The great feature of Amaryllis-growing in the Kelway nurseries is the thousands of bulbs grown in the open air, in the ground, without heat, and simply sheltered under frames, which in the winter are also used for other small pots, placed between the rows of Amaryllis.

If Mr. J. Kelway will do for the Amaryllis what he has already done for the Gladiolus, and Mr. W. Kelway for the Pæony (they must be grand sights when whole fields of them are seen in full bloom), lovers of these charming flowers will one day remember their names with pleasure. In this way there is no reason why the Amaryllis should not be grown by the acre, and hardier varieties eventually selected, to be grown without the shelter of any frames at all. When that time comes, Amaryllis growing will become as popular as the Crocus and the Hyacinth.

Mr. J. Kelway, by-the-bye, does not believe in acclimatisation. He thinks that if the dormant bulb of the Amaryllis, when first introduced, had been planted in the open instead of coddling it in heat it would have been found as hardy as it is now. "We find that it is hardier after many generations of growth in England, and we take it for granted that we have hardened it, while the hardiness may have been in it in the first instance."

This may be so in some cases, but in the case of the Amaryllis I do not think we have any record of the number of bulbs that have been destroyed in attempting to grow them in the open without heat. Moreover, in the same family, in the same climate, and living under entirely the same conditions, we find, for some reason not yet understood, that one child is hardy and thrives and lives with little trouble, while another is weak and delicate, and requires a great deal of coddling to get it to live at all. Often such weak individuals die in spite of every care. I think there can be little doubt that individuals derived from the same parents, nay, from the same pod, vary not only in colour, form, &c., but in the power of resisting lower temperatures than their parents could do without perishing. If, therefore, Messrs. Kelway would try the experiment of seeding some of their open air bulbs—they have thousands of them—in the open-air, without the aid of artificial heat in any way, and then grow the young seedlings again under the same conditions, they would probably find that some would survive through this ordeal, and flower in due course. These would then be fit to procreate others of a still hardier nature. Then eventually the Amaryllis might be grown like Daffodils, without any frames whatever. Of course many might perish in the process of hardening, but not all. The latter would

be the "survival of the fittest," and would form the parents of a new raee of hardy Amaryllis. Moreover, it is stated that A. Ackermanni stands the temperature of an open border, and this might be used as one of the parents of the coming race. Any hardy ones of bad form, however, should not, in my opinion, be thrown away as unsaleable, but they should be kept on account of their hardiness and improved by crossing with other hardy forms of better colour and form.

I think, at the present day, there can be little doubt that Nature has worked in this way, and we can hardly go wrong by imitating her. "Little can be known without trying," is a good motto for the horticulturist to remember.

The great advantage of Messrs. Kelway's system of growing the Amaryllis is that, after the coddled ones under glass have done flowering, by aid of artificial heat, a rush of Amaryllis bloom comes on in the open ground when they feel the warmth of the summer.

I do not believe that the great successes Messrs. Kelway have to show could have been achieved for the sake of money alone. There is ample evidence of a passionate love of the work for its own sake, enthusiasm, and that indomitable perseverance without which nothing can be done. The achiever of these advances in horticulture is evidently not only "a grand old gardener," but also "a remarkable man." *E. B., May* 5.

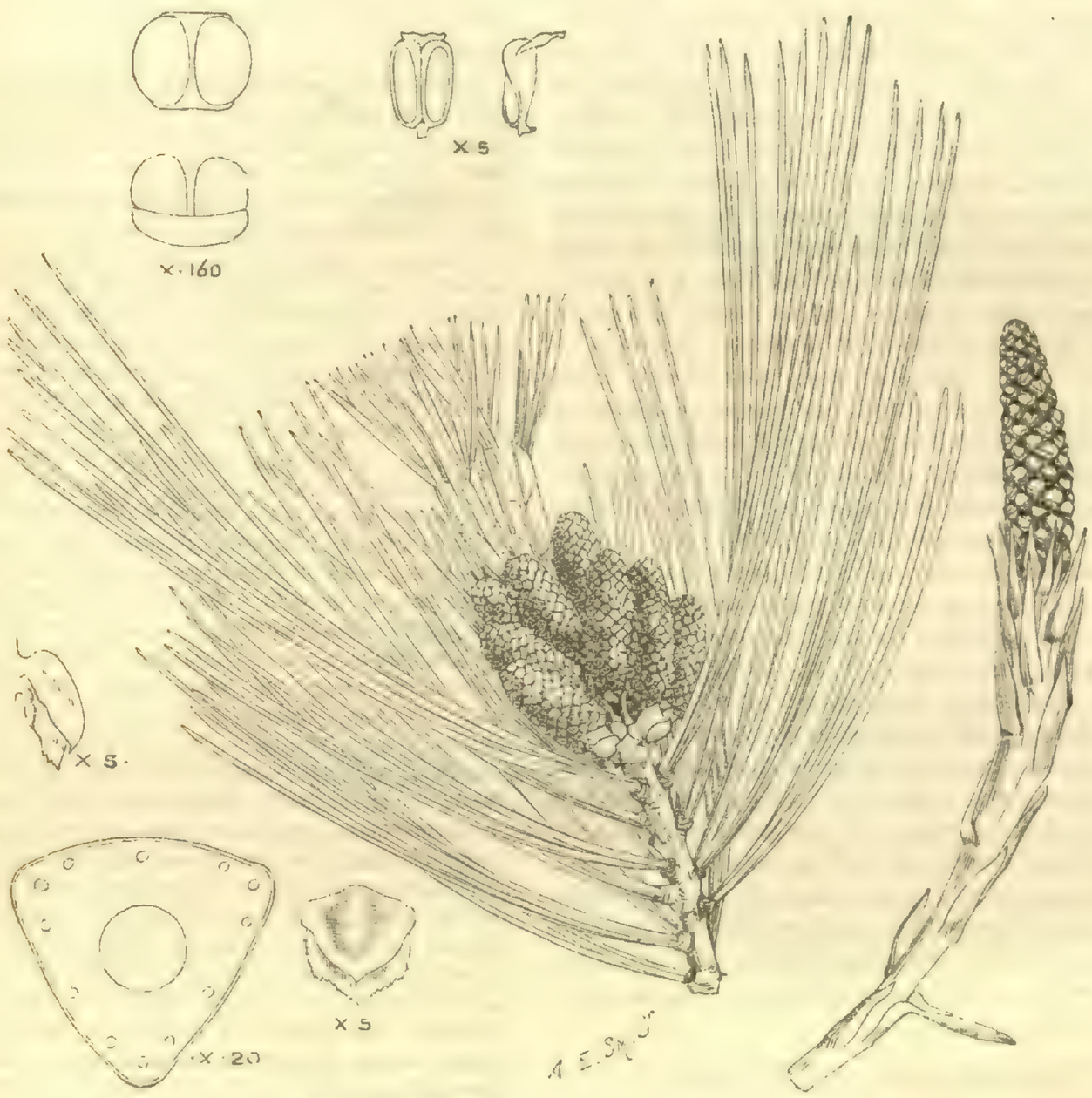

Fig. 144.—Pinus lambertiana. (see p. 772.)

Showing young foliage, male catkins, young cone; section of leaf, magn. 20 times; stamens, magn. 5 times; young fruit-scale, magn. 5 times; and pollen, magn. 160 diam.

Clematis.—Mr. Morse sends us a sport from Clematis Jackmanni alba showing semi-double flowers of the palest lilac colour, the outermost segments being partially leafy. No doubt this is an instance of reversion, as the parentage, we learn from Mr. Noble, the raiser, was C. Jackmanni crossed with C. patens alba. The sport in question is very pretty, but those who wish to "fix" the typical form will destroy these intermediate forms. It is a question of taste.

Orchid Notes and Gleanings.

If there is one thing more than another which distinguishes the writings of Darwin, and invests them with an ever-living interest, it is the light thrown upon the differences in structural details to be observed in various living organisms. According to this illustrious naturalist, every peculiarity of structure has, or has had, not only its purpose in the life-history of the organism, but it has actually been acquired by slow degrees for that specific purpose. Viewed in this light every structural peculiarity, whether of plant or animal, is something more than a mere dry fact, to be chronicled if necessary and then forgotten. It becomes the visible effect of some producing cause, and consequently something worthy of our intelligent observation.

The great Orchid family furnishes us with an example, perhaps unparalleled in the whole vegetable kingdom, of diversity of structure, and adaptation of means to an end—the end being the fertilisation of the flower, and consequent preservation of the species; the means an almost infinite variety in floral structure, in shape, colour, and odour, and the production of various appendages of the most diverse kinds. The utility and perfection of these floral adaptations we can never fail to admire, even when they are not of that extraordinary nature which causes us to wonder whether we are not dealing with some fairy tale, rather than with the domain of actual fact.

Occasionally, at least, their ways are sufficiently eccentric—that is, if we take the behaviour of ordinary average plants as a standard of comparison. And turning our attention for a moment to that most charming of recent introductions, the Catasetum Bungerothii (recently figured in these columns), I should not like to be bound over to answer for its future good behaviour. Belonging to an eccentric group of the Orchid family it may at any time perform the same fantastic trick for which its near relative, C. tridentatum, obtained such notoriety a few years ago, and for which other species of the genus are also famous.

The remarkable freak of Nature alluded to was the production of three distinct genera—at least, they were then considered as such—on the same plant. Robert Schomburgk, in 1835, in a letter to Bentham, told the latter of a remarkable plant, from appearance a Monachanthus, which on one side of the pseudobulb had a scape which bore six flowers of Monachanthus viridis and two of Myanthus barbatus, whilst a second scape bore twenty-five blooms of Myanthus barbatus. And in the following year, in the *Transactions of the Linnean Society*, he tells how a vigorous plant of Monachanthus viridis, which had borne the flowers peculiar to that particular plant, produced at its next flowering Catasetum tridentatum. He also affirms that the latter had been raised from seed of the Monachanthus; and finally expresses the opinion that the three so-called genera were all forms of the same. He also adds, "I have seen hundreds of Catasetum tridentatum on savannahs adjacent to the lake Capœya, without ever finding one specimen with seeds; while those bulbs which, according to Dr. Lindley's description, belonged to Monachanthus viridis, astonished me by their gigantic seed-vessels."

Who would have thought any member of the royal family of plants capable of such eccentric conduct? Even the great Lindley was deceived; for when, in 1836, Lord Fitzwilliam sent him a raceme of the Monachanthus, and assured him that it was beyond all doubt an accidental sport of Catasetum tridentatum, Lindley expressed the opinion that such was not the case, but that an imported plant of the Monachanthus had been accidentally taken for the latter common species. But Schomburgk's discovery fully convinced him, and he agreed that Monachanthus and Myanthus must be suppressed, though he adds, "and I have no doubt now, although no proof has been seen of it, that Mormodes must share the same fate. But which of these species have their masks on, and which show their real faces, I will certainly not at present presume to guess."

But Darwin's researches have settled the matter. Catasetum he has shown to be the male plant, and Monachanthus the female, while Myanthus is a peculiar hermaphrodite form of the same, perfect in itself, like the majority of Orchids. Mormodes, however, he proved to be a perfectly distinct genus. These facts invest our neophyte, Catasetum Bungerothii, with additional interest. If at any time it should perform the same freak as its cousins it will not find us unprepared. The event will be awaited with some interest, and we are already curious to know what its Monachanthus form, and what its Myanthus form is like.

Uropedium Lindeni.

Another freak of Nature is in evidence at the present time. I allude to Uropedium Lindeni, so long supposed to constitute a distinct genus, but now proved to be only a monster of Cypripedium—I beg the botanists' pardon, I mean Selenipedium—caudatum. It is a striking and handsome plant, certainly. But why should it dispense with the luxury of a lip? And surely two petals of nearly 2 feet in length should be sufficient, especially as other Cypripediums are content with that number, and much shorter ones too. It has, however, one advantage over its congeners, for, not requiring the staminode to prevent its insect attendants from looking in the wrong way, it can afford to let it develope as an ordinary perfect stamen: so that its reversion to an ancestral condition—if such it be—is not altogether without its advantages. A curious instance was figured lately in these columns, and is described more fully by Dr. Masters in a recent number of the *Journal of the Linnean Society*.

But why should the species have developed petals of such extraordinary length? According to the Darwinian canon they must have been produced for some special purpose, and what this purpose may be

it would certainly be interesting to know. The petals are very short when the flower opens, but elongate rapidly by a few inches a day, till they reach the ground level. Can it be that the particular insect which fertilises this species has lost the use of its wings, that the plant has found it necessary to let down a rope ladder to enable it to crawl up to the flower? I do not assert that this is the only possible explanation, but would commend the subject to those who may have the good fortune to observe the flowering of the plant in its native home. *Orchis.*

Cattleya Bluntii.

A good plant of that extremely rare form of white Mendelii which originally received the above name is now in flower in the collection of Major Lendy, Sunbury House, Sunbury-on-Thames. In beauty of form and substance it is by far the most charming of all white Cattleyas. The plant is one of a lucky six purchased from Messrs. Jas. Veitch & Son out of a fresh importation of their own, and the greater part of the other plants contained in the half-dozen are fine and valuable forms. Two now open are pure white in sepal and petal, but with lips of the richest crimson; another is pure white with a pencilling of crimson in the throat and violet blotches on the front of the labellum; and still another has sepals and petals of the colour of those of a good C. Mossiæ, but with the crimson and frilled lip of C. Mendelii. The Cattleyas and Lælia purpurata are just now very fine at Sunbury House, and especially vigorous and strong are the great masses of C. gigas and its varieties. The Odontoglossums and other cool-house plants, and the Dendrobiums and Phalænopsis, also make a fine show. Also among a select lot of curious Orchids of botanical interest, Hexadesmia crurigera, and some very curious Cirropetalums, Cœlogynes, and other things, are in flower.

Trees and Shrubs.

HARDY FLOWERING TREES AT CHISWICK.

The double-flowering Cherry, particularly Waterer's form of it, is strikingly beautiful. Recently there was a very fine example of the double white form near to the rockery in the Royal Horticultural Society's Gardens, Chiswick, the branches quite "wreathed" with its snow-white blossoms, and formed a "real picture," as the Americans would say. Of plants on the walls at Chiswick now in flower—very showy and distinct with its bright yellow flowers—is the double-flowered form of Kerria japonica. Spiræa punnifolia, fl.-pl., is likewise attractive with its long straggling branches, clothed with small rosette-like double white flowers. An admirable plant to cover rough places, rockeries, and rooteries is Euonymus radicans variegata; two columns clothed with this fine subject give one the idea of "pillars of gold" as seen at a distance, such a fine bright golden hue has the foliage assumed—a good climber, too, clinging to the wall like Ivy. *B.*

The Lawson Cypress as a Hedge Plant.

Now that this beautiful, fast-growing Conifer is abundant on most estates it may be welcome news to those who do not already know it, that the Lawson Cypress (Cupressus Lawsoniana) is well adapted for hedge planting. Eight years ago, having a surplus stock of this tree, we formed a hedge some 200 yards long in a rather sheltered position near the seacoast here, and I am happy to say that, although sanguine as to its success at the time of planting, it has turned out quite as well, if not indeed better, than any other Conifer with which we have experimented. This Cypress bears the shears well, bears topping over better still, and forms in two or three years from time of planting a thick, close, almost impenetrable wall of light, vivid green foliage. As a screen plant I know of no other Conifer that is so well suited for the purpose as the plant in question, and being not at all particular about soil is therefore rendered of great value for planting about newly formed houses and buildings, where usually the soil is little else save a mixture of rubble and lime. Transplant this Cypress when you will, no evil effects follow—that is, if half the amount of care necessary for other trees be but spent upon it. It grows well under the drip and in the shade of other trees, it imparts a warm rich look to our woodlands generally, it is not liable to insect attacks, is first-class for shelter purposes, produces a very pretty and desirable wood, and is, in fact, one of the best all-round trees ever introduced. *A. D. W.*

The Herbaceous Border.

IRIS PUMILA.

Dwarf perennial plants suitable for edgings to shrubberies and other similar places, of an evergreen character, are by no means numerous; nevertheless, I may be permitted to say growers do not make the most even of the limited materials on hand. Amongst appropriate subjects not usually employed, the various forms of Iris pumila should take high rank. These, which are known also as Crimean Iris, are as hardy probably as any known plants. Growing with stiff erect foliage of great width compared with their height of but a few inches, they produce large flowers of fine form, and good substance, and have effective colours. Planted in rows they soon broaden out, and form most interesting lines, giving when in bloom a charming effect. I observed even so early as the commencement of the month of March, and since during the continuance of an exceptionally long period of cold weather, new leaves were fast forming, even before other vegetation around showed signs of movement. Thus much may be said in general praise of these gems, though it may be added for the information of those who, knowing many forms of Iris, have nevertheless not made themselves acquainted with this species, that in ordinary soils the fine large flowers produced are rarely passed at more than 4 inches in height, although some few reach 10 inches. The various forms have also the merit of blooming occasionally in the autumn months as well as during the spring. The following are the forms obtainable in commerce:—Iris pumila atro-cœrulea, dark purple, I. p. cœlestis sky-blue; and I. p. lutescens, bright yellow. They are inexpensive, which is an additional fact in their favour. *William Earley.*

Phloxes amœna and Nelsoni.

Your correspondent, Mr. J. Murphy, has done well in calling attention to these two lovely spring flowers, but they are much earlier in Ireland than round about London. P. Nelsoni was not in bloom here till towards the end of May, while amœna was approaching that state about May 10, which makes a difference of nearly three weeks or quite. Respecting P. amœna, I had an experience of it last year that I have not had before, and it is this: It flowered as usual, and with its wonted freedom, in the month of May, and after it had ceased flowering apparently I had occasion to plant a fresh bed of it. Here, with attention as to watering, &c., it soon made a good start and began flowering again, and kept up its flowering from then till the first week in December, and it will be remembered that we had several severe frosts before that time in the year past. Still, notwithstanding all this, its flowering was as free and profuse as in the early spring-time. If therefore such a condition of things can be brought about by making late plantings with liberal treatment, it is well to adopt it with any plant, and especially so with such a desirable alpine as this. With me, however, it is not the diminutive plant that it appears to be with Mr. Murphy, *i.e.*, 2 inches high; in my case it is exactly 6 inches high, and forms one of the most exquisite floral cushions I know. Its luxuriance I can only trace to one particular, and that the liberal use of cow-manure, the cooling nature of which seems to suit our warm and light loamy soil. *E. Jenkins.*

Forestry.

Pruning Forest Trees.—Although great difference of opinion exists as to the time at which the above important operation should be carried out, yet recent investigations, made by a number of keen arboriculturists throughout this country generally, clearly show that the month of June is preferable to any other, one reason, and the chief one, being that at that time the wounds heal up much quicker than during July or August, when the activity of growth becomes lessened. But not only does a diversity of opinion exist as to the time at which forest-tree pruning should be engaged in, but as to whether or not pruning is legitimately necessary, and productive of increased value to the timber of the trees so treated, forest managers are still at variance. Here, therefore, we may well halt, and answer the questions that are not infrequently asked—Is tree pruning necessary, and does it enhance the value of timber? From our own experience and observations made in various parts of the country, we would, in answer to these questions, unhesitatingly answer—Yes, certainly; and previous to advocating our own method of pruning, briefly state our reasons for so saying.

When Required.—Pruning is necessary (1) to correct rival leaders; (2) to mitigate the evils arising from accidents to stem and branch caused by wind, &c.; (3) to counteract or lessen the evils caused to whole plantations of trees by early neglect; (4) to allow of the extension of views, and this is most important on many, if not, indeed, most of our English estates; and (5) to improve the general *contour* of standard specimen trees. We must admit, and it would be wrong for us not to do so, that there are cases in which pruning is not at all necessary, and that even throughout a whole plantation; but these cases are the exception, not the rule, and no better example of these exceptional cases could be adduced than that given recently in the pages of the *Gardeners' Chronicle*, in which a 99 acre plantation of Larch and Scotch Firs, of 22 years' growth, had received but one thinning, and yet the trees were tall and straight, destitute of branches for three-fourths their height (this the effect of being closely grown and pruned by Nature), and of far more value, comparatively speaking, than if the wood had been pruned and thinned every fifth year. Had the plantation just referred to consisted of not only coniferous but hardwood trees as well it would have been utterly impossible to carry out such a course of management, for either the one or other class of timber would have suffered in consequence, and both pruning and thinning would likewise have to be brought in to the rescue. Another point in favour of non-pruning is this, that if the greatest possible production of wood, on a given area, and in a given time, be what is aimed at, then by all means preserve the branches intact, for every one of these taken away from the tree lessens the number of leaves presented to the action of the sun and atmosphere, and thus, in a corresponding degree, is lessened the absorption of carbonic acid gas, and consequently the formation of wood. But herein lies the whole secret, for the amount of wood thus formed, though the greatest possible, is, nevertheless, rough and of but second-rate quality; whereas in the cultivation of clean, straight, and consequently valuable wood, a regular course of thinning and pruning, particularly of hardwood trees, less so in Conifers, should be set about early, and continued till the trees are of about twenty years' growth. Why coniferous trees generally should be excluded from the thinning and pruning just advocated is this—that when grown moderately thick, or, in other words, when an unbroken leaf-canopy is preserved, the trees, or rather Nature, does the pruning, for the lower branches die off gradually, and leave the stems bare and clean. What we wish particularly to impress on our readers is this, that as long as trees are grown thickly they require little or no pruning, whereas, when they stand far apart, and in consequence produce stout side branches, pruning must be engaged in if the timber produced is to be of value in a commercial sense. Deciduous trees require by far the most careful training, but Fir timber generally, when grown close together, produces clean, knotless wood without great attention, whereas single trees, from their abundance of large knots, are almost worthless as timber producers—that is, valuable timber. As above stated, little or no pruning should be engaged in after the first twenty years of a tree's existence, and it is also

unwise to remove any branches larger than about 3 inches in diameter. Far better is it, in my opinion, to allow branches of a larger size than that just stated, and when they have formed red or heart-wood, to remain intact, or to shorten at a considerable distance from the main stem of the tree and close to one of the branchlets, but outside of the same.

The Operations.—In pruning forest trees the hand-saw is preferable to any other tool, although in some cases the pruning chisel may be used with advantage, and with this and a sharp pocket-knife by far the best work can be performed. When a branch is to be removed make a cut with the saw in an upward direction, at its base, and close to the trunk of the tree, thus preventing the bark from being torn from the stem as is not unfrequently the case when this precaution is neglected. Having made this preventive under-cut, reverse the saw and work downwards until the two saw drafts meet. With a sharp pruning-knife dress the edges of the wound, for even the sharpest saw leaves a ragged bark edge, this being neatly smoothed over and pared so as to prevent the lodgment of water. Always remember to prune off a branch close back to the stem, for if a stump is left it rots away and usually carries decay to the very heart of the tree. By cutting close back to the stem the wound soon heals over, the lips of the wound uniting and taking again the appearance, or almost so, of the original bark, and the functions pertaining thereto. Thinning out branches on a tree, although frequently recommended, is not attended with good results generally, for those left only grow the faster from the increased light afforded by the removal of their neighbours, as well as increased nourishment. In many cases shortening of branches has to be performed, and this is neither a costly nor ruinous system, for by foreshortening some of the contending branches back to a lateral shoot these are checked, symmetry of appearance is produced, and more substance is deposited on the main stem. As little appearance of pruning as possible should be left on the tree, but when these are of large size and have been totally neglected, it is almost impossible to do this to our satisfaction, so that in nine cases out of ten, and considering that healing of the wounds is then difficult, it is better to leave such alone. No hard-and-fast lines must, however, be laid down as to how trees should be pruned, individual trees differing so much from each other in habit and mode of growth, and the pruner must therefore suit his pruning to the particular tree he is operating upon; in fact, he must assist Nature, for it would be ridiculous to treat a Lombardy Poplar as one would a British Oak, the latter having a short stem and branching head, while the Poplar is fastigiate in the extreme. The conclusion of the whole matter is this: that the necessity for pruning is closely connected with a wrong system of thinning, and *vice versâ*, this referring directly to trees in a wood or plantation, and excluding single or standard specimens. Give woodland trees just sufficient room to allow of a free circulation of air around them, and nice, clean, valuable timber will be produced with few or no large branches near the ground; whereas, by allowing wide distances, crooked stems and strong side branches are produced, the latter requiring the best efforts of the pruner to keep within bounds and from injuring the wood produced.

Ornamental Trees.—What may be termed necessary pruning of park and lawn trees consists in the removal of rival leading shoots and ungainly side branches as well as any that have become broken and twisted during stormy weather. The cutting away of all contending leaders from standard trees must on no account be neglected and in this case the straightest and strongest should be chosen for the ultimate leading shoot, and all the others either foreshortened or removed altogether. Broken or twisted branches allowed to remain on the trees are both unsightly and productive of much evil, and for these reasons they should be pruned off and carted away, or burned on the ground, as soon as at all convenient afterwards. Where a branch in falling has torn away part of the stem bark, the scar made should be neatly and evenly dressed with a sharp pruning knife, and in such a way as to prevent the ingress of damp, and the whole painted over, not only for appearance sake, but as a means of preserving the wood until healing of the wound takes place. Holes in tree-stems are often the cause of disease, by allowing water to lodge in the cavity, and for this reason we have often found it necessary to obviate the evil by stopping the holes and preventing the ingress of water by placing over the outside a piece of tin or zinc. The cavity should first be filled with small stones and lime, previous to which, however, it is well to clear out all decayed matter, and after this is done, nail firmly over the entrance a plate of either of the above-mentioned metals. We have treated a number of the Oaks, Elms, and Limes in the park here in this way, with perfect success, and there can be no doubt that, by timely attention to this matter, many an old and historic tree may be retained in health and vigour for a number of years longer than it would otherwise have done.

Prices of Oak Bark.

Exactly sixty years ago the following prices were realised for bark in London:—Oak bark, £14 15*s.* per ton; Sweet Chestnut, £11 11*s.* per ton; Birch, £7 7*s.*; and Larch, £7 per ton. At or about the same time various kinds of bark, indeed almost any that contained a certain percentage of tannin matter, including the Willow, Mountain Ash, Birch, and Larch, were readily enough disposed of. What a change half a century has brought about! Only one of these barks, that of the Oak, is now marketable, and the low prices realised for even that of the first quality renders it very questionable if it is worth the trouble of removing. Why this has come about is, however, easily enough answered, for the great importation of bark from abroad, principally America and the Netherlands, as well as free use of chemicals in tanning, has made bark of the best quality produced in this country, and which used to fetch readily enough £15 per ton, hardly saleable at one-fifth that price. I question very much whether Oak bark is worth removing when only £3 10*s.* or £4 can be got for it. I hardly think it is. *A. D. Webster.*

Fruits Under Glass.

Vines and Vineries.—In the case of old, or nearly exhausted Vines of the Black Hamburgh in the early houses, that have not been yielding satisfactory crops, the Grapes should be cut when ripe and stored in bottles in the Grape-room. The Vines should then be rooted out, and the soil and drainage removed. Then, unless the subsoil of the border consist of chalk or stone, it will be necessary to lay in the bottom 6 inches thick of concrete, with a series of deep gutter bricks set in to carry superfluous water into the main drain. Then lay on the concrete floor 6 inches thick of brick rubbish broken rather fine, covering the same with turves grass-side downwards. If brick cannot be so easily procured as rough stones, the latter, by covering them with a sufficient thickness of coarse gravel to fill the chinks, will do as well.

Soil and Making the Borders.—A suitable compost for the Vines to grow in is given in your last issue at p. 746, under the heading "Young Vines on Old Borders." Supposing that space is provided for both inside and outside borders, and the front wall of the vinery is built on arches, so that the roots can push into the outside border, this one need not be made until the inside border is completed and well filled with roots. The borders should be made in sections 4 feet wide from the front wall—the arches and sides being built up of turves—and sufficiently high to allow for the loose soil sinking 5 or 6 inches within as many weeks from the time of making.

Planting the Vines.—Make the necessary number of holes 2 feet apart, beginning at 2 feet from the end, between the hot-water pipes and the front wall the entire length of the border. Then turn the Vines carefully out of the pots, removing the drainage and pricking the ball of earth all round with a pointed stick before planting them, which should be 1 inch deeper than they were in the pots—the permanent ones midway between the rafters, and those for yielding a crop of fruit next year between them, making the soil firm about the roots. Then put a stick to each Vine for support, and secure them to the trellis, leaving them sufficiently long, and the ties loose, to admit of their subsiding 5 or 6 inches with the soil. This done, give sufficient tepid water to settle the soil about the roots, and afterwards lay on a surface-dressing of two or three inches thick of horse-droppings or short dung. Shade the Vines from sunshine for a few days until the roots have taken to the new soil. Syringe the Vines overhead, the surface of the border, pathway, and walls, morning and afternoon during bright sunny weather. Put a little air on the vineries between 7 and half-past 7 in the morning, and afterwards, as the sun increases in power, admit a free circulation of fresh air, reducing the quantity given gradually in the afternoon until closing time, about 4 o'clock, when the temperature may be run up to 90°, with plenty of moisture in the house. Keep the water in the pipes sufficiently warm to prevent the night temperature falling below 60°. *H. W. Ward, Longford Castle.*

The Flower Garden.

Briar stocks intended for Rose budding should be gone over, and the number of shoots reduced to two or three, those which are removed being cut off close. Any shoots which are intended to be budded and are growing too gross may be moderately shortened back, but this should be done a fortnight before the buds are inserted, so that the flow of sap may suffer no interruption. The budding of Roses may be undertaken as soon as the bark will rise freely and good plant-buds can be obtained. Roses budded on the Brier are sometimes short-lived, and are generally troublesome by reason of the stock throwing up suckers; Roses on their own roots are, therefore, much to be preferred. Cuttings of those may be struck from half-ripened wood at almost any season of the year or from single eyes. Choose shoots with plump buds, but which are not likely to start immediately into growth; cut these into lengths of four eyes, remove the two bottom leaves close to but without injuring the buds. Insert the cuttings in pots filled with leaf-mould, loam, and sand, placing 1½ inch of sand on the top. Plunge the pots on a half-spent hotbed, cover with bell-glasses, keep the foliage moist, and give but little water to the soil until the cuttings begin to grow. In striking Roses from eyes remove a slice of wood and bark the same as in budding, but do not remove the wood; insert firmly in silver-sand in pots or pans prepared as for cuttings; let the bud be just level with the top of the sand; use no more water than is actually necessary to keep the leaf alive. There is more danger in the buds failing from too much than too little water, and if the foliage can be kept alive there is no fear of failure. *W. M. Baillie, Luton Hoo.*

Plants and Their Culture.

Camellias.—Whether planted out or in pots these should not be allowed to get dry at their roots, and liquid manure and soot-water should be given to them occasionally throughout the summer months. Once their growth is completed the house in which they are, must be gradually ventilated to its fullest extent, so that the young shoots may be thereby thoroughly ripened. At this stage (when the growth is about finished) such plants as require it may be repotted. The soil we employ is fibrous loam broken up into larger or smaller pieces, corresponding with the size of the shift given, and rammed perfectly firm around the balls of soil, which are placed in clean well-drained pots. Previous to potting thrips and aphides should be destroyed, and after the operation is completed a moderately close and moist atmosphere should be maintained, and moderate shading given until the plants have recovered from the check. Where it is impracticable to retain plants that are not repotted under glass, they may now be arranged upon beds of ashes in a sheltered, and somewhat shaded situation outdoors; this is, however, an unfavourable practice where the rainfall is heavy, and for this reason we never adopt it.

Azaleas.—Young plants of these which it is desirable to grow on quickly, should have their blossom-buds removed as soon as formed, when they will break and make another growth. The warm treatment should be continued until the second growth is completed, and during this period the plants should be well syringed every fine afternoon. Plants should have their growth assisted with moderate applications of Clay's or Standing's, giving a growing temperature. Their requirements in the way of repotting should also receive attention; the pots should be thoroughly drained, and the soil, composed of good fibrous peat, mixed with a liberal proportion of silver-sand, be well consolidated. It is not advisable to place these late flowering plants out-of-doors, but those that blossomed early as they finish their growth may be treated in this way if space under glass be wanted for other more delicate subjects. Thrips should be kept down. *Thomas Coomber, The Hendre Gardens.*

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APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

TUESDAY,	June 14	Royal Horticultural Society: Council, and Scientific, Fruit, and Floral Committees. National Rose Society: Executive Committee.
THURSDAY,	June 16	Linnæan Society.
FRIDAY,	June 17	Royal Botanic Society: Lecture.
SATURDAY,	June 18	Royal Botanic Society: General Meeting.

SHOWS.

WEDNESDAY,	June 15	York Floral Fête (three days). Royal Botanic Society: Second Summer Show.
FRIDAY,	June 17	Scottish Pansy Society, at Edinburgh.

SALES.

MONDAY,	June 13	Leasehold Nursery, Stock, &c., at Willow Vale Nursery, Uxbridge Road, by Protheroe & Morris.
TUESDAY,	June 14	Imported and Established Orchids, at Protheroe & Morris' Rooms.
WEDNESDAY,	June 15	Collection of Orchids, in Flower and Bud, at Stevens' Rooms. Nursery, Stock in Trade, &c., at Loughborough Road, Brixton, by Protheroe & Morris.
THURSDAY,	June 16	Importation of Orchids, also Established Orchids, at Stevens' Rooms.
FRIDAY,	June 17	Orchids in Flower, at Protheroe & Morris' Rooms.

Conifers in Growth.

We sometimes hear complaints of the monotonous appearance presented by Conifers. They weary some people by their sameness; to these folk the trees look alike all the year round, probably because, as an actual fact, they see them only at one season, and that not the season of growth. We venture to say that no class of hardy trees presents greater variation in colour, more lovely harmonies, or more striking contrasts than do the Conifers at this season. The young leaf-shoots vie with the catkins and young cones in variety and beauty of tint. What more beautiful sight in its way is there just now than Parry's Spruce?* With the sun shining on it it is like one sheet of molten silver. Look, again, at the lovely effects produced by the rosy-violet male catkins of Pinus Cembra and the greyish-blue foliage, or the rich magenta colour of the young cones of Abies ajanensis with its leaves rich deep green on one side, bright silver-grey on the other. These are matters which every one may see and enjoy without any special knowledge. But there is something unworthy and wasteful in the mere sensuous enjoyment of Nature's beauties. If they are looked at simply and solely for the gratification they afford the eye, without reference to other considerations, who shall say the opportunities they afford are not wasted? Such things were not made simply to be looked at, but to promote knowledge and mental development in an endless diversity of directions, as well as to stimulate wonder, reverence, gratitude.

The life-history of these Conifers is as wonderful as their beauty is striking, and their utility paramount. It is to this point of view that we desire at present to allude. The more we know of the structure and life-history of any plant the fuller will be our enjoyment of it, the greater will be the advantage that we shall derive from it. This is true even from a sternly practical point of view. It is on the progress of knowledge that the great advances in all practical arts depend. The great discoveries, the things that change the face of the civilised world, and, practically speaking, annihilate time and space, were the direct results of scientific as contrasted with mere utilitarian research. The latter at its best is mechanical and restricted, the former is creative and illimitable. To descend to particulars. Horticulturists of all degrees and kinds have it in their power greatly to extend the amount of knowledge if they would only record their observations. There is not a subject that comes before us in our daily practice that does not afford material for useful observation, the record of which would fill up some gap in our knowledge.

Adverting again to the Conifers, it has been pointed out to us particularly by German subscribers, that the descriptions and illustrations of these plants, given in our last year's volumes, and in those which preceded it, were defective, more particularly as regards the male catkins. No doubt this was so in some cases, though not from any fault of ours, as, whenever the opportunity has presented itself, we have figured the catkins, as indeed all other organs that were available. Still we allude to the matter, because many of our correspondents have it in their power to supply these deficiencies. In the commoner and better known species, there is, of course, no lack of evidence, but in many of the rarer kinds the full organisation is not known, and specimens would be desirable. To show the kind of information required, we give an illustration of the shoots, catkins, and young cones of Pinus Lambertiana (fig. 144, p. 769). We need not say much concerning this noble tree, the Sugar Pine of California, as it formed the subject of an illustrated article in these columns by Sir Joseph Hooker, January 3, 1885, p. 11, where that eminent botanist recorded his impression of the tree as he saw it in the wild state.

The special point on which our text books are deficient is in particulars relating to the early development and mode of growth of the buds, shoots, and catkins. More recondite microscopical details, though of cardinal importance, do not come within our scope, as they must of necessity be relegated to specialists and strictly botanical journals. The object of our inquiry into the matters above-named is, from a practical standpoint, to provide means for the more ready determination of the species, and from a scientific point of view to ascertain the value of certain "characters" or points of distinction as to their constancy and their significance, as affording a clue to the ancestry and pedigree of the trees. At the same time these details relating to the structure and course of action of the plant and its parts, must to a certainty lead to the unfolding of information useful to the cultivator, who will thus learn the way in which the tree is modified by the conditions under which it grows.

The bud-scales, for instance, serving only a temporary purpose might be considered at first as relatively unimportant, but it is not so. This very circumstance, which also holds good in the case of the primordial leaves or those which precede the perfect foliage, lends them an additional value from the point of view of constancy. Serving only a temporary purpose, to be discarded when that is fulfilled, they are less likely to vary than other more enduring organs would be, and therefore they afford a better clue to the original ancestral condition than do others which have necessarily been subjected to more varying conditions, intrinsic or extrinsic.

In the accompanying woodcut the bud is not shown, but it is slender, cylindric, ending in a dome-shaped top with a short central point. The scales are lance-shaped, acuminate, chestnut-brown, papery, and more or less covered with resin. Another point to notice is the length of the lower part of the shoot uncovered with leaves, or with only primordial leaves. This is very characteristic of certain Pines, and while it indicates rapidity of growth, it foreshadows the ultimate habit and aspect of the tree, and affords a hint to the cultivator as to the possibility of its being "spring tender"—a condition the possibility of which is also indicated by the relatively thin bud-scales, and therefore requiring a sheltered position.

Another point illustrated in our drawing is the relatively late period at which the leaves, of which there are five in each tuft, diverge one from the other. In Pines there are great diversities in this particular, some leaves spread widely almost from the first, while others, as in this instance, remain in close contact for a relatively long time. The leaves are triangular in section, and have a ring of resin canals just beneath the skin.

The points to notice in the catkins and cones are their position, arrangement, form, size, and colour. In the present instance the males are of a rich orange colour, while the young female is borne at the end (not at the side, as in many others) of a young shoot bearing lance-shaped primordial leaves. The young cone is at first erect, but subsequently becomes bent down. It would be easy to advert to numerous other matters of interest. We have selected a few only which are not generally adverted to in the monographs and textbooks, and which either are not represented at all in the dried specimens of our herbaria, or at best only very imperfectly so as compared with the resources furnished by the living tree in due season, and to which, therefore, the attention of foresters and gardeners should be specially directed.

* Picea pungens var. glauca, erroneously called P. Parryana glauca in gardens.

Yucca brevifolia.—The singular tree-like Yucca shown in our illustration (fig. 145) is referable to Y. brevifolia, a native of Southern California, Arizona, Nevada, and Utah, growing in dry desert places, sometimes in such abundance as to form straggling forests. The plant attains a height of 15—30 feet, with a trunk 1—2 feet in diameter, much branched at the top. The rigid leaves measure 12—18 inches in length. The greenish-yellow flowers are borne in dense panicles. The plant is fully described in Watson's *Botany of California*, vol. ii., p. 164. The explanation of the singular arch seems to be that the top has proved too heavy for the trunk, and it has gradually fallen over to one side until it has returned to the plain and become imbedded in the sand, when it has either taken root or is held down by stones, &c., the trunk was too strong to break and the rooting too secure to let go its hold, and the result is that the tree has assumed an arch form. Our illustration is from a photograph of a tree growing in the Mojave Desert, California, and for which we are indebted to M. Joly. This

Yucca of the Mojave is the tree from whose trunk pulp is obtained for paper-making, and its manufacture is now being carried on by an English company, furnishing paper stock for the London *Telegraph*.

Mr. Punch's "Victorian Era."—If there is any one period of history less known than another to most of us, in each generation, it is that which has immediately preceded that to which we ourselves belong. Hence we commend to the rising generation this re-issue of Mr. Punch's literary and artistic record of political and social events. Those who have passed through it will be equally pleased to have their recollections so agreeably freshened. The idea is excellent, and we trust that in carrying it out a full index will not be forgotten. Messrs. Bradbury, Agnew, & Co. are the publishers of this monthly reissue of a selection from a publication remarkable for good draughtsmanship, good literary workmanship, and good sense combined with good humour.

The Gardeners' Royal Benevolent Institution.—Mr. Cutler, the indefatigable Secretary of the above Institution, makes the following appeal:—

"As a servant of this Institution, whose term of service has now extended over forty-five years, I ask the favour of your inserting this letter. At my age it may probably prove the last I shall trouble you with, as in the common course of things I cannot expect to remain much longer the Secretary.

"We are now within a reasonable distance of accomplishing our object, viz., the attainment of the sum of £1200 to defray the current expenses of the year, and also to make a grant of £5 to each of the pensioners, and to each of the unsuccessful candidates at the last election.

"I may with reason calculate that we have secured the sum of £750, leaving £450 to be obtained by June 29. Now £450 is not a large sum to be obtained, provided the gardeners of England lend a hand to support their own Society, which is always ready to assist them or their widows in their old age, when 'friends are few and far between.' Of all gardeners I venture to ask such aid as may be in their power, and I trust that the Chairman may be able on the day of our anniversary to announce that the gardening community has contributed very materially to the success of this grand undertaking.

"Let the gardeners consider for one moment what a boon this sum of £5 will be to the recipients. The great majority of them are so infirm, and, I regret to say, so poor, as to be unable to leave their homes to participate in the general Jubilee rejoicings. Under these circumstances, the grant of a little extra money will provide them with some additional comforts, and they will thus be enabled to share in the general thankfulness and loyalty, and at the same time have reason to thank the benevolent public and their brother gardeners for the pleasure afforded them.

"We have only three weeks left to obtain the sum required. I am aware that, by some, I am considered a nuisance, but I am fortified in my endeavours to assist old gardeners by knowing that I am engaged in a work of charity and benevolence, and I am confident that if the gardeners will only be true to themselves the result will be attained.

"I do not mind the extra labour that has been, and will be, entailed if the aspirations of the committee are realised, but I do mind it when we do not receive assistance and support from those men for whose benefit the Society is formed, and from whom help might reasonably be expected.

"The result now is in the hands of the gardeners, and upon them the reproach will remain if the desired amount is not realised."

Linnean Society of London.—On Thursday, June 16, at 8 P.M., papers will be read on:—1, "Flora of Munipoor and Kohima," by Mr. C. B. Clarke; 2, "Orchid Fertilisation," by Mr. H. J. Veitch; 3, "Ferns of Borneo," by Mr. J. G. Baker; 4, "Japan

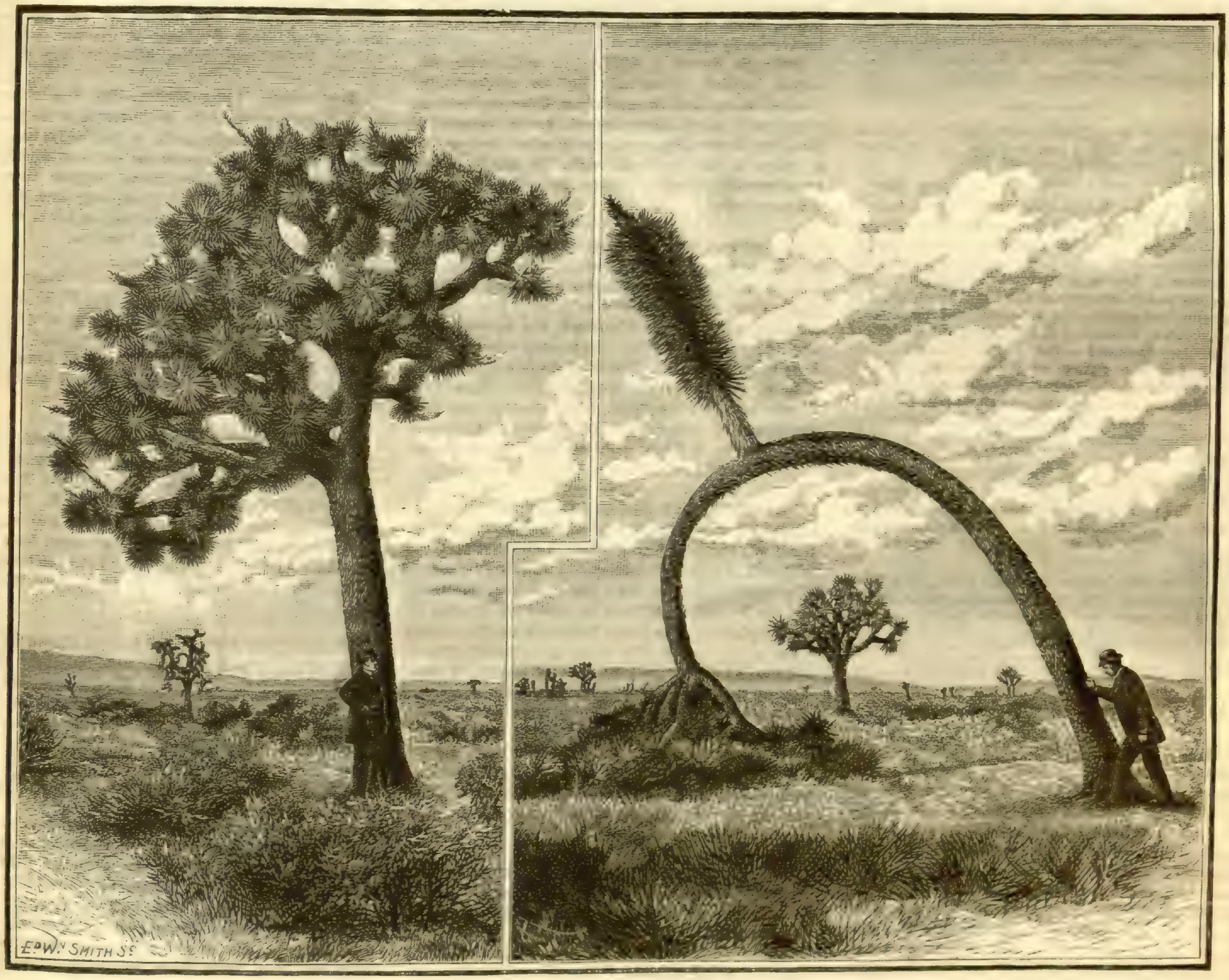

Fig. 145.—Yucca trees in Mojave desert. (see p. 772.)

Fungi," by Mr. K. Ito; and 5, "South African Botany," by Mr. H. Bolus.

Dr. Asa Gray.—We observe with satisfaction that the University of Oxford is about to confer the degree of D.C.L. on Professor Asa Gray; while Cambridge will confer a similar compliment in the shape of the L.L.D.

The Phylloxera Laws.—We have received from the Foreign Office through the Royal Gardens, Kew, the following copy of a despatch received from Berlin:—

"My Lord,—I have the honour to transmit to your lordship herewith an extract from the *Official Gazette* of the 12th inst., containing a decree dated the 7th inst., regulating the introduction of *bulbous* plants into Germany from the States not parties to the International Phylloxera Convention.—I have, &c.

(signed) "E. B. Malet, Berlin.

"The Marquis of Salisbury, K.G., &c."

Translation.

"Regulation respecting the introduction of bulbous plants from the States not included in the International Phylloxera Convention:—

"April 7, 1887.

"We, William, by the Grace of God, Emperor of Germany, King of Prussia, &c., enact in the name of the Empire, with the consent of the, Federal Council, as follows:—

"*Section* 1. The introduction of *bulbous* plants not belonging to the category of the Vine which grow in States not included in the International Phylloxera Convention of November 3, 1881, over the frontier of the territory included in the German Customs territory, and in those parts of the Imperial territory situated without the German Customs' frontier, is allowed under the following conditions:—

"1. Their introduction is permitted exclusively at those import stations indicated by the Imperial Chancellor.

"*Section* 4, No. 1, of the Regulation of July 4, 1883.

"2. The plants must be securely packed, and yet in such a way that a minute examination can be made. not only of the plants, but also of the packing.

"3. The introduction can only take place when the examination held at the import station, at the cost of the person liable, proves the packet to be free of all suspicion of Phylloxera."

Kew Gardens. — We are informed that the Royal Gardens, Kew, will be opened on Jubilee Day, at 10 A.M., as on Bank Holidays.

Help for the Scotch Crofters.—Messrs. Prentice Brothers, agricultural chemists, Stowmarket, Suffolk, have taken a very practical and sensible way of celebrating the Queen's Jubilee. They have, on the principle that a little help is worth a good deal of pity, presented 1000 bags of manure to be distributed among the Scotch Highland crofters. The manure will be distributed gratuitously by their Scotch agents. The firm, which has long been noted for its private charities, is in hopes that, as the crofters will now have manure, some firm of seed merchants will complete the Jubilee celebration, and enhance the good luck of a hitherto much distressed class, by a free gift of seed.

"Botanical Magazine."—The plants figured in the May number are:—

Xanthorrhœa Preissii, t. 6933.—A "Grass-tree," native of Swan River; a singular looking plant with a short trunk, bearing numerous closely crowded long linear recurved leaves, each about 3 to 4 feet long, and from the centre of which emerges a shaft about 6 to 8 feet high, like a Bulrush covered at the top with a dense spike of greenish-yellow, six parted flowers, with six projecting stamens. The plant figured flowered at Kew, and was one of those which was exhibited in the West Australian Court at the recent Indo-Colonial Exhibition. These plants furnish a useful gum.

Aristolochia ridicula, t. 6934, has been already figured and described in these columns.

Disporum Leschenaultianum, t. 6935.—A pretty, cool greenhouse perennial, allied to Convallaria, with erect angular stems, a foot or two high, bearing broadly ovate acute plicate leaves and terminal few-flowered panicles. The peduncles are bent downwards, each bearing a white, bell-shaped, six-parted flower, ½ to ¾ inch in diameter. The flower is succeeded by a globose purple berry. It is remarkable as coming from South India and Ceylon, the other plants of this genus being natives of Japan, China, and the Himalaya—one extending to Java and Sumatra. A nearly allied genus occurs in Western North America.

Pleurothallis insignis, t. 6936.—This is the very singular, and by no means unattractive, plant described by Mr. Rolfe, at p. 477 of our present volume. Sir Joseph Hooker considers it probable that it will eventually turn out to be conspecific with P. glossopogon, Rchb. f., to which indeed it was originally inadvertently referred.

Billbergia decora, t. 6937. — A well-known and superb species, remarkable for its white-banded toothed leaves, and its pendulous flower-spikes provided with large rose-coloured bracts concealing the green flowers, the segments of which roll up like a volute as the flower expands. It is one of the most beautiful of stove plants, and comes from the Amazon valley.

Illustrations of the British Flora.—Messrs. L. Reeve & Co. have issued, in a second and revised edition, the series of small woodcut illustrations of British plants originally designed to accompany Bentham's *Handbook*, but applicable to any other British *Flora*. It is very convenient to have so good a series of illustrations in so convenient a form, and at so low a price; more than 1300 figures are given, with a full index of accepted names and of synonyms. We observe that many of the misprints of former editions have been corrected in the present issue.

Exhibition at Antwerp.—At the "Palais de l'Industrie des Arts et du Commerce," Antwerp, there will be opened an exhibition of the "Products of Arts and Industries connected with Horticulture." The opening day has been fixed for the 19th inst., and the Exhibition will not be closed till October 15. It is expected that a large show will result, and the space at disposal equals about 17 acres of ground, and also a building with an area of almost 1¼ acre. The exhibits will comprise garden tools and appliances, pictures of flowers, fruits, &c.; plans, vases, pavilions, garden tables and chairs, gravel, &c.; dried specimens, plants in pots, &c.; and, indeed, almost everything that has any relation to horticulture. Intending exhibitors should address M. Colinet, Palais de l'Industrie, 186, Avenue du Sud, Anvers.

Royal Agricultural Benevolent Institution.—The members of the Hampshire Hunt have forwarded to the Secretary of the Royal Agricultural Benevolent Institution, through Mr. Arthur H. Wood, of Arle-Bury, Alresford, the Master, a Jubilee donation of 150 guineas.

A Hybrid Saxifrage.—Herr Max Leichtlin, in the June number of the *Illustrierte Monatshefte*, describes and gives a coloured illustration of a plant called S. speciosa ×. It is supposed to be a hybrid between S. Stracheyi and the purple variety of S. cordifolia. The foliage is evergreen, and the rosy-lilac flowers borne in massive spreading panicles.

Forestry. — On Wednesday last there was a meeting of the House of Commons Select Committee having the subject of forestry under consideration, Sir Edmund Lechmere presiding. Mr. W. Barron, of Derby, and formerly of Elvaston Castle, gave evidence. He thought the subject was neglected by landowners, who generally were wanting in knowledge of the subject. He advocated the establishment of schools of forestry in England, Scotland, and Ireland. The woods of the country were at present mismanaged so much as to amount to a criminal waste. A knowledge of arboriculture might be acquired in two seasons, and much wood that was now imported might be grown in the United Kingdom profitably. Many thousands of acres of land were available for the purpose. Professor Wrightson, of Downton, also advocated the establishment of a National School of Forestry.

Paris Green for Apple-worms—Beware!—The following notice has been sent to us for publication:—In Bulletin No. 26, issued last week from our Department of Zoology and Entomology, on p. 6, a typographical error makes the proper proportion of Paris Green or London Purple to water for spraying Apple trees for the Codling Moth, to be 1 lb. of Paris Green to 2 gallons of water, whereas the proportion should be 1 lb. of Paris Green or London Purple to two barrels, or 100 gallons, of water. *A. J. Cook, Professor of Zoology and Entomology, Agricultural College, Michigan, May* 20.

Botanists, Take Note.—Dr. Von Regel describes and figures in the May number of the Munich *Illustrierte Monatshefte*, t. viii., p. 142, in due botanical form, a new Æchmea, under the name of Æ. Hökelii. We mention the circumstance because botanists have not been in the habit of seeking such descriptions in this particular periodical, which is not one to be found in many botanical libraries.

Botanic Garden, Oxford.—We learn that it is likely that the present Curator, Mr. W. H. Baxter, will retire shortly. Mr. Baxter's long services and obliging disposition will no doubt command a liberal provision. Mr. Baxter's son has for some years acted as second in command, and is well qualified to succeed to the post.

Nottinghamshire Horticultural and Botanical Society.—At the meeting of this Society held at the Mechanics' Institute, Nottingham, on Wednesday, June 8, Mr. J. H. Walker, Hardwick House Gardens, The Park, Nottingham, read a paper on "Daffodils and Narcissus, their History, Habits, and Culture." A choice collection of plants, cut flowers, and fruit was exhibited by the members.

Plant Diseases.—The United States Government allots a sum of 9400 dols. annually to the Department of Agriculture at Washington for investigations into the nature and treatment of plant diseases. Other 6000 dols. are appropriated to other departments of botany.

Cherries.—M. Van Hulle adopts the following classification of Cherries: — The Cherries with flexible shoots and fruits, with juice colourless, acid, sugary; the Griottes, with wood of the same character, juice sour, colourless; the Morellos, with very slender shoots, fruits astringent, juice dark and coloured; Bigarreaus, with stiff wood, sweet fruit, and coloured juice; Geans, with stiff wood, firm-fleshed fruits, juice sugary, colourless; wild Cherries, with firm wood, fruits small, insipid, juice coloured.

Presentation to Mr. G. A. Dickson.—On completing his term of office as Mayor of Chester, Mr. Dickson was presented by his fellow-citizens with an address, beautifully bound in morocco, and with a tea, coffee, and dessert service in silver, 400 oz. in weight. During his mayoralty the Prince of Wales and Princes George and Edward of Wales, who were staying at Eaton Hall, visited Chester; as did various members of the Indian and Colonial Commissions, and the members of the Royal Archæological Institute of Great Britain and Ireland.

Publications Received.—*Journal of the Agricultural and Horticultural Society of India* (Calcutta: T. S. Smith, City Press, 12, Bentinck Street).—*Conférence sur le Canal de Nicaragua.* Par. G. Guzman (Paris: Office of *L'Etoile de France*, 25, Passage Saulnier).—*On Forecasting the Weather.* By B. G. Jenkins (Brussels: F. Hayez, Rue de Louvain, 108.

POTATO CULTURE.

(*Continued from p. 736.*)

Starch was known for many practical uses long before any questions were raised as to its production. Ages ago it was prepared from Wheat in Egypt and in Crete, though the first name we know for it is the Greek *amulon* (Dioscorides, *Mat. Med.*, ii., 123), which passed through many changes interesting to follow, to the modern French *amidon*. Northern nations seem rather to have been impressed with its stiffening qualities (stark), and "starche for kyrcheys" was early known in England. (Cf., "Starched Beard," B. Jonson, *Every Man Out of his Humour*, iv., 4.

Not long after the close of the last century, however, when Lavoisier had already taken the experiments of Rutherford, Priestley, Cavendish, Dalton, and others, and had established a system of chemistry, starch and other organic compounds received attention. Berzelius was one of the first to state its composition expressed as a chemical formula. By 1836 both Payen and Boussingault had studied it from chemical and physical points of view, as it occurs in many plants, the Potato among them. Senebier and Saussure had been studying the action of light on vegetation and the chemical actions going on during plant life. Senebier recognised the important action of "green colouring matter," he also expressed the view that "fixed air" (carbonic acid) is the nourishment which plants draw from the air which surrounds them. Saussure introduced into the study quantitative measurements of the relative volumes of carbonic acid decomposed and of oxygen produced, using the latter as an index of the amount of carbon taken in by a plant. The method of the formation of starch and its function in plants soon received careful experimental study, and many provisional generalisations were made. Payen expressed the view that starch is formed in plants only when the nutriment is in excess, and is dissolved and used up at a later stage of the vegetative process, when the nutriment becomes deficient. Had this remained only in the original communication it, like many other passing generalisations, would have quietly given way to views gained from further experiments; but, owing to the demand for works of the textbook type, it was dragged into prominence and became what is called a "generally received opinion."

There are yet many questions connected with the elaboration of starch and the formation of starch granules, most of them probably of no interest, and several apparently of no importance to the Potato cultivator. Still, a knowledge of how starch is formed appears capable of practical application in some ways. Such questions, for example, as the connection between granulose and farinose (now quite recently believed to be not dissimilar), as to whether the starch is in contact with the cell-wall, and so on, do not seem to be of any immediate practical value. But the main points may influence some of the directions in which cultivators would work with regard to foliage.

From the results of many investigations the following may be summarised:—

1. That the whole of the carbon found in a plant comes from the carbonic acid present in the air and decomposed from it by the chlorophyll cells of the leaves under the agency of sunlight.

2. That none of the carbon enters by the roots in the form of carbonic acid, which is in solution in water, as was formerly supposed, and therefore it does not enter by the roots at all.

3. That the hydrogen must be obtained from the moisture of the air or the water taken up by the roots.

4. That starch ($C_6 H_{10} O_5$) is formed in the leaves in sunlight—not necessarily direct sunlight, though the rate of formation is proportioned to the intensity of the light.

5. That in the dark not only is there no formation of starch, but that which has been formed is decomposed, and disappears from the place of its formation.

6. That though probably starch is not the first carbon compound formed, all the carbon in a plant probably passes through the stage of starch.

7. That the starch formed in the leaves does not pass as such to the tubers.

These results have not been obtained from observations and experiments on the Potato itself, but from other plants. It is a fair inference, however, that what takes place in other plants is similar to that which takes place in the Potato. There do not appear to be any direct observations made on the Potato, and the processes, such as are involved in the formation of the tuber, have received but little attention. This is regretable. Probably some who have opportunities may conduct experiments this tercentenary summer.

A point for the cultivator to notice is, that the presence of carbon depends on leaf-action. Starch being a hydro-carbon compound cannot be found without carbon, and it is the source of this carbon, whether it be the carbonic acid of the air, or the carbonic acid in solution in water, or both, that has been the subject of so much discussion. It seems now beyond all doubt that the source is the carbonic acid of the air, and that the chlorophyll-corpuscles are the agents of its decomposition into carbon and oxygen. What exactly is their action the cultivator cannot be expected to know, while physiologists are themselves not fully agreed. Whether or not the chlorophyll itself has any action has been doubted, the work being assigned to the protoplasm of the corpuscule (where some use the term corpuscule cell others use the term cell).

The study of the formation of starch molecules in the leaves, and of starch granules in the tuber, involve questions of different kinds; but while the cultivator is apparently more concerned with the latter he cannot neglect the former.

The agent external to the plant which "causes" the formation of starch is light, the rays belonging to a portion of the spectrum we speak of in the whole as light. The influence of light is different at different temperatures. But leaving at present this temperature complication aside, it seems to be established that light sufficient to form green chlorophyll is not necessarily sufficient to form starch. All the leaves of a plant may appear to the eye equally green, but if the inference is correct they are not necessarily all equally starch formers. Light that has passed through a layer of chlorophyll containing tissue only ·2 mm. thick has lost its power to "form" starch. The practical inference is that, even supposing leaves to be fairly translucent, the light has changed its character in passing through them. Leaves fully exposed would therefore be more active in starch formation than those shaded by others. This bears on the question of total starch production in relation to total leaf area, and therefore on the advantage or disadvantage of full foliaged plants. The question is, however, far from being fully worked out. In any case, starch in the leaves, is to be regarded only as a transition product. Probably the hydro-carbons pass down to the tubers as sugar. The formation of starch in the tubers and its history while there up to "sprouting time," are points that still need to be studied.

W. S. M.

(*To be continued.*)

NOTICES OF BOOKS.

Notes of a Naturalist in South America. By John Ball, F.R.S., M.R.I.A., &c. (London: Kegan, Paul, Trench & Co. 1887.)

We can imagine no greater pleasure for the naturalist whose circumstances hinder him from travelling than to read the experiences and impressions of those who are more fortunate in this respect, especially when it is possible to follow in imagination the footsteps of one so eminently qualified to act as a guide as Mr. Ball. This is his first very long journey, we believe; but he has been a traveller all his life, and combines with a knowledge of how to travel the necessary qualities to render his narrative entertaining, instructive, and suggestive, alike to the physicist, naturalist, and horticulturist; and a perusal of his book should induce others to imitate him in obtaining knowledge from actual observation. Mr. Ball is past the greatest vigour of manhood, yet he has accomplished a journey around South America, making many excursions on his way, with benefit to himself and certainly to the advantage of those who stay at home as well as those who may follow him. Nothing is beneath his notice, and interspersed with his observations on the natural history and physical conditions of the country, are hints, advice and information of the kind most useful to persons contemplating a similar journey. The opening words of his preface will best introduce what we have further to say concerning the contents of this book. "A tour round the South American continent, which was completed in so short a time as five months, may not appear to deserve any special record; yet I am led to hope that this little book may serve to induce others to visit a region so abounding in sources of enjoyment and interest. There is no part of the world where, in the named short space of time, a traveller can view so many varied and impressive aspects of Nature; while he whose attention is mainly given to the progress and development of the social condition of mankind, will find in the condition of the numerous States of the continent, and the manners and habits of the many different races that inhabit it, abundant material to engage his attention and excite his interest."

Mr. Ball estimates that he travelled 18,400 miles by sea at a cost of a little more than £170; and, "without any attempt at economy," the additional expenses of about ten weeks' stay on land did not exceed £100.

The journey was begun in March, 1882, and the route was from Southampton to the West Indies, touching at the Barbadoes and Jamaica, thence to Colon and across the Isthmus of Panama by rail From Panama the journey was continued by one o. the steamers of the Pacific Mail Company employed for the traffic between San Francisco and Valparaiso, and the first call was at Buenaventura, in Colombia, where only a very short stoppage was made. Nearly a day was spent at Guayaquil, and then the travellers proceeded to Payta, which, although so short a distance from the former place, is within the almost rainless region of Peru. Here our author found the vegetation as scanty as above Cairo in Egypt. They next visited Lima, whence an excursion to the higher region was made, travelling by rail as far as Chicla. An altitude of 14,400 feet was reached, and a good sample of the flora obtained. This is the subject of a contribution to the twenty-second volume of the *Journal of the Linnean Society*, from which it may be gathered that the results of a fortnight's stay in the Andean region proved most satisfactory.

Several ports on the rainless coast were touched, and Mr. Ball landed at Tocopilla, situated about 17° south of Payta, and about 22° south of the equator.

"Here," says the writer, "I found what I had often heard of, but in whose existence I had almost ceased to believe—a land absolutely without a trace of vegetable life. . . . . Not only was there no green thing; not even a speck of a lichen could I detect, though I looked at the rock through a lens. Even more than by the absence of life, I was impressed by the appearance of the surface, which showed no token that water had ever flowed over it. . . . I saw no insect and no lizard, no living thing, with the strange exception that on the rocks nearest the houses there were several small birds, which appeared to be rather shy and which I was not able to approach. I was afterwards told that these birds live on the grain which they are able to steal or pick out from the manure in the stables where a few horses and mules are kept for the needs of the place."

Most of the water required at these desolate ports is obtained by distillation from sea-water, but some is conveyed to them by steamers.

Valparaiso was the next stoppage of importance; and the flora of most of the localities visited is so well represented in the Marianne North Gallery at

Kew, we should advise the reader to study the paintings in conjunction with Mr. Ball's book,* in which there is so much of interest that it is difficult to make a selection for extract. What will specially interest horticulturists are the frequent discussions on the relations of climate and soil to the vegetation encountered, and the kinds of plants found in association. Concerning the European and other northern weeds which have established themselves extensively in South America, Mr. Ball suggests that "had the conquerors of South America come from South Africa or South Australia, bringing with them seeds of those regions, we should have seen in Patagonia African or Australian plants in the place of the European Thistles and other weeds now so widely spread." He continues, "If I am not much mistaken as to the history of the introduction of foreign plants into new regions, it very commonly happens that a species which spreads very widely at first becomes gradually restricted in its area, and finally loses the predominance which it seemed to have established."

This being a subject to which we have given considerable attention, we venture to express our opinions thereon. In the first place, northern types have spread naturally into southern regions to a much greater extent than southern types have in a northern direction. Secondly, the weeds of domestication and cultivation of Europe and the adjoining countries undoubtedly possess a degree of vigour and power of reproduction approached by few plants of the southern hemisphere. As to the area of such colonists gradually diminishing after a first spurt, we think the evidence points to a decrease in the number and size of individuals, but not to any narrowing of the area over which they are spread. On the other hand, a few southern plants have exhibited great colonising power. The "Cape weed," Cryptostemma calendulacea, in Australia, is a notable example.

We have already expanded so much that we can only briefly indicate the remainder of Mr. Ball's journey. He left Chili in a German steamer, which touched at Aota, and then proceeded through the Straits of Magellan to Sandy Point, a Chilian settlement, where a short stay was made previous to embarking on an English steamer for Monte Video. Thence an excursion to Paisandu on the Uruguay and back, and onward to Santos, in Brazil, by mail steamer; by rail to San Paulo, and afterwards to Rio Janeiro. About a fortnight was spent here, chiefly in the vicinity of Petropolis, on the Organ Mountains. On the homeward voyage they called at Bahia and Pernambuco, and sighted Fernando Noronha.

Before concluding we would specially direct the attention of readers to Mr. Ball's speculations on the ancient mountains of Brazil, and the development of the flora. A handy map accompanies the volume, illustrating the isotherms for the year, for January and July, and greatly adding to the facility of following our traveller in his narrative. *W. B. H.*

* The same may be said of the Brazilian plants, especially of those which Mr. Ball mentions by name.

NURSERY NOTES.

MESSRS. F. SANDER & CO.

The leading dealers in Orchids have, during the last few years, made excellent exhibitions of these popular flowers in their nurseries during the London season. Messrs. Sander not only keep up a continual display of flowering plants in their St. Albans establishment, but have, during the last few weeks, been the leading exhibitors, first at Dresden, and afterwards at Manchester, and no wonder, for their collections of the most popular species are so large that hundreds of flowers are developing daily. The demand for Orchids must be something enormous to create and maintain such an establishment as this. There are several houses, some of them of large size, and 300 feet long each, filled principally with Odontoglossum crispum, in which the plants may be counted by hundreds of thousands, and amongst so many are scores of distinct and beautiful varieties. At the time of my visit, on June 1, one splendid variety of the broad petalled type was in full beauty; a good name for it would be "The Queen," for it stands out superior to all its compeers. It has a long, erect spike; the flowers are 4 inches across, and the petals 1¾ inch wide, of great substance, forming a well proportioned flower, the petals white, lightly touched with rose. A pure white variety of the narrow-petalled type had flowers 3¾ inches across. Besides the true O. crispum there are also to be found amongst the imported plants other species and varieties; I also saw in flower the true O. Ruckerianum of Dr. Reichenbach, described in the *Gardeners' Chronicle* in 1873, p. 105. The sepals of the true variety are thickly spotted in lines, the petals being marked with irregular blotches; O. c. aureum, quite golden-yellow when the flowers first open; O. Andersonianum, in several varieties; O. c. guttatum. And besides these, are many forms of O. hystrix, or O. luteo-purpureum; the most distinct of this type is the variety facetum (*Gardeners' Chronicle*, vol. xv., p. 563); the sepals and petals are reddish-brown, and there is a heart-shaped blotch in the centre of the pale yellow coloured lip. Of O. triumphans there were many distinct and handsome forms; no other of the yellow Odontoglossums have such a rich golden-yellow as this, and the rich cinnamon-brown blotches are very handsome. O. Wilckeanum is one of the most precious of the yellow-flowered type found with O. crispum; it is rather scarce, as well as very beautiful. O. Schillerianum, one of Messrs. Sander's introductions, must take specific rank. It did not flower in England until 1885. The sepals and petals are yellow, very densely blotched and spotted chocolate-brown. It is necessary to pass by the numerous minor forms of O. crispum and supposed hybrids. They are too numerous to mention.

Fig. 146.—Longicorne beetle (Diaxenes Taylori).

Of Cattleyas of the leading species there are thousands, some being at rest, and others starting into growth. C. Mendelii and C. Mossiæ are gorgeous and varied in colour and form. I think the most beautiful of all are the varieties of C. Mendelii, with white sepals and petals, contrasted as they are with the rich crimson labellum. Not long does any one of these fine varieties remain in the establishment; in fact, they do not appear in sufficient numbers to supply the demand. Plants that when they flower may be worth a hundred guineas might have been bought for half a guinea each if taken by chance before the blossoms appeared. The richly coloured broad petalled forms of C. Mossiæ are also of great value. The pure white variety named Wagnerii had just flowered. It is pure white, with the exception of a yellow blotch on the lip. It differs from the variety Reineckiana in the latter having the lip stained with lilac-purple. The distinct looking C. Schroderiana was also in waning beauty. Near it the singular Epidendrum Parkinsonianum (aloifolium); it is a weird-looking Orchid, its long stems dangling overhead, the sepals and petals long, narrow, and green, the pure white lip composed of two white wings and white dagger-like centre, the tip greenish. On the other hand, E. elatum is not only pretty, but very sweetly perfumed; the spikes are long, the flowers dull greenish-brown, rose lip.

Amongst Oncidiums, which are well represented, few equal, none surpass, the handsome O. macranthum, with its long spikes of large golden-petalled flowers; and O. Marshallianum, suspended from the roof of a cool-house, produce branched spikes, which have a magnificent effect. This species succeeds better in the cool than in the Cattleya-house, so also does the first-named species; in fact, the number of Orchids that may be successfully cultivated in the cool-house is increased year by year, and they pass through the winter well when the temperature does not often fall below 50°. Oncidium hastiferum Roezlii is very distinct and very handsome; it forms quite a feature in one of the Cattleya-houses. The spikes, 3 and 4 feet long, are branched, and well furnished with flowers, of which the sepals and and petals are yellowish-green, marked with dark brownish blotches; the lip is dull red, column white. A corridor, 300 feet long, connects all the houses with each other, and suspended from the roof of this the Mexican Odontoglossums do well, notably O. citrosmum. Hundreds of this species, in great variety, were in flower, the spikes hanging downwards; the base of the flower-stems are so slender that they offer no upright support at all. The good old O. grande does well here, as also the brighter-coloured O. Insleayi.

The system of packing imported Orchids and the more rapid transit to this country has quite revolutionised this initial part of the business. I remarked a recent importation of Odontoglossum Harryanum the leaves of which were quite green, and the bulbs so plump that they seemed as if just gathered from the trees or rocks on which they had been growing. The green healthy appearance of the recently introduced Angræcums is even more striking. There is a good stock of a new one, A. Sanderianum, said to be very fine, and of A. Scottianum there are hundreds of grand specimens, many of them in flower. Now that it is plentiful this species will be grown in every collection — the large, scoop-shaped, pure white lip is very pretty. Of the rare and singular looking A. caudatum there is a grand mass with no less than eight growths. Cœlogyne Sanderiana has also been imported in good condition: it is said to surpass all others of this genus, as Vanda Sanderiana does other Vandas. It is described as having white flowers with a yellow lip, of large size, and fifteen on an upright spike. The rare and beautiful Dendrobium hercoglossum is in flower in the warmest house in several good masses; the flowers are small, with rosy-blush sepals and petals, a peculiar pointed translucent lip, and the column tipped with a dark dot. Here is a house full of Vanda teres and V. Hookerii; they are planted out thickly in beds, and grow with great vigour. In the town of St. Albans long ranges of houses are being built; half of them are finished, and well stocked with plants—Masdevallias, Cypripediums, Phalænopsis, &c. Two distinct species of Utricularia from the Roraima Mountain are well established. Mr. Sander is proud of saving a few dozens out of 10,000 sent over. They came in the form of tiny bladders. One, U. Humboldtii, has long upright spikes of blue flowers, and U. Campbellii is brilliant scarlet—so say the collectors, but they may not come up to their pristine beauty in our insular climate. It is most interesting to any Orchid fancier to walk round this immense and still increasing establishment, to admire the plants in flower, and even to linger over splendid importations of hundreds of Orchids yet unknown to science, and which would have remained so but for the enterprise of Messrs. Sander, to whom we owe our best thanks for the many lovely plants they have introduced to beautify our hothouses. *J. D.*

A NEW ORCHID ENEMY.

On May 10 last Mr. Pascoe exhibited at the Scientific Committee meeting of the Royal Horticultural Society a live specimen of a beetle taken from a stem of Saccolabium cœleste. It proved to be Diaxenes Taylori, from Moulmein in Southern Burmah, of which we now give an illustration (fig. 146), for which we are indebted to Mr. Pascoe. The beetle in question was, however, found on the stem, and not on a leaf as shown.

THE APIARY.

TREATMENT OF SWARMS.

SWARMS, like everything else this year, are unusually late, and at this date (May 27) there is no sign that bees will swarm round this neighbourhood for some days to come. If you wish for the full benefit of a good swarm of bees it will repay you to treat them well in the first instance, and any assistance rendered to a swarm will be returned with interest later on. As all advanced bee-keepers use the bar-framed hive, I will here speak of the treatment of bees in that class of hive. The first thing is to assist them with frames of foundation. If the foundation is not wired I should prefer not to use full sheets. Great attention has of late been paid to the wired foundation, and a great deal is to be said in its favour. Combs, especially new combs, frequently break when in the extractor, but wired frames never do. If then you wish for the full advantage of a swarm put it on full sheets of wired foundation, and frequently you will find all the foundation drawn out and the queen laying in twenty-four hours. If you consider that bees consume 20 lb. of honey in making 1 lb. of wax the above statement will be at once credited, and the advantage of the process seen. The only objection which can be raised to wired foundations is that sometimes the bees will not use that part of the

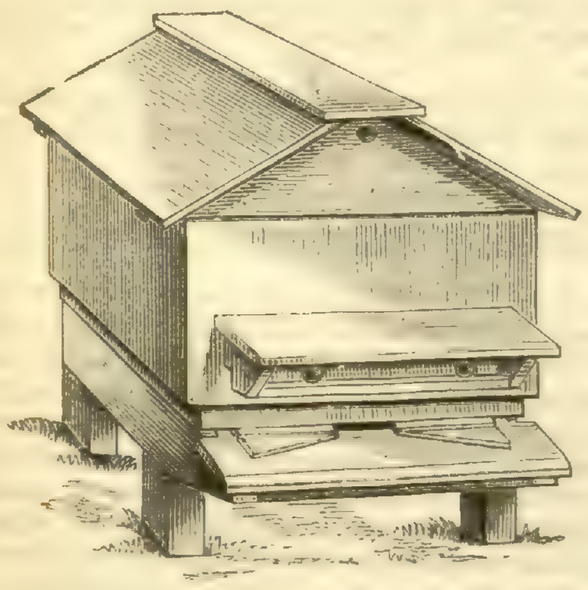

FIG. 147.—THE SANDRINGHAM HIVE AS IN WINTER.

comb through which the wire passes. This has usually arisen from the wire not being properly embedded. A very ingenious little instrument has lately been invented which has received the name of the Woiblet Spur Embedder, which does its work well, and the illustration (fig. 149) shows a frame with foundation under process of fixing, the embedder being guided by hand. Presuming that the frames of foundation are all ready, the next thing is to put them in the hive; and here is a perplexing point. The question is asked, What hive shall I select? Well, there are many excellent hives by various makers, but there is one especially suited for the above frames—it is the Sandringham hive, which owes its origin to an offer for prizes by the British Beekeepers' Association at the Royal Agricultural show at Norwich in 1886, "For the best and most complete bar-frame hive of a substantial character for general use in an apiary, with arrangement for summer and winter use, capable of being used for doubling to obtain extracted honey, or of being storified with one or two crates filled with $4\frac{1}{4}$ by $4\frac{1}{4}$ sections to obtain comb-honey." At the great metropolitan hive and honey show at South Kensington in the same year, this hive also took 1st prize for the best at 15*s*. unpainted, so that further comment on its merits is needless.

In the illustrations, the lower or stock hive (A) is much the same as in most frame hives. The principal feature is the box (C) which has two sliding supports to carry the additional frames used for doubling, that is, having the second set above the stock hive for obtaining extracted honey. If the bee-keeper desires comb-honey, this box forms an excellent cover to the sectional super (B), and an additional one for storifying if required. In winter the sliding frame supports are removed, the box is inverted, and drops over the stock hive, forming a treble walled hive capable of resisting the cold. The porch (which is removable, being attached by thumb-screws) is shifted to this winter covering, the roof is placed on, and the hive then appears as in the illustration, low and compact, and not liable to be affected by storms. Messrs. Neighbour are the makers. *Walter Chitty, Pewsey.*

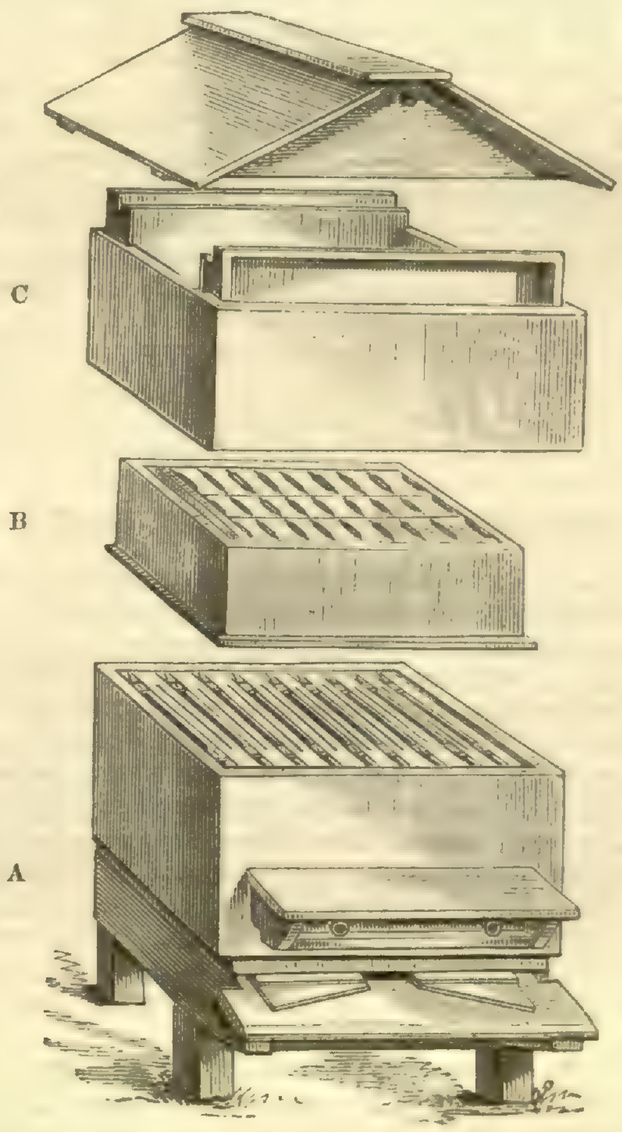

FIG. 148.—THE SANDRINGHAM HIVE.

HOME CORRESPONDENCE.

A USEFUL BROCCOLI.—When looking round the gardens at Stoke Edith Park, a few days ago, I was shown a breadth of ground planted with a new Broccoli raised by Mr. Ward, which, if he lets it go out of his hands, I think, would soon become a general favourite amongst gardeners. The breadth in question consisted of, I should say, about 400 plants of small compact heads, of uniform size, the leaves well folded over the head, which is perfectly white. The plants were so compact in growth that they might easily have been planted as thick as Cos Lettuce, which is an advantage where nice little heads, in quantity, are required, and space is limited. It is altogether a distinct variety from any I have seen, and has passed the late severe winter without a plant dying. *Chas. Denning, Holme Lacy Gardens.*

LIVISTONA AUSTRALIS.—It may interest some of your readers to learn that Livistona (Corypha) australis is growing here vigorously on the sheltered slope of a rockery facing the north-west; it was planted out more than thirteen years ago. On one occasion only has it suffered, when about 18 inches of its central sheath was destroyed by a sharp frost following on rain, from which injury, however, it recovered during the next season, and it has met with no check since. *A. M. Carré, Guernsey.*

BEDDING VIOLAS.—We lately observed a fine stock of these at the present time useful subjects in the flower garden at the nurseries of Messrs. W. Fromow & Sons, Chiswick. The "pick" of the collection may be found in the following sorts:—Lutea Grievei, a bright yellow, and, as seen *en masse*, a very telling flower; Pilrig Park and Mrs. Dickson, fine whites; Countess of Kintore, purple, tipped white. Three good blues were noted in Blue Bell, Holyrood, and Tory—real rivals to the Lobelias. Primrose Queen is a good pale yellow. *B.*

INDIAN PRIMULAS.—The collection of these Primulas at the Edinburgh Botanic Gardens, where several kinds are still in blossom, is full of interest. P. prolifera = P. imperialis. has the deep yellow blossoms of P. floribunda, but two or three times larger. Is this slender stemmed form of P. imperialis the same as the Java form? The largest number of whorls on any flower stem as yet grown here is eight. P. elongata, from Dr. King, is exceedingly like P. prolifera. Its flowers are slightly smaller and paler, and its leafstalks have not the red tint of those of P. prolifera. P. glabra is like a small form of P. capitata. P. geraniæfolia, both in flower and leaf, slightly resembles P. mollis, but is far prettier both in form and colour, and the flowers do not grow in whorls. P. Stuartii grows luxuriantly, but Mr. Lindsay finds that after three seasons, the plants begin to get weaker. P. obtusifolia, var. Gammieana, has very fine dark purple flowers, even better than P. Stuartii purpurea in colour; P. Reidii is another beautiful new introduction, the cup-shaped drooping white flowers are scented somewhat like a Clove Carnation. A bed of P. reticulata (?), now in full blossom, is very effective, with its pale yellow drooping flowers. It is apparently the same as P. sikkimensis. *C. M. O.*

PRIMULA RETICULATA.—In January of last year I received several packets of Primrose seeds from high levels in the Sikkim, kindly forwarded by Dr. G. King, F.R.S., of the Royal Botanic Gardens, Cal-

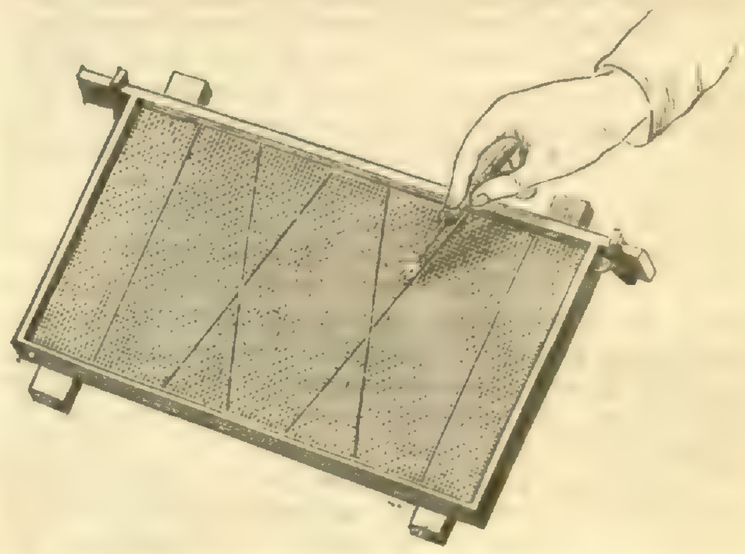

FIG. 149.—WOIBLET SPUR AND WIRED FRAME.

cutta. Amongst these were seeds of Primula reticulata (Wallich), gathered near Chiombi, 11,000 feet above the sea, "between rocks in exposed wet places." Several of these have grown into fine plants, and are now in flower at Brockhurst. At first I thought there must have been some mistake, but find on referring to the Kew authorities that it is not so, for, although the plant bears a very near resemblance to P. sikkimensis, there are considerable differences. The leaf is more deeply serrated, and, as the name implies, is more marked in its reticulations than in sikkimensis, and the petioles are much longer. The flower is of a deeper yellow, and the calyx is more inflated, as in our Oxlip, and the divisions of the calyx are keeled, whereas in sikkimensis they are not so. The scape is about 20 inches high, and the flowers more numerous, and the individuals larger and more expanded. We have similar differences in our Cowslip and Oxlip, which these Indian Primulas resemble. P. reticulata is a very beautiful plant, perhaps the most beautiful of all the Himalayan Primroses. It is quite hardy. *W. Brockbank, Brockhurst, Didsbury, June 3.*

COVENT GARDEN PRICES.—The explanations given to your representatives are, in my case, of no force whatever. My produce goes through the hands of salesmen in the markets: how, then, can buyers know or care whether it be grown by amateurs or professionals? Again, with regard to quality—this is of no avail in the discussion, our grievance being not so much the depreciation of our products, as the enormous relative difference between wholesale and retail prices of the same or exactly similar produce. A Rose, for instance is sold at the rate of three-farthings a bud, yet the same is sold ten minutes later

to my friend for 6*d.* under the very eyes of the salesman, who, on remonstrance, assures us that nothing can be more beneficent than the present system, when properly understood! Although not of the essence of the question, I cannot help adding, in reference to the question of packing, my Roses are packed by a professional of thirty years' standing—an ex-head gardener in a nobleman's garden; each stem is inserted in some moist substance, and that, although we have already sent 240 dozen to Covent Garden, not a single complaint has been made of their condition, yet with insignificant exceptions the highest price returned is 1*s.* a dozen. Again, with regard to Asparagus, though of course far from a large grower, I shall send this year to Covent Garden about 40,000 heads, which implies a tolerably regular consignment, but the highest price returned (until a few days since) has been so far 1*s.* a bundle; yet my friend, buying it within a stone's-throw, has to give three and sometimes four times what the dealer has bought it for. Curiously enough, only yesterday I received advice from my salesman telling of the very satisfactory condition in which the "grass" arrived. You will allow that it is exasperating. *South-East.*

THE POTATO CROP OF LAST YEAR.—In reply to "A. D.'s" letter of last week I still adhere to my opinion, that "the Potato crop of last season was inferior in quality;" further, I am fully prepared to submit my judgment to the trade generally. *F. W. Foord.*

NEW ZEALAND VERONICAS. — The following shrubby Veronicas are found to be hardy in the Edinburgh Botanic Garden, except in unusually severe winters:—V. salicornioides, the foliage of which is as beautiful as it is curious. It blossomed two or three years ago at Easter Duddingston Lodge, near Edinburgh, and last year it flowered sparingly in the Botanic Garden, where it has been largely grown for many years. Its little white flowers somewhat resemble those of Erica vulgaris. V. cupressoides is equally Conifer-like in foliage. It is a beautiful little shrub. V. lycopodioides (?) is another kind singularly unlike a Veronica in foliage. This is not the true V. lycopodioides, which is not yet in cultivation. Mr. Lindsay thinks it will probably prove to be V. Armstrongii, young plants of which are also grown here. V. epacridea is a pretty kind, but wrongly named, the true species not being as yet in cultivation. V. pimellioides, V. amplexicaulis, V. diosmifolia, V. cataractæ, V. Raoulli, V. kakaiensis, V. vernicosa, V. Lewsii, V. glauca cœrulea (very distinct), V. parvifolia, V. anomala, and the better known V. salicifolia, V. Lyalli, V. Traversii, V. Colensoi, V. chatamica, V. carnosula, V. buxifolia, V. pinguifolia, V. Hulkeana—these numerous species, many of them introduced within the last few years, are a valuable addition to hardy plants for the flower garden or shrubbery. *C. M. O.*

SLAG SAND AS MANURE.—In the report of the meeting of the Iron and Steel Institute I observe that slag sand from the smelting furnaces is recommended as an agricultural manure. About five years ago it was recommended to me for horticulture, and I obtained a truck-load from Middlesborough at the price of about 2*s.* a ton, the carriage to Cheshire costing about 12*s.* a ton. For three or four years I made experiments with this, mixing it with the soil round bulbs and round the roots of plants. The experiments were by no means successful; to many plants it seemed to be an active poison, and I could not find one instance in which it operated beneficially. It is, in fact, the only kind of sand from the mixture of which in this stiff soil no improvement has taken place. *C. Wolley Dod, Edge Hall, Malpas.*

POLYANTHUSES.—As your correspondent, Mr. Greenfield, of The Priory Gardens, Warwick, is one of the best spring gardeners I know intimately, there is always a twofold pleasure in strolling with him round the pretty precincts of Mr. Lloyd's Elizabethan Priory-house in the "merry month." The great feature from a florist's point of view was lately the magnificent display of Polyanthuses. These bright spring flowers are planted on either side of the walks and paths, in the foreground of the shrubberies and in beds in the flower garden. The plants do best and produce the largest flowers, when growing in a partial shade, but the beds of them look so well from a distance that even the first glance excites a keen interest for a closer inspection. And this closer inspection is no matter that can be hurried over, for Mr. Greenfield has during the last few years got together by careful selection an almost peerless strain of plants. He started with seed supplied him by Mr. A. Dean, and by only saving seed from the very best flowers and by judicious crossing, has improved the strain wonderfully. Several of the new varieties that Mr. Greenfield has thus produced, including two very charming yellows of perfect form and soft orange colour, and a Hose-in-Hose of a glowing dark crimson and peculiarly large flower, richly deserve names. Such a staunch liberal as he is ought to disseminate his good things. *Vagabond.*

INARCHED VINES.—I prefer this method of attaching one kind of Vine on another stock—by splicing the green wood—in preference to grafting with ripened wood. I observe that Muscat Hamburghs on Black Hamburgh stocks are set perfectly, and berries nearly as large again and more round in form that that kind is on its own roots. Those on their own roots are bearing larger bunches, but not so compact as the same kind, which are depending on the roots of another kind. Muscat Hamburgh inarched on Barbarossa has set fairly well, but seems to partake of the weakly footstalks of the latter, and at present does not promise to be a success. Duke of Buccleuch, grafted on a hardy black kind, with name unknown to us, is making fine short-jointed wood, and fruiting fairly well, but has not set quite so well as on its own roots. Bad setting can in most cases be credited with faulty root action, and gross fleshy roots always have appeared to us to be the most objectionable. With Muscats this is very observable; the small hard and short-jointed wood set fruit invariably well, and colour is also associated with moderate growth. *Scot.*

SOCIETIES.

READING HORTICULTURAL.

June 2.—This was the spring show, and though some good prizes were offered the competition was weak, and the display thin in consequence. Several exhibitors who a few years ago helped to make the Reading show so good no longer compete, and others are not forthcoming to take their places. Mr. H. James, Castle Nursery, Lower Norwood, took down a large number of plants and competed successfully; Mr. C. Turner also sent down from Slough a very acceptable group of show Pelargoniums; and Mr. W. Lees, gr. to Mrs. Marsden, The Wilderness, Reading, made up a very fine group, not for competition, which filled up the south end of the tent. Special extra prizes were awarded both to Mr. Turner and Mr. Lees.

Orchids.—These were shown better than they have been seen at Reading for years past. Mr. H. James had the best three, having large made-up specimens of Cattleya Mossiæ, Odontoglossum Pescatorei and O. Alexandræ; Mr. Pound, gr. to G. May, Esq., Reading, an excellent piece of Dendrobium suavissimum; Aërides Fieldingii, with four spikes; and Odontoglossum citrosmum. Two equal 3d prizes were awarded, and an extra prize was also awarded. The best specimen Orchid was a very good Dendrobium densiflorum, with about twenty spikes of flowers, shown by Mr. Parham, gr. to H. J. Simonds, Esq., Reading; Mr. Lawrence, gr. to Mrs. O. Knox, Caversham, being a good 2d, with an excellent piece of Miltonia vexillaria.

Stove and Greenhouse Plants.—Mr. James was the only exhibitor of nine plants, having a very good lot indeed; Mr. Parham having the best six, and they included a fine piece of Vanda teres.

Flowering Plants.—Mr. Ashby, gr. to W. Fanning, Esq., Whitchurch, had the best nine show Pelargoniums, staging a very good lot indeed; and J. H. Millard, Esq., the best four, also nicely grown and bloomed. Greenhouse Azaleas were well shown by Mr. James, who had the best nine; and by Mr. T. Lockie, gr. to Lord C. Fitzgerald, Oakley Court, Windsor, who had the best six; Mr. Dockerill, gr. to G. W. Palmer, Esq., Reading, being 2d. Mr. James was the only exhibitor of six Ericas, staging some good plants. Gloxinias were splendidly shown by Mr. Baskett, gr. to W. J. Palmer, Esq., Reading—very large plants, grandly grown and flowered; Mr. Dockerill being 2d. The Gloxinias shown by Mr. Baskett were superior to anything we have seen elsewhere. Calceolarias were remarkably good also, large plants, finely grown and flowered, with excellent heads of bloom. Mr. Lockie was 1st, closely followed by Messrs. Baskett and Dockerill. A large group of hardy Rhododendrons, shown by Mr. Ashby, was a highly meritorious exhibit.

Groups arranged for effect.—In the open class Mr. James was 1st, with a light and graceful arrangement composed of Palms as a background, and charming Orchids rising out of a bed of Fern. This was in the shape of about three-fifths of a circle, and was much admired; and Mr. Alfred Palmer, Reading, was 2d. Extra prizes were awarded to J. H. Millard, Esq., and Mr. Phippen. In the class for a smaller group Mr. Pound was 1st, and Mr. Balchin, gr. to B. Simonite, Esq., Reading, 2d.

Foliage Plants and Large Ferns were finely shown by Messrs. Parham, James, Armitage, and Dockerill. Mosses and Ferns combined helped the show, and so did charming table plants, numerously shown.

Cut Flowers.—These included Roses, bunches of stove and greenhouse cut flowers, Pansies, both fancy and show varieties, being well shown by Mr. Lawrence; hardy flowers, &c.

Fruit.—This was very well represented for the season of the year. Mr. Turton, gr. to J. Hargreaves, Esq., Maiden Erleigh, was 1st, with two well-finished bunches of Black Hamburgh Grapes; Mr. Ashby being 2d, with good bunches also; and Mr. Cook, gr. to Jas. Taylor', Esq., Redcombe Park, 3d. Mr. Ashby was 1st with two bunches of Foster's Seedling Grapes, very fine in bunch and berry; Mr. Cook being 2d, with fine examples of the same variety. The best dish of Strawberries came from Mr. Goodman, gr. to W. C. Hammersley, Esq., Bourne End, with a dish of the finest examples of La Grosse Sucrée ever, perhaps, seen; Mr. Waite, gr. to the Hon. C. Talbot, Esher, being 2d with very fine Sir J. Paxton. Mr. Turton had the best six Peaches, showing Early Ascot in good character; Mr. Cook, Redcombe Park Gardens, being 2d with Royal George.

Vegetables.—Owing to the lateness of the season these were hardly so good as usual, and were not numerous.

ROYAL NATIONAL TULIP.

June 4.—The exhibition house of the Manchester Botanical Society in the Talbot Road, Old Trafford, was utilised for the purposes of this exhibition, and considering what a late, dull, and puzzling season it has been, there was a show of flowers that surprised many by reason of their numbers, their good quality and perfection of marking. They were generally undersized, but the growers had managed somehow to get them expanded. Mr. S. Barlow had to subject some of his blooms to a kind of sweating system, forcing them to expand after being cut, in a high temperature and clouds of steam; besides, hot-water was poured on the walks between the beds. If the warm, genial summer-like weather which visited Manchester on the show day had come a week earlier, the display of Tulips would had been of a high order. As it was, a large number of the flowers had to be pushed on into bloom under glass, and at the luncheon which followed the exhibition the Rev. F. D. Horner said, "The Tulip under glass is the florists' Tulip of the coming days." Like the Auricula it needs to be hastened into flower to have it in its best dress by a certain date. On this occasion the prizes in the schedule had been augmented considerably as a Jubilee celebration, and every flower that could be shown was staged in competition. Several promising seedlings appeared on the tables, but nothing was considered good enough on this occasion to deserve a Certificate of Merit. Some old flowers of many years' standing were shown in excellent character.

Rectified Tulips.—The principal prize is that known as the Cup for twelve dissimilar Tulips, two feathered and two flamed in each class. Five stands competed, and the principal award went to the Rev. F. D. Horner, Kirkby Lonsdale, for a remarkably pure and bright lot, consisting of—Bizares: feathered, Sir J. Paxton and Orion; flamed, Commander and Royal Sovereign. Roses: flamed, Mabel and Mrs. Lea: feathered, Nanny Gibson and Annie McGregor. Byblœmens: flamed, Talisman and Walker's Duchess of Sutherland; feathered, Friar Tuck and Mrs. Cooper. The 2d prize went to Mr. James Thurston, Albany Road, Cardiff, who had some excellent flowers, consisting of—Bizarres: flamed, Sir J. Paxton and Polyphemus; feathered, Masterpiece and Asclepius (Thurston). Roses: flamed, Aglaia and Lady Catherine Gordon; feathered, Industry and Mrs. Thurston (Thurston). Byblœmens: flamed, Talisman and Duchess of Sutherland (Walker)

feathered, Eclipse and seedling. 3d, Mr. D. Barber, Stanton-le-Dale. Two other prizes were awarded.

Six Dissimilar Tulips, one Feathered and one Flamed, of each class.—The Rev. F. D. Horner was again 1st, with bizarre, flamed, Sir J. Paxton; feathered, Masterpiece; rose, flamed, Mabel; and feathered, Nanny Gibson; byblœmen, flamed, Talisman; and feathered, Mrs. Cooper. 2d, S. Barlow, Esq., J.P., Stakehill House, Castleton, with bizarre, flamed, Sir J. Paxton; feathered, General Grant; rose. flamed, Mabel; feathered, Modesty; byblœmen, flamed, Carbuncld, remarkably fine, and thought by some to be the best flamed flower in the show, and an unknown feathered. Four other prizes were awarded. There followed a similar class for half-guinea subscribers only, and the 1st went to Mr. W. Prescott, of Lowton—a district of Lancashire that appears to be furnishing a good contingent of Tulip growers—who had good blooms of bizarre, flamed, Sir J. Paxton; and feathered, Masterpiece; rose, flamed, Aglaia; and feathered, Industry; byblœmen, flamed, Talisman; and feathered, Adonis. 2d, Mr. R. Woolfenden, Royton, with bizarre, flamed, Excelsior; and feathered, Masterpiece; rose, flamed, Mabel; feathered, Industry; byblœmen, flamed, Talisman; and feathered, Mrs. Jackson, with its feather of glossy raven's wing.

Three Feathered Tulips.—In this class there were ten competitors, and Mr. Alderman Woolley was placed 1st with bizarre, Masterpiece; rose, Alice; and byblœmen, seedling. 2d, the Rev. F. D. Horner, with bizarre, Royal Sovereign; rose, Modesty; and byblœmen, Mrs. Cooper. Four other prizes were awarded.

Three Flamed Flowers.—In this class there were seven competitors, and the Rev. F. D. Horner was 1st, with bizarre, Sir J. Paxton; rose, Lady Sefton; and byblœmen, Talisman. 2d, S. Barlow, Esq., J.P., with bizarre, Sir J. Paxton; rose, Chancellor; and byblœmen, Aglaia.

One Feathered and one Flamed Flower; for maiden growers only.—Mr. T. Simpson was 1st with bizarre, flamed, Sir J. Paxton, and bizarre, feathered, Masterpiece. 2d, Mr. Isaac Ilesford, with bizarre, feathered, Lord Lilford, and byblœmen, flamed, Adonis. Next came a similar class, open to all, in which there were twelve competitors. Mr. Alderman Woolley was 1st, with bizarre, flamed, Sir J. Paxton; and byblœmen, feathered. seedling, in the way of King of the Universe. 2d, the Rev. F. D. Horner, with bizarre, flamed, Dr. Hardy; and bizarre, feathered, Masterpiece. Four additional prizes were awarded.

Single blooms.—There were, as usual, a large number for the judges to select from, and ten prizes were awarded in each. In the class for bizarre, feathered, S. Barlow, Esq., was 1st, with William Wilson, and 2d with Garibaldi. The best feathered rose was Heroine, shown by Mr. Moorhouse; Mr. D. Barber being 2d, with Industry. Mrs. Lomax and Julia Farnese were also well shown.

Feathered Byblœmen.—The best was a finely marked and pure seedling, shown by Mr. Woolley; Mr. W. Dymock being 2d, with a seedling, very fine and promising. Talisman, Mrs. Jackson, Violet Amiable, and Adonis were also shown. With flamed bizarre Mr. D. Barber was 1st, with Sir J. Paxton; and 2d with the same. Dr. Hutchens, Orion, Duke of Devonshire, San Jo, and Pilot also gained prizes.

Flamed Rose.—The best was Mabel, shown in good condition by S. Barlow, Esq.; Mr. H. Housley being 2d, with Annie McGregor. Aglaia, Little Rose, Lady Sefton, and Mrs. Lomax were also well shown.

Flamed Byblœmen.—The best was Talisman, from the Rev. F. D. Horner; Mr. Thurston being 2d, with Adonis. Lady Hardwicke, Bessie, Lord Denman, and Duchess of Sutherland also took prizes.

Premier Rectified Tulips.—The premier feathered Tulip was a seedling shown by Mr. D. Woolley, a well-marked byblœmen in the way of John Hart, and probably one of Mr. W. Dymock's seedlings. The premier flamed Tulip was bizarre Sir Joseph Paxton, in the Rev. F. D. Horner's winning stand of twelve blooms.

Breeder Tulips.—These very attractive self-coloured and shaded flowers were as usual in strong force; and they may be said to range in colour from the dark, almost black mahogany of the bizarre breeders to the pale silvery-mauve and grey of the byblœmen class. It may be stated that when a breeder Tulip rectifies or breaks into character the breeder colour does not take a new form, but is lifted off altogether and an entirely new dress appears. On this occasion S. Barlow, Esq., one of whose strong points is the breeder class, was unable to show to any extent, his flowers not being yet in general bloom.

Six Breeders.—In this class five stands competed, the Rev. F. D. Horner being 1st, with bizarres, Ariosto and Sir J. Paxton; roses, Miss Burdett Coutts and Thomas Parker; byblœmens, Alice Grey and Glory of Stakehill; 2d, Mr. J. H. Wood, with bizarres. William Lea and Horatio; roses, Mabel and Industry; byblœmens, Alice Grey and Boardman's No. 1, which was regarded as identical with Mrs. Cooper.

Three Blooms.—For these twelve stands competed, and the Rev. F. D. Horner was again 1st with bizarre, Sir J. Paxton; rose, Thomas Parker; and byblœmen, Alice Grey. 2d, Mr. R Woolfenden, with bizarre, William Lea; rose, Pretty Jane; and byblœmen, Alice Grey.

Miscellaneous.—As is usual, a large number of breeders was staged in the classes. The best bizarre breeder was Lea's No. 2, from Mr. Woolfenden; Mr. Prescott being 2d with Sulphur. Some good seedlings were shown by Messrs. Woolley and Thurston. Mr. Thurston had the best rose breeder in Lord Derby, very fine; Mr. Woolley being 2d with Mabel. Seedling C. Grosvenor, Industry, and Miss B. Coutts, were also well shown. The Rev. F. D. Horner had the best bylœmen breeder in Beauty of Litchurch, Mr. Woolfenden being 2d with Alice Grey.

Premier Breeder.—This was bizarre William Lea, shown by Mr. R. Woolfenden in his 2d prize three blooms.

The Hardy Fruit Garden.

General Work.—The chief operation in this department for the present is vigilance in looking sharply after aphides, which are very troublesome during June. Apply the remedies previously advised; and examine the young shoots of Apricots frequently for the maggot, keeping the latter in check by pinching and removal of the points. Continue to examine the Gooseberry bushes for the Gooseberry caterpillar; these put in an appearance here some few days since. Shaking the bushes sharply and smashing the fallen insects, aided by hand-picking, are the surest means of ridding the bushes. The fruits of these will soon be large enough for bottling purposes, Warrington being the most suitable, and of which a larger proportion of bushes should be grown than of other varieties, it being also one of the best for dessert purposes. I find the large Lancashire varieties the most suitable for early supply and for culinary purposes. In many districts Currants, as soon as they attain any size, are taken by the birds, and when this is the case the trees should be immediately netted over. The disbudding of Peaches and Nectarines should now be almost completed, the fruit also should receive another thinning, and, where well advanced, a final one. Owing to the heavy rainfall experienced of late, but little in the way of watering will require to be done. Still, continue to have the soil stirred with the Dutch hoe, especially amongst bush fruit in the quarters, and on borders that have not been mulched. *E. Ward, Hewell, Bromsgrove.*

The Kitchen Garden.

Celery Planting.—The planting out of Celery from this time onwards will need attention, and should be proceeded with at intervals, as the plants become ready. The main crop for the season should be prepared for putting out into trenches from the middle to the end of the month; planting after that date should be limited and should depend on the special requirements of the place. If the trenches have already been thrown out, the manure can be dug in as the planting proceeds. Fine soil is essential for earthing up with, so that where the staple is not satisfactory, means should be used to render it so, by frequent forkings, &c., or if necessary, by additional soil. Before planting, remove any outer leaves that are small and deformed, also any suckers that have made their appearance, and transplant carefully, with a good ball of earth attached, giving sufficient water to thoroughly settle the plants in their places.

General Work.—Prick out from the seed beds on to other borders, the needful quantities of winter stuffs, such as Kale, Savoys, and Broccoli, and continue to plant out in the quarters some more Brussels Sprouts, also a good breadth of Snow's Broccoli for late autumn use. Keep the Dutch hoe constantly at work betwixt growing crops, and earth-up advancing ones of Cauliflower, Cabbage, &c. Give water when required in the evening to all freshly planted subjects. Lettuces, Radishes, and all kinds of salading require frequent and copious waterings in dry weather.

Mushroom Beds.—The temperature of the Mushroom-house must now be kept as low as possible, damping the walls, paths, &c., night and morning, and ventilating abundantly especially on warm moist nights, when all doors, windows, &c., may be allowed to remain open. *John Austen, Witley Court.*

Law Notes.

MRS. FLORA CAMPBELL *v.* THE CALEDONIAN RAILWAY COMPANY.

As already reported (see p. 652) this case was heard before the arbiters, who issued proposed findings, and at the instance of the procurators of both parties a day was fixed for debate before the final findings were pronounced. The only alteration in the award was in an item for "loss and damage during building operations," which was reduced £6 10*s*., making the full compensation awarded £643 16*s*. instead of £650 6*s*., as in the proposed findings, which thus became the final decision of the Court of Arbiters. One item there was a long and interesting debate upon—as to the loss of water from a well, drained through the cutting operations of the contractor for the railway. It appears from instances on record that if the owner of a portion of ground, be it little or be it big, has his water cut away from him by a neighbouring proprietor who may sink a well in his grounds, say, at a lower level, and cut his neighbours supply right away, the party aggrieved has no case against his neighbour. In the case, however, in question, Professor Robertson held that the Caledonian Railway Company, not only in so far as their statutory powers were concerned, but in cutting through the centre of the tenant's occupancy, were not in a position to be relieved from consequential damage in the course of their operations, and that the damages therefore fixed by the arbiters must be included in the general compensation.

The parties engaged in giving evidence in the case were:—For the claimant, Mr. Jamieson, market gardener, Rothesay, and Mr. M. Campbell, market gardener, High Blantyre; for the Caledonian Railway Company, Mr. John Lamont, nurseryman, Edinburgh, and Mr. James Pinkerton, Bazaar, Glasgow. The agents for the claimant and the Railway Company respectively were Mr. R. B. Shearer, Greenock, and Mr. H. B. Neaves, Glasgow; and the clerk in the reference was Mr. John Leiper Gammill, Glasgow.

Obituary.

Archibald McIntyre, late Superintendent, Victoria Park, London, whose death on the 4th inst., in his fifty-ninth year, is announced, was born October 19, 1828, at Netherby, near Carlisle. His father was then gardener to the late Mr. Hodgson, Clerk of the Peace. At an early age his father removed to Warwick Bridge, the seat of the late P. Dixon, Esq., where young McIntyre served an apprenticeship to him. From that time he was for a period with Messrs. Little & Ballantyne, well known nurserymen in Carlisle. From there he went southwards, and for a couple of years worked as second in command with Mr. Burns, then with the Marquis of Aylesbury. Mr. McIntyre was then appointed from the above position to that of Head Gardener to the Earl of Clare, of Mount Shannon, near Limerick, where he remained nearly eleven years, or until the death of the Earl. Mr. McIntyre then came to London, and for a time was outdoor foreman in the Royal Gardens, Kew, where he acquired a good practical knowledge of Conifers—a circumstance which doubtless led to his subsequent appointment at Pampisford, Cambridge-

shire, the seat of the late W. Parker Hamond, Esq., which he transformed from a rough meadow to a place of beauty, and where he took a prominent part in getting together and planting the magnificent collections of Conifers for which that place is famous, We next find Mr. McIntyre occupying the position of Superintendent of Victoria and Greenwich Parks—a post he held for about thirteen years, and from which, through ill-health, he was compelled to retire. Mr. McIntyre's doings in this last position are well known to the gardening world as eminently successful.

THE WEATHER.

THE PAST WEEK.

The following summary record of the weather for the week ending June 6, is furnished from the Meteorological Office:—

"The *weather* continued cloudy or dull generally during the earlier part of the period, with some rain at most of the English and Irish stations, but drier conditions in Scotland. During June 2 and 3 the rainfall in most parts of England was heavy and continuous; at Lutterworth snow fell during the early hours of the latter day. As the week drew towards the close the weather in England improved considerably, while in Scotland it became unsettled and showery.

"The *temperature* has been 1° above the mean in 'England, S.,' and about equal to its normal value in the south of Ireland, the north and west of Scotland, and in the east of England, but in all other districts it has continued below, the deficit ranging from 1° to 2°. The highest of the maxima, which were generally recorded either on the 5th or 6th, varied from 65° in the 'Channel Islands' to 73° in 'England, N.E.,' and 76° in 'Ireland, N.' The lowest of the minima, which were registered on irregular dates, varied from 33° in 'Scotland, E.,' 34° in 'England, N.W.,' and 35° in 'Scotland, W.,' to 43° in 'England, E.,' and 'England, S.,' and to 47° in the 'Channel Islands.'

"The *rainfall* has been more than the mean over central, south and north-west of England, as well as in the 'Channel Islands,' but less in all other districts.

"*Bright sunshine* shows an increase on that recorded last week over England, but a decrease at most of the Irish and Scotch stations; it has still been very deficient generally, the percentage of the possible amount of duration ranging from 16° in 'Scotland, N.,' and 17° in the 'Midland Counties,' to 35° in the 'Channel Islands,' 36 in 'England, N.W.,' and 39° in 'Scotland, E.'"

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 32° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature.			Accumulated.	
	Above or below the Mean for the week ending June 6	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 4, 1887.	Below 42° difference from Mean since Jan. 4, 1887.
Principal Wheat-producing Districts.		Day-deg.	Day-deg.	Day-deg.	Day-deg.
0. Scotland, N. ...	0 (aver.)	59	0	+ 59	+ 39
1. Scotland, E. ...	1 below	65	0	+ 57	+ 42
2. England, N.E. ...	2 below	64	0	— 64	+ 82
3. England, E. ...	0 (aver.)	92	0	— 143	+ 168
4. Midland Cos. ...	2 below	82	0	— 139	+ 166
5. England, S. ...	1 below	90	0	— 138	+ 151
Principal Grazing, &c., Districts.					
6. Scotland, W. ...	0 (aver.)	76	0	— 2	+ 47
7. England, N.W. ...	1 below	78	0	— 99	+ 118
8. England, S.W. ...	1 below	90	0	— 105	+ 172
9. Ireland, N. ...	1 above	92	0	+ 28	+ 23
10. Ireland, S. ...	0 (aver.)	90	0	— 10	+ 97
— Channel Islands	1 below	95	0	— 175	+ 177

Districts.	Rainfall.			Bright Sunshine.	
	More or less than the Mean for the Week.	No. of Rainy Days since Jan. 4, 1887.	Total Fall since Jan. 4, 1887.	Percentage of possible duration for the Week.	Percentage of possible Duration since Jan. 4, 1887.
Principal Wheat-producing Districts.	Tenths of Inch.		Ins.		
0. Scotland, N. ...	3 less	91	16.2	16	22
1. Scotland, E. ...	2 less	70	8.6	39	32
2. England, N.E. ...	3 less	69	6.5	28	29
3. England, E. ...	1 less	66	7.3	33	34
4. Midland Cos. ...	3 more	64	8.0	17	29
5. England, S. ...	6 more	64	8.1	24	32
Principal Grazing, &c., Districts.					
6. Scotland, W. ...	1 less	74	14.9	22	32
7. England, N.W. ...	2 more	62	9.7	36	33
8. England, S.W. ...	1 less	66	8.9	20	39
9. Ireland, N. ...	2 less	72	11.2	27	33
10. Ireland, S. ...	1 less	64	10.8	23	40
— Channel Islands	2 more	75	8.3	35	45

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING JUNE 18. (AVERAGE OF THIRTY-THREE YEARS.)

June 12	60°.4	June 16	60°.9
„ 13	60°.5	„ 17	61°.1
„ 14	60°.6	„ 18	61°.2
„ 15	60°.7	Mean for the week ...	60°.8

NOTICES TO CORRESPONDENTS.

Appointment: *E. C.* Many thanks; there is no vacancy.

Beetle Poison: *T. C.* This shall be tried and reported on.

Berlin: *E.* The word "nominated" was correctly used; it does not necessarily mean "appointed."

Campanula Van Houttei ×: *B.* This is a hybrid raised by the late Dr. Rodigas, between C. nobilis and C. macrantha. Owing to the way in which the name is written, and the usual absence of all indication of its hybrid character, this plant occasions much labour in vain and loss of time in searching through botanical lists. Such names should never be written without the sign of hybridity (×). Better still would it have been to have said and written simply Campanula, Van Houtte.

Correction.—At p. 732, middle column, for "British Temple," read British Tempe.

Cucumber Plants: *Z.* Your plants have the too common Cucumber disease. Clear out; plant anew, using other soil, and manure from a fresh source.—*Old Subscriber.* The rotting of the fruits points to something being wrong at the root, probably due to too much or too little heat. You give no particulars of management, so we can but guess.

Grapes: *Inquirer.* Shanking of the berries has begun. You can do but little now, as it is more a root trouble than anything else. Do not overcrop, or rob the Vines of much of their foliage. If the roots are at a great depth from the surface, take off the soil almost down to them, so that the sun-heat may reach the lower stratum of the border; the superincumbent mass of soil does no good whatever, and keeps the roots in a cold medium.

Gloxinias: *O. & M.* Your flowers are evidently taken from robust plants, but were in such a bruised state on arrival, that no opinion as to their merits can be formed.

Lily of Valley from Kentish Town: *P. M.* Very good flowers and foliage for any part of either town or country.

Manchester Show (Addendum).—Messrs. W. Wood and Son's special award of a Silver Medal "for the best dish of Strawberries" at the above show last week was made to Mr. Chuck, gardener to P. Thelluson, Esq., Brodsworth Hall, Doncaster.

Melon Plants out of Health: *T. L.* We cannot explain the sudden loss of vigour in the tips of the young Melon plants. There is no fungus or "disease"; the arrest of vigour is caused by something amiss in the mode of culture. Without being on the spot we can offer no better explanation.

Names of Fruits: *A. B.* It is not possible to determine, with any certainty, the name of an Apple at this time of year. Send your fruit again next autumn.

Names of Plants: *Andrew Warne.* Hedera Rœgneriana.—*W. Green.* 1, Dendrobium calceolus; 2, D. Paxtoni.—*Amateur.* The specimens were all withered. 1, Perhaps the Douglas Fir; 2, Abies nobilis; others not recognisable.—*H. G.* Candollea cuneiformis.—*A. G.* Frond of a seedling Aspidium falcatum.—*W. L.* 1, Exochorda grandiflora; 2, Staphylea pinnata, the Bladder-nut.—*M. O. M.* We cannot undertake to name florists' forms of plants.—*D. E.* 1, Prunus Padus; 2, Spiræa Thunbergi; 3. S. prunifolia, fl.-pl.; 4, one of the numerous forms of the very variable Berberis vulgaris.

Narcissus: *A. Wallace.* The specimens sent are those of N. poeticus recurvus; N. p. patellaris has large flat-cupped flowers, and is earlier in blooming.

Orchids: *Leek.* You should apply to some importer. We have forwarded your letter to one.

Pæonies: *F. M.* Mr. Baker's monograph is contained in our volumes for 1884, vols. xxi. and xxii.

Pelargoniums: *W. Cutbush & Son.* The Pelargoniums sent with the Lily from Rangemore had no disease, but were in feeble health, owing, probably to faulty culture.

Polyanthus: *W. H.* Jack-in-the-Green. Very good samples. We should be glad if you can spare us one root.

Primula reticulata: *W. B.* Many thanks. Do not trouble about it.

Prolified Rose: *A. E. T.* Your Rose is prolified—that is, the centre of the flower, instead of stopping short, has gone on growing in an irregular manner. We cannot tell the reason. Thanks for the offer of the photograph, of which, however, we could make no use. Send it to an agricultural journal.

Roses for Climbing: *Market Gardener.* Other than those you already have are Gloire de Dijon, fawn (there is also a pink form of this); Catherine Mermet, pink; Niphetos, white (fine in bud); Brennus, red; Souvenir de la Malmaison, cream; Cloth of Gold; Madame Berard; Blairei No. 2; Lamarque; and climbing Victor Verdier.

Sarracenia: *Miss O.* S. crispata is a variety of S. flava. See *Gard. Chron.*, 1881, vol. xv., p. 816.

Strawberries Bitten Off during the Night: *B. J.* Probably the work of mice; set traps or use poison.

Tame Rose: Please send us your address.

Communications Received.—O.—T. Ito.—C. W. D.—J. B.—C. T. D.—J. H. F.—Robertson Munro (too late for insertion).—D., Kew.—J. G. B.—W. G. S.—W. M. B.—H. W. W.—M. Koster & Sons.—J. R. J.—W. J. M.—J. B.—G. N.—W. W.—R. T.—E. J. J.—T. B.—A. D. & S.—G. S.—O. T. (with thanks).—R. D.—P. Pascoe.—T. C.—C. T. D.—M. J. D.—C. van Geert.—F. S.—J. B.—C. M. O.—W. H.—C. W. F.

MARKETS.

COVENT GARDEN, June 9.

Business somewhat more brisk, last week's prices being well maintained, with the exception of Peaches, which are reaching us in excess of the demand. *James Webber, Wholesale Apple Market.*

Fruit.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Apple, ½-sieve	4 0– 6 0	Melons, each ...	1 6– 3 0
— Nova Scotia, brl.	8 0–12 0	Peaches, dozen ...	4 0–12 0
Grapes, per lb. ...	3 0– 5 0	Pine-apples, Eng., lb.	1 0– 1 6
— Channel Isl., lb.	2 0– 3 0	— St. Michael. each	3 0– 8 0
Kent Cobs, 100 lb. ...	60 0– ...	Strawberries, per lb.	1 0– 3 6
Lemons, per case ...	12 0–21 0		

VEGETABLES—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, per doz...	4 0– ...	Lettuce, Cos., Fr., each	0 6– ...
Asparagus, French, per bundle... ...	2 0– 6 0	Mushrooms, punnet	1 6– 2 0
— English, per 100	5 0– ...	Mustard and Cress, punnet	0 4– ...
Beans, Kidney, lb. ...	2 0– ...	Onions, per bushel ...	4 0– ...
Beet, red, per dozen	1 0– 2 0	Parsley, per bunch...	0 6– ...
Carrots, per bunch...	0 6– ...	Peas, per quart ...	2 6– ...
Cauliflowers, spring, each	0 9– ...	Potatos, per cwt. ...	4 0– 5 0
Celery, per bundle ...	1 6– 2 0	,, kidney, per cwt.	4 0– 5 0
Cucumbers, each ...	0 6– 1 0	Rhubarb, per bundle	0 6– ...
Endive, per dozen ...	3 0– ...	Shallots, per lb. ...	0 3– ...
Green Mint, bunch...	0 4– ...	Spinach, per bushel...	2 0– ...
Herbs, per bunch ...	0 4– ...	Sprue, bundle ...	1 0– ...
Leeks, per bunch ...	0 3– ...	Tomatos, per lb. ...	1 6– ...
Lettuce, per dozen ...	1 6– 2 0	Turnips, new, bunch	0 4– ...

POTATOS.—Old samples very much advanced in price. Regents, 140*s.*; Magnums, 150*s.*; Champions, 100*s.* per ton. New, 16*s.* to 20*s.* per cwt.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz.	6 0–18 0	Fuchsias, doz. ...	4 0–12 0
Arum Lilies, dozen...	9 0–12 0	Hydrangeas, doz. ...	9 0–12 0
Azaleas, per dozen ...	18 0–30 0	Lilium longiflorum, per dozen	24 0–36 0
Cinerarias, per doz...	6 0– 9 0	Lily-of-Val., 12 pots	12 0–18 0
Cyperus, per dozen .	4 0–12 0	Lobelias, dozen ...	4 0– 6 0
Dracæna terminalis, per dozen	30 0–60 0	Marguerite Daisy, per dozen	6 0–12 0
— viridis, per doz.	9 0–24 0	Mignonette, doz. ...	6 0– 9 0
Erica, various, per dozen	18 0–30 0	Musk, per dozen ...	3 0– 6 0
Euonymus, in var., per dozen	6 0–18 0	Myrtles, per dozen...	6 0–12 0
Evergreens, in var., per dozen	6 0–24 0	Palms, in var., each	2 6–21 0
Fairy Roses, doz. ...	8 0–12 0	Pelargoniums, dozen	6 0–18 0
Ferns, in variety, per dozen	4 0–18 0	— scarlet, per doz.	4 0– 8 0
Ficus elastica, each .	1 6– 7 0	— Ivy-leaved, doz.	4 0– 6 0
Foliage plants, various, each	2 0–10 0	Rhodanthe, dozen ...	6 0– 9 0
		Roses, various, per dozen	18 0–30 0
		Spiræa, per dozen ...	9 0–12 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Abutilons, 12 bun ...	2 0– 4 0	Myosotis, 12 bun. ...	2 0– 6 0
Anemone, 12 bun. ...	2 0– 4 0	Narcissus, 12 bun. ...	1 0– 3 0
Arum Lilies, 12 blms.	3 0– 5 0	— double, 12 bun...	3 0– 6 0
Azaleas, 12 sprays ...	0 6– 0 9	Pansies, 12 bunches	2 0– 3 0
Bouvardias, per bun.	0 6– 1 0	Pelargoniums, 12 spr.	0 6– 1 0
Camellias, 12 blooms	1 0– 3 0	Primroses, 12 bun....	0 6– 1 0
Carnations, 12 blms.	0 9– 2 0	Primulas, double, 12 sprays	0 9– 1 0
Eucharis, per dozen	4 0– 6 0	Roses, Tea, per doz.	1 0– 2 0
Gardenias. 12 blooms	1 0– 3 0	— coloured, dozen.	2 0– 4 0
Heliotropes, 12 spr.	0 6– 1 0	— red, per dozen ...	1 6– 2 0
Jasmine, white, bun.	0 6– 0 9	— Saffrano, dozen...	1 0– 1 6
Lilac, 12 bunches ...	4 0– 8 0	Spiræa, 12 bunches..	6 0– 9 0
Lilies of the Valley, 12 sprays	0 6– 1 6	Stephanotis, 12 spr.	2 0– 4 0
— 12 bunches ...	6 0–12 0	Tropæolums, 12 bun.	1 0– 2 0
Lilium longiflorum, 12 blooms	3 0– 6 0	Tulips, 12 bunches ...	2 0– 4 0
Marguerites, per 12 bunches	3 0– 6 0	Tuberoses, 12 blms....	1 0– ...
Mignonette, 12 bun.	3 0– 6 0	Violets, 12 bunches...	0 4– 0 9
		Wallflowers, 12 bun.	3 0– 6 0

SEEDS.

LONDON: *June* 8.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., report to-day's market thinly attended, with scarcely any business doing. The sowing demand is of course now quite over, and no speculative buying worth mentioning has taken place. There is nothing fresh to be noted as regards Clover seeds. Holders of Hemp seed again demand rather more money. In Canary seed there is no change. Rape and Mustard sell at last week's moderate quotations. Blue Peas move off slowly on former terms.

CORN.

Averages.—Statement showing the average price of British corn, imperial measure, in the week ended June 4:—Wheat, 35*s.*; Barley, 23*s.* 9*d.*; Oats, 16*s.* 7*d.* For the corresponding week in 1886:—Wheat, 32*s.* 2*d.*; Barley, 24*s.* 5*d.*; Oats, 20*s.* 4*d.*

FRUIT AND VEGETABLES.

COLUMBIA (EAST LONDON): *June* 8.—Good supplies of vegetables, with a rather poor demand. The Potato trade steady. Quotations:—Cabbages, 2*s.* 6*d.* to 4*s.* 6*d.* per tally; Spinach, 1*s.* to 1*s.* 6*d.* per sieve; Cos Lettuces, 1*s.* 6*d.* to 2*s.* per score; Cabbage do., 8*d.* to 1*s.* do.; Greens, 2*s.* to 2*s.* 6*d.* per dozen bunches; spring Onions, 2*s.* to 2*s.* 6*d.* do.; Rhubarb, 1*s.* 6*d.* to 2*s.* per dozen bundles; Radishes, 6*d.* to 8*d.* do.; foreign (new Maltas), 5*s.* 6*d.* to 6*s.* per cwt.

STRATFORD: *June* 7.—There has been a good supply of all kinds of produce, and a fair trade was done at the undermentioned quotations:—Cabbages, 3*s.* to 4*s.* per tally; Greens, 2*s.* to 3*s.* per dozen bundles; Cauliflowers, 2*s.* to 2*s.* 6*d.* per dozen; Carrots, household, 45*s.* to 55*s.* per ton; Mangels, 12*s.* to 17*s.* do.; Onions, Dutch, 3*s.* to 3*s.* 6*d.* per bag; do., spring, 2*s.* per dozen bundles; Watercress, 6*d.* per dozen; Cucumbers, frame, 4*s.* to 4*s.* 6*d.* do.; do., Dutch, 1*s.* 9*d.* to 2*s.* do.; Lettuce, 10*d.* per score; Gooseberries, 4*s.* 6*d.* to 5*s.* 6*d.* per half-sieve.

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AMERICAN LAWN MOWERS.

AWARDED
HIGHEST PRIZE
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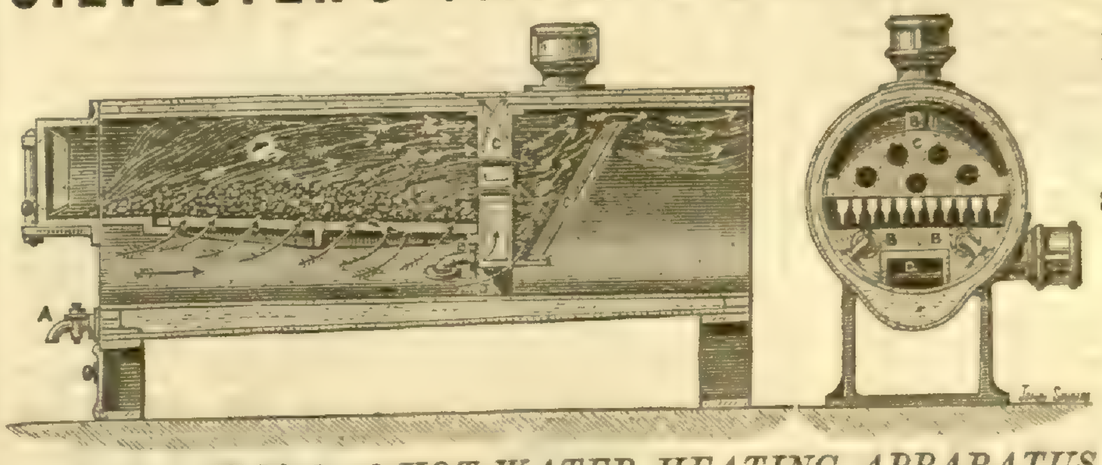

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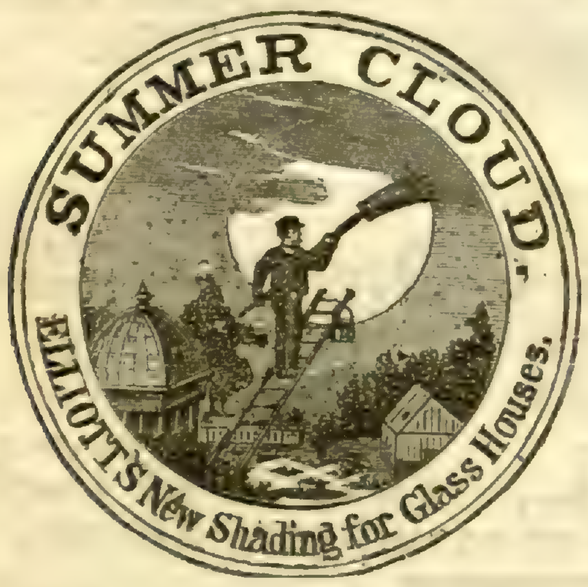

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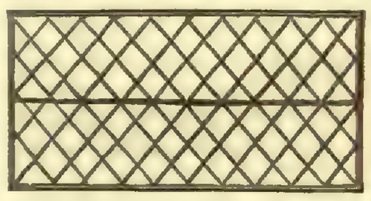

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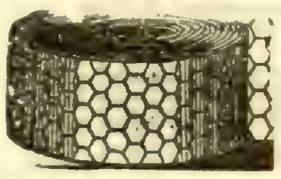

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3-in.	3	4	5	0	6	8	10	0
2-in.	4	6	6	9	9	0	13	6
1½-in.	6	6	9	9	13	0	19	6
1-in.	8	0	12	0	16	0	24	0

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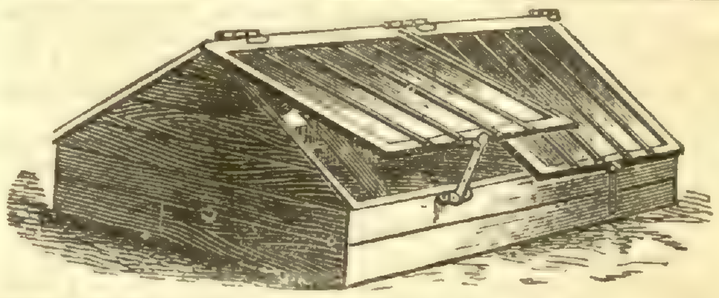

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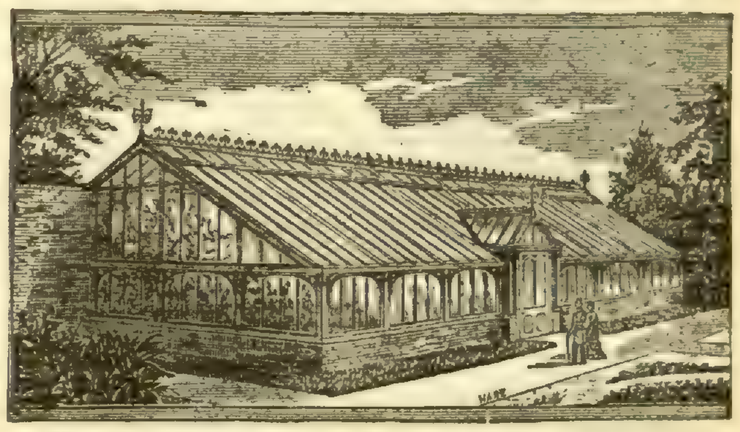

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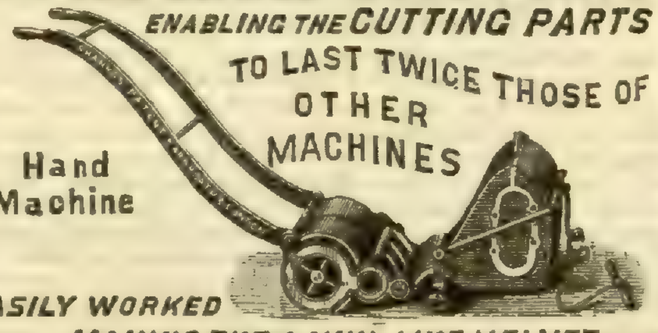

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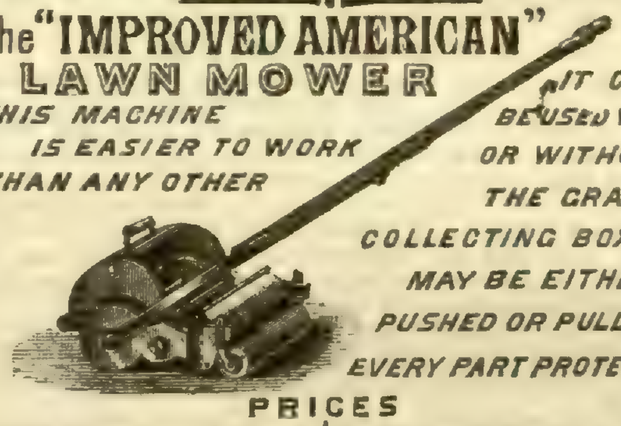

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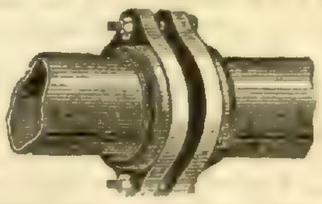

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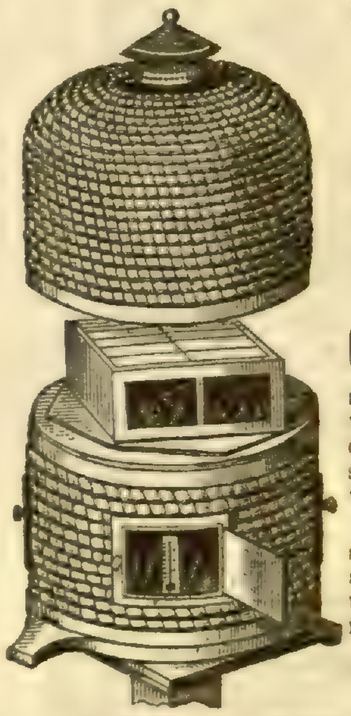

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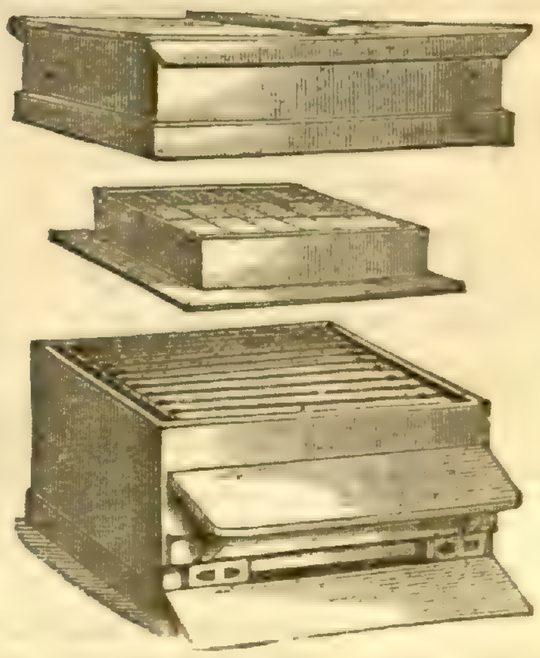

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8	„ ..	0	5	0	19	„ ..	0	10	6
9	„ ..	0	5	6	20	„ ..	0	11	0
10	„ ..	0	6	0	21	„ ..	0	11	6
11	„ ..	0	6	6	22	„ ..	0	12	0
12	„ ..	0	7	0	23	„ ..	0	12	6
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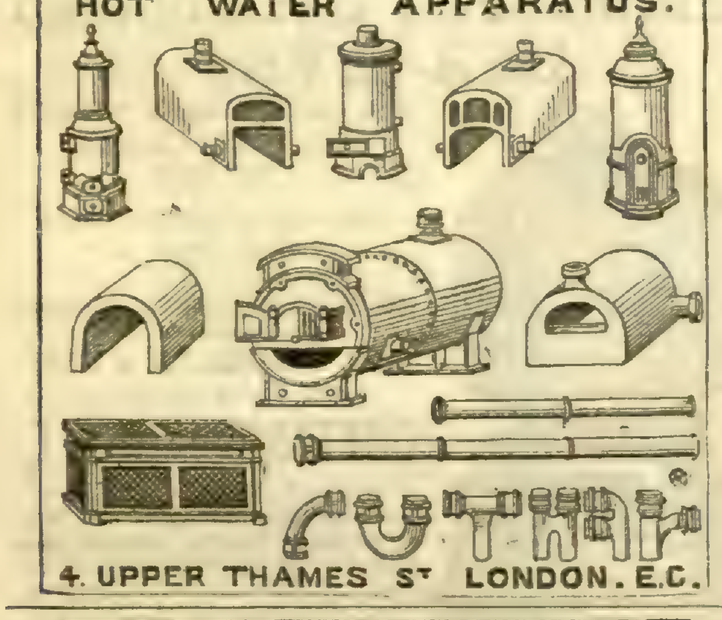

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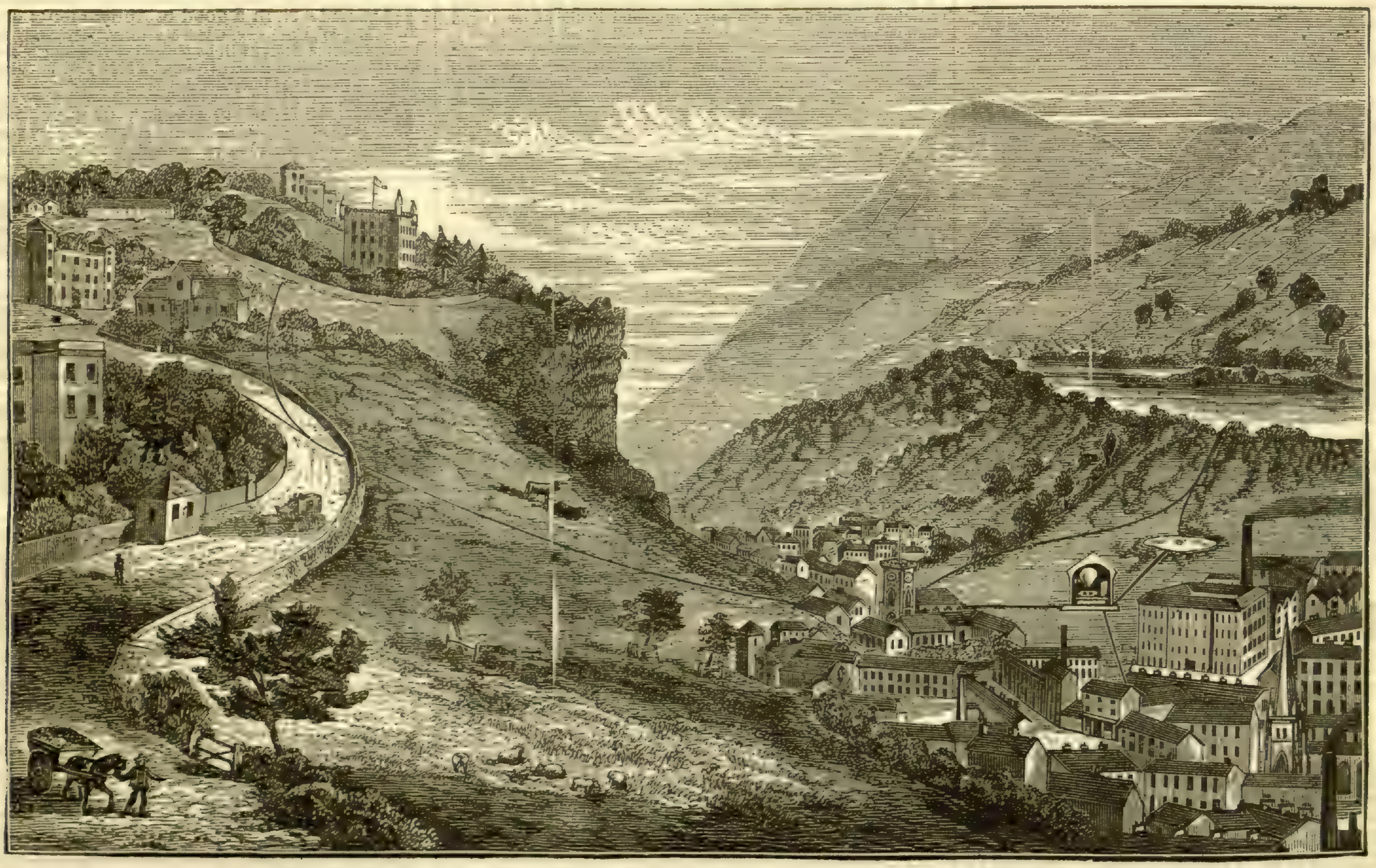

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VILLAGE WATER SUPPLY.

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Guide (Borough of Blackburn) Water Supply:—

Dear Sir,—Following is the short report I promised to send as to the work performed by the Hydraulic Rams supplied by you to the Blackburn Corporation, after they had been in operation sufficient time to take proper observations.

The district of Guide (population about 500), in the Borough of Blackburn, is situated above the highest reservoir of the Blackburn Waterworks, and had no regular water supply until last July, when the Water Committee caused two of your Patent Hydraulic Rams to be put down, and worked by water from a reservoir having a varying but maximum head of 34 feet 3 inches on the rams, the waste (clean) water gravitating to a lower adjacent reservoir.

You contracted to supply rams which would force 8000 gallons per day each through 1295 yards of delivery pipe to a service tank 170 feet above the rams, and I am bound to state that the result has considerably exceeded my expectations, as the rams are capable of pumping, and have pumped, much more water than you promised. The percentage of efficiency exceeds all I expected, and is, in my opinion, much more than is usually obtained from hydraulic rams.

From a test I made on September 29, I found that two rams with ¼-inch and ⅜-inch strokes respectively, supplied with 194,030 gallons per day, together pumped 26,090 gallons per day to a height of 170 feet, giving 71·43 per cent. of efficiency, and one ram working at ⅜-inch stroke, and with only 16 feet of working fall supplied with 154,587 gallons per day, pumped 10,587 gallons per day to the same height, showing 72·75 per cent. of efficiency.

At a subsequent test on October 11, one ram at ⅜-inch stroke, and having 31 feet 9 inches of working fall supplied with 121,083 gallons per day, pumped 17,583 gallons per day to an elevation of 171¼ feet. The efficiency in this case being 79·57 per cent.

In arriving at these results the greatest care was taken to positively measure the water besides having a meter check on feed and delivery pipes.

The work carried out by you at Blackburn is substantial and satisfactory in every way, and if any engineer wishes to make his own observations he is at liberty to come here and do so.

From Mr. HENRY ROBINSON, Engineer to the Stockport District Waterworks Company, September 8, 1883:—

Dear Sir,—I can now report well of the two Hydraulic Rams we have fixed to your instructions for the supply of Disley Village; 40,000 gallons per day was the quantity you promised they would force to a height of 68 feet, but on testing them I am convinced that 50,000 gallons is not the limit of their power, whilst the quantity of waste water used in driving them is not equal to half the capacity of the 6-inch pipe by which they are fed, and I am inclined to the belief that a more simple and efficient pump cannot be found.

JOHN BLAKE, ENGINEER, ACCRINGTON, LANCASHIRE.

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CONTENTS.

Apple bloom	812
Asphodelus comosus ...	799
Book—	
Ancient Cities of the New World	809
Bouquet for the Queen, a	809
Chiswick, work done at .	806
Cœlogyne Foerstermanni	798
Colonial notes	805
Covent Garden prices ...	810
Cultural Memoranda ...	803
Disa grandiflora, fertilisation of	802
Era of progress, an ...	806
Florists' flowers	802
Gardeners' Orphan Fund	797
Gardening appointments	823
Geaster coliformis ...	810
Hardy fruit garden, the .	816
Kew notes...	804
Kitchen garden, the ...	805
Lælia purpurata Lowiana	799
Obituary—	
Mr. F. R. Kinghorn ...	817
Odontoglossum crispum Veitchianum ...	798
,, Rossii Smeeanum...	799
Oncidium lucescens ...	799
Orchid collecting ...	811
,, notes	801
Phalænopsis alcicornis ...	799
Plants and their culture .	805
Polemoniums	800
Potato culture	812
Primula imperialis ...	811
,, reticulata	803
Rating of nurseries ...	809
Roses	800
,, new	810
Societies ...	
Royal Botanic	813
Royal Horticultural ...	812
York Gala	814
Strawberries at Twickenham	802
Trees and shrubs... ...	804
Tulip season, a late ...	812
Weather, the	816

ILLUSTRATIONS.

Agave Victoriæ Reginæ...	807
Balmoral Castle	811
Cedrus Deodara planted by the Queen at Windsor ...	802
Geaster coliformis...	810
Odontoglossum crispum Veitchianum	799
Victoria Regia at Cherkley Court	815
,, ,, leaf	708
Windsor	803

NOTICE TO SUBSCRIBERS.—All Numbers of the "Gardeners' Chronicle" from January 1 of this year are still to be had.

CRYSTAL PALACE.
GREAT ROSE SHOW of SEASON.
SATURDAY, July 9. Postponed from July 2.
For Schedules and Entry Forms apply to
Mr. W. G. HEAD, Garden Superintendent, Crystal Palace, S.E.

ALEXANDRA PALACE,
London, N.
GREAT ROSE SHOW, JULY 14, 15, and 16. Entries Close July 7, 1887. For Schedules and full particulars, apply to J. S. COOKE, Secretary of the Show, Alexandra Palace, N.

BRIGHTON and SUSSEX FLORICULTURAL and HORTICULTURAL ASSOCIATION.
GRAND SUMMER EXHIBITION, JULY 6 and 7, at the Royal Pavilion. 1st prize for 10 Stove and Greenhouse Plants, £10. 1st prize for 8 Orchids, £5. 1st prize for 12 Foliaged Plants, £5. 1st prize for 48 Roses, £5. 1st prize for Collection of Fruit, £5. Schedules of prizes ready.
EDWARD CARPENTER, Secretary.
Secretary's Office: 96, St. James' Street,
Brighton, March 28, 1887.

MALVERN ASSEMBLY ROOMS
and Pleasure Gardens.
A GRAND ROSE SHOW will be held in the above Gardens on THURSDAY, July 7, 1887. Open to all England, for Nurserymen and Amateurs. Gardens Open at 2 o'Clock P.M. For Schedules and particulars apply to
EDWARD HARLEY, Manager and Secretary.

GRAND ROSE SHOW, BATH,
THURSDAY, July 7.

First Prizes, Nurserymen,	72 varieties	...	£8 8 0
,, ,,	36 ,,	...	4 0 0
,, Amateurs	36 ,,	...	5 0 0
,, ,,	24 ,,	...	3 0 0

The 2nd and 3rd Prizes in proportion.
Several other Classes for Roses, Bouquets, Strawberries, and Plants—30 Classes in all. Entries Close July 2. For Prize Schedules apply to
BENJAMIN PEARSON, Secretary, 14, Milsom Street, Bath.

SALTERHEBBLE ROSE SHOW, JULY 21.
INCREASED LIST of PRIZES. For Schedules, &c., apply, ARTHUR M. BEECROFT, Sec., 8, Heath Lane, Halifax.

SHROPSHIRE HORTICULTURAL SOCIETY.
SUMMER SHOW (open to all), AUGUST 17 and 18. Twenty Plants, £25, £20, £15. Collection of Fruit, £10, £6, £3. For Grapes, £44. Collection of Vegetables, 8 sorts, £5, £3, £2, £1. Schedules and full particulars from
Messrs. ADNITT AND NAUNTON, Shrewsbury, Hon. Secs.

CHEAP PICEA NORDMANNIANA, 1½ to 2 feet, 10s. per dozen; 2 to 2½ feet, 15s. per dozen; 2½ to 3 feet, 24s. per dozen; 3 to 3½ feet, 30s. per dozen. All EVERGREENS and FRUIT TREES cheap; CURRANTS and GOOSEBERRIES from 7s. 6d. per 100. 25 per cent. discount allowed for cash to clear. For LIST apply
T. L. MAYOS, Highfield Nurseries, Hereford.

SPHAGNUM MOSS for SALE at Grange Plantation. Apply,
JOHN MILLER, Overseer, Grange, Coldingham, Berwickshire, N.B.

A Few Large Healthy
PALMS, 3 to 5 feet high, for immediate disposal — Latania borbonica, Seaforthia elegans, Chamærops excelsa, and Phœnix reclinata—from 10s. per pair.
GARDENER, Holly Lodge, Stamford Hill, London, N.

KELWAY AND SON.
KELWAY'S "MODEL" CALCEOLARIA.
KELWAY'S "MODEL" CINERARIA.
Price of Seed on application.
Langport, Somerset.

VERBENAS—VERBENAS.—100,000, all strong, healthy, and well-rooted, in 4, 8, or 12 varieties, 6s. per 100, 50s. per 1000. Package free. Terms cash with all orders.
FLETCHER, SON AND CO., Florists, &c., Chesterfield.

FERNS.—Good Plants for potting on, of Pteris tremula, P. serrulata, and P. cretica major, at 15s. per 100. Write,
M. SMYTH, 18, White Horse Lane, Mile End, London, E.

SINGLE DAFFODILS.—We are now booking orders for the above, good sound flowering bulbs. Price on application. THOS. PIPER AND SON, Maresfield, Sussex.

PRESIDENT STRAWBERRY PLANTS.—Improved Stock. Plant now for a full crop next year. Free to stations on Great Eastern Railway, 30s. per 1000, 5s. per 100, until July 14. Post-office Orders payable to
A. MOSS AND SON, Chadwell Heath, Essex.

FIELD AND HEARSON'S NICOTYL VAPORISER. For the Destruction of Aphis, &c., WITHOUT SMOKE. CATALOGUE post-free.
BENJAMIN FIELD, F.R.B.S., 75A, Queen Victoria Street, E.C.; Depôt, Swan Place, Old Kent Road, S.E.

MISS JOLIFFE CARNATION.—Strong Plants, in small pots, well rooted, 25s. per 100; or would EXCHANGE for Large Plants of NIPHETOS ROSE.
J. SADDINGTON, Richmond, Surrey.

PEACHES! NECTARINES! GRAPES! &c.—Highest market prices guaranteed for really good and well packed fruit of above.—WISE AND RIDES, Covent Garden.

SQUELCH AND BARNHAM, North Row, Covent Garden, W.C., are OPEN TO DISPOSE OF any quantity of MUSCATS and BLACK GRAPES, TOMATOS, CUCUMBERS, FRENCH BEANS, STRAWBERRIES, CHOICE FLOWERS, &c. Highest Market Prices obtained. Account Sales daily; Cheques weekly or as preferred by Sender. Baskets and Labels supplied. References given.

MESSRS. GREGORY AND EVANS, NURSERYMEN, Sidcup, and 285, 286, 287, 288, Flower Market, Covent Garden, W.C., are open to RECEIVE CONSIGNMENTS of Choice CUT FLOWERS in any quantity for their Commission Department. Boxes and Labels supplied.
Telegraph Address—"COMMISSION, SIDCUP."

WANTED, Large PALMS, TREE FERNS, and other large ORNAMENTAL FOLIAGED PLANTS, in EXCHANGE for ORCHIDS or OTHER PLANTS. Send full particulars to
The LIVERPOOL HORTICULTURAL COMPANY (John Cowan), Limited, The Vineyard and Nurseries, Garston, Liverpool.

Splendid New Narcissus for 1886—7.
OAKSHOTT AND MILLARD
call special attention to the
NEW LARGE-FLOWERED PAPER-WHITE NARCISSUS,
A greatly improved form of the old paper-white, earlier, and with much larger flowers, and a grand acquisition for producing cut blooms at Christmas.
Orders now being booked, to be executed in rotation, 12s. 6d. per 100.
Also ROMAN HYACINTHS, 12s. 6d. and 15s. per 100; and other Forcing Bulbs at very moderate prices, as per LIST, gratis on application.
OAKSHOTT AND MILLARD,
Seedsmen to the Queen, Reading, Berks.

Rhododendrons.
JOHN WATERER AND SON'S EXHIBITION of these Plants is now on View Daily, at the Gardens of Cadogan Place, Sloane Street.
Admittance, One Shilling.

GRASS SEEDS.—Who would like to buy Grass Seeds from a Dutch Firm?
Address, "LAAD," Messrs. Nygh & Van Ditmar's General Advertising Offices, Amsterdam.

New Roses in Pots.
LIST of the most select sorts now ready,
Gratis and Post-free.
TEA and NOISETTE ROSES,
of best sorts only, in pots, in great quantity and of best quality.
SAMPLE DOZEN of really good Plants, in 5-inch pots, carefully packed for travelling, put on rail on receipt of 15s.
HALF a DOZEN ditto, on receipt of 8s.
EWING AND CO.,
Sea View Nurseries, Havant, Hampshire.

Begonias.
BOX'S JUBILEE VARIETIES, plants established in pots, will flower in July, dwarf habit, circular flowers, erect, equal to named sorts. Singles, 12 distinct colours, crimson, scarlet, red, rose, pink, white, salmon, flesh, orange, yellow, golden, purple, the dozen for 12s. Doubles, 6 colours, 2s. each. On rail London, packing free.
J. R. BOX (for last ten years J. Laing's sole partner), Nurseryman, Croydon.

PRIMULA, Double White, 5s. per dozen, 35s. per 100.
Price for quantities on application.
Terms cash with order.
TAYLOR AND CO., Nurserymen, Timperley, Cheshire.

PRIMULAS—PRIMULAS—PRIMULAS.—Eighteenth year of distribution. Williams' Superb Strain, 1s. 6d. per dozen; 10s. per 100. CINERARIAS, same price. Package and carriage free. Volonté Nationale alba, the best winter white PELARGONIUM, strong rooted plants 1s. each.
JOHN STEVENS, The Nurseries, Coventry.

HYPERICUM CHINENSE.—Good plants, set with buds, of this scarce and fine greenhouse St. John's Wort, 2s. 6d. to 5s. A very free-flowering species. See *Gardeners' Chronicle*, May 28. Trade supplied.
GILBERT DAVIDSON, Wernoleu, Ammanford, R.S.O., Carmarthenshire.

TO BE SOLD, a few Specimen FERNS, AZALEAS, and CAMELLIAS; also a quantity of SEDUM FLAVUM and ECHEVERIA. About 3500 pots and various other items. The highest offer will be accepted to clear.
Apply to GARDENER, Cumberland House, Henley, Surrey.

STRAWBERRIES for Forcing.—W. LOVEL & Son's descriptive LIST of prepared Runners may be had on application. Sample of plants and pamphlet on cultivation, post-free, 3d.—W. LOVEL AND SON, Strawberry Growers, Driffield.

To the Trade.
Sowing RAPE SEED and White MUSTARD SEED.
H. AND F. SHARPE have fine samples of the above-named Seeds suitable for sowing purposes, and will be pleased to submit them, with prices, on application.
Seed Growing Establishment, Wisbech.

SALES BY AUCTION.

Thursday Next.—(Sale No. 7434.)
CATTLEYA BOWRINGEANA.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, June 23, at half-past 12 o'Clock precisely, by order of Mr. F. Sander, a splendid importation of this superb new winter-flowering CATTLEYA, the plants well leaved, and in extra condition, with plump, sound, dormant eyes, and in most excellent order for establishing. Also a fine lot of

CŒLOGYNE SANDERIANA, *Rch. fs.*

This species produces as many as twenty blossoms on a spike, the individual flowers being larger than the well-known C. cristata, and of snowy whiteness. It is fully described by Professor Reichenbach in *Gardeners' Chronicle*, June 11, last page (764), when he states that this fine Cœlogyne will afford great pleasure to Orchidists. The discovery and introduction is a great success.

Fine healthy plants will be also offered of ODONTOGLOSSUM HARRYANUM, a magnificent new Orchid, one of the finest that Mr. Sander has ever been privileged to offer. Its blossoms are large, the colouring being indescribably rich and beautiful. It must be considered one of the grandest introductions of the century taking rank with the noble Vanda Sanderiana, being quite as sensational and in many points unique. For full description, see *Gardeners' Chronicle*, October 14, 1886, p. 486. A coloured drawing will be on view on day of Sale.

Fine importations of BRAZILIAN ORCHIDS will be offered, amongst others will be found the following, Cattleya velutina, C. Harrisonæ, Oncidium crispum, Sophronites coccinea, and other ORCHIDS.

On view morning of Sale, and Catalogues had.

Orchids in Flower.—Special Sale, June 28.

MESSRS. PROTHEROE AND MORRIS respectfully announce that their usual MONTHLY SPECIAL SALE of ORCHIDS in FLOWER and BUD will take place on TUESDAY, June 28, for which they will be glad to receive Notice of Entries not later than Wednesday next.

Friday Next.—Sobralia xantholeuca.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, June 24, at half-past 12 o'Clock precisely. It is one of the rarest of all Sobralias—certainly one of the most beautiful, its large showy yellow blossoms being deliciously fragrant. The plants offered, having arrived some weeks since, are now breaking freely. No collection should be without this lovely Orchid.

A splendid lot of the pretty blue-flowered VANDA CŒRULESCENS, a free-growing species, and very floriferous, as will be seen by the numerous flower-spikes; fine, healthy plants of VANDA DENISSONIANA, its large waxy-white flowers and lasting properties, making it a desirable and useful Orchid for exhibition, and other purposes; MILTONIA REGNELLII, BURLINGTONIA DECORA PICTA, ODONTOGLOSSUM HASTILABIUM, SACCOLABIUM GUTTATUM, and a splendid healthy lot of CHOICE ESTABLISHED ORCHIDS, chiefly in flower or bud.

The Sale will also include 25 plants of CATASETUM BUNGEROTHII from the Continent, and a small importation received direct of CATTLEYA LABIATA, many with 20 to 30 bulbs; 200 AMARYLLIS, &c.

On view morning of Sale, and Catalogues had.

Wednesday and Two Following Days.

IMPORTANT SALE of the WOODLAWN COLLECTION of VALUABLE PLANTS, comprising some of the most rare and finest specimens in the country. Also Eight well-built Plant-houses.

MESSRS. ARTINGSTALL AND HIND are favoured with instructions from Joseph Broome, Esq., who is leaving Woodlawn, situate at Fielden Park, Didsbury, near Manchester, to SELL by AUCTION, at 12 o'Clock noon, on WEDNESDAY, THURSDAY, and FRIDAY, June 22, 23, and 24, 1887, the whole of the exceptionally fine COLLECTION of PLANTS, and the greater portion of Plant-houses.

Catalogues may be obtained on application to Mr. ALFRED COLE, Head Gardener; or from the Auctioneers, 45, Princes Street, Manchester.

TO BE DISPOSED OF, as a going concern, a SMALL NURSERY, near Manchester, containing 3000 super. feet of Glass. Well Heated.
PELTENER AND STAGG, Victoria Market, Manchester.

FOR SALE, in consequence of Mr. Imrie's death, the old-established and well-known NURSERY BUSINESS so successfully carried on for upwards of sixty years at Ayr. The Grounds extend to about 40 Acres, adjoining the Railway Station, and are well stocked with saleable Trees and Shrubs. Further particulars on application to
IMRIE AND COMPANY, The Nurseries, Ayr, N.B.

In Bankruptcy.

To NURSERYMEN, SEEDSMEN, FLORISTS, and Others.

TO BE SOLD, as a going concern, the STOCK in TRADE of Mr. William Fisher, Nurseryman, Seedsman, and Florist, situate at Horninglow Cross, Burton-on-Trent. Satisfactory arrangements can be made with the Landlord as to tenancy. The Stock, which is young, is in good condition, and a very profitable business can be carried on.

Tenders for the same will be received either by ROBERT HARRISON, Accountant, High Street, Burton-on-Trent, or WILLIAM BENNETT, Accountant, Union Street, Burton-on-Trent, joint Trustees, and from whom further particulars may be obtained.

Tenders to be sent in by June 22, 1887.

To Florists.

TO BE LET, for the Culture and Exhibition of Flowers and Plants under Glass, an extensive area of LAND adjoining Kennington Park, in front of South Place and Newington Terrace.

Apply to Messrs. MEYNELL AND PEMBERTON, Solicitors, 20, Whitehall Place, S.W.; or, to Messrs. BRIANT AND SONS, Estate Agents, 200, Kennington Park Road, S.E.

RATING OF NURSERIES.

A PUBLIC MEETING of NURSERYMEN will be held, under the auspices of the Nursery and Seed Trade Association, Limited, on TUESDAY, 28th June, 1887, at the HORTICULTURAL CLUB, Henrietta Street, Covent Garden, W.C., (by kind permission of the Committee), to take into consideration the excessive Rating of Nurseries, and to agree on a combined course of action with a view to the Reduction of Assessments. The Chair will be taken by J. Wood Ingram, Esq., of the firm of Messrs. Wood & Ingram, The Nurseries, Huntingdon, at 6 P.M. Nurserymen will oblige by early intimating to the Secretary their intention to be present, and also by forwarding to him in strict confidence (if the amount of the assessment is in excess of the rent), either the Amounts of their Rents and Assessments, or the proportion which the difference between the Rent and the Assessment bears to the rent itself.

Mr. F. C. GOODCHILD, Secretary,
Nursery and Seed Trade Association.
25, Old Jewry, London, E.C.

PROTHEROE AND MORRIS, HORTICULTURAL MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

SPECIAL OFFER OF

TREE PÆONIES.

First-class Certificate Royal Horticultural Society, June 9, 1885.

These must not be confounded with the Chinese and French varieties offered by Nurserymen. I have 50 varieties in all, and the greater number unflowered novelties.

	Each—s.	d.
Purity, certificated, white	21	0
Snowball, certificated, pure-white, and very large, when first in flower resembles a ball of snow	21	0
Flag of Truce, very large flower, slightly stained with violet near the centre—a most massive & lovely variety	10	6
Princess Alexandra, very large flower, purple & white	10	6
The Red Prince, bright red, and very beautiful ...	7	6
Princess Beatrice, lovely white and rose, fine form...	7	6
Duchess of Albany, rose, striped red, very elegant ...	7	6
Truth, good, lovely pure white	10	6
Lilaceum, certificated, white, lilac centre	21	0
Lord Beaconsfield, purple and white, good form, and distinct	7	6
Fiery Cross, red, striped white	7	6
Spring, very large flowers, lilac and white	10	6
Prince Albert, good flower, red, striped white ...	7	6
White Venus, white, good variety	7	6
Eve, very large flower, white and purple...	10	6
Prince of Wales, red, striped white	7	6
Rifleman, very dark red	7	6

Collection of unflowered plants which are sure to contain, like the above, some startling flowers, 5*s.*, 7*s.* 6*d.* each, according to size of plant.

THE ABOVE ARE ALL GUARANTEED GOOD FLOWERING PLANTS, CERTAIN TO BLOOM WELL.

TREE PÆONIES (3 *First-class Certificates, Royal Horticultural Society*).—I have not endeavoured to give more than the leading colours of these, as the markings are so very peculiar and so charmingly interwoven are the many neutral shades and markings that I should be doing them an injustice were I to describe them; they must be seen to be admired. The flowers are immense. There is no doubt that many which were not in flower at the dates of the Horticultural Society's meetings possess even greater charms, and to those who are exhibitors these new Tree Pæonies will be a desirable acquisition. They are very beautiful specimens for the conservatory. In 1886 several were shown by F. G. Tautz, Esq., Goldhawk Road, Shepherd's Bush, who received a First-class Certificate for Purity and Lilaceum.

WM. GORDON,

PLANT IMPORTER, THE NURSERIES,
TWICKENHAM, MIDDLESEX.

Experienced Gardeners recommended.

The best ORCHID PEAT to be had, per sack, 5*s.* 6*d.*; in trucks in lots of 2 Tons and upwards, price on application.

FLETCHER, SON AND CO., FLORISTS, &c., Chesterfield, offer the following Plants:—

PANSIES—PANSIES.—Good strong well-rooted Plants, in all the leading Fancy and Show varieties, all true to name, just coming into flower: 100, in 50 varieties, 15*s.* per 100; £6 10*s.* per 1000. In 25 varieties, 12*s.*; £5 per 1000.

VIOLAS.—Good and well-rooted, in 12 or more varieties, 8*s.* per 100; £3 10*s.* per 1000.

PENTSTEMONS.—All the leading Scotch and Continental varieties, good and well-rooted, 12 varieties, 2*s.* 6*d.*; 16*s.* per 100.

SNAPDRAGONS.—Named, strong plants, named varieties, 2*s.* 6*d.* per dozen; 16*s.* per 100.

CERASTIUM TOMENTOSUM, 6*s.* per 100; 50*s.* per 1000.

VERBENAS.—Clean, healthy, well-rooted, in leading varieties, 6*s.* per 100; 50*s.* per 1000.

HELIOTROPES.—Light and dark, 6*s.* per 100; 50*s.* per 1000.

IRESINE HERBSTII and LINDENI, 6*s.* per 100; 50*s.* p. 1000.

AGERATUM, Cannell's Dwarf, 6*s.* per 100; 50*s.* per 1000.

MESEMBRYANTHEMUMS, cordifolium varieties, 6*s.* per 100; 50*s.* per 1000.

ALTERNANTHERAS—amœna latifolia, amœna spectabilis, paronychioides aurea, paronychioides major, amabilis, spathulata, magnifica, versicolor grandis, &c. Good, strong, well-rooted stuff, 6*s.* per 100; 50*s.* per 1000.

GERANIUMS.—Bronze McMahon, Black Douglas, and Beauty of Calderdale, 12*s.* per 100; £5 per 1000.
" Mrs. Pollock, 16*s.* per 100; £7 10*s.* per 1000.
" Silver Tricolor, Italia Unita, and Glen Eyre Beauty, 15*s.* per 100; £7 per 1000.
" Madame Vaucher and other whites, 10*s.* per 100.

CALCEOLARIA Golden Gem, all transplanted, good balls, 8*s.* per [100.

Please note the above Plants are nearly all from single pots, and cannot fail to give satisfaction, being clean, healthy, and well rooted. Package free. Terms strictly nett cash with all orders.

In Liquidation.

THE NEW PLANT AND BULB COMPANY, Colchester, will be glad to receive offers for their ENTIRE STOCKS of NARCISSI, PÆONIES (500 now coming into bloom), IRIS, a large collection; GLADIOLI, NERINES, JAPANESE MAPLES (1000), LILIES, &c. To be cleared as soon as ready. In one or more lots as convenient.

To the Trade.

10,000 ADIANTUM CUNEATUM, extra strong, in 60-size pots, good stuff for potting into 48's at once. Put free on rail, 20*s.* per 100, cash with order.
L. GOWER, Silverhill Nursery, St. Leonards.

EIGHTY THOUSAND CLEMATIS, in Pots, of all the finest Double and Single Varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12*s.* to 24*s.* per dozen, strong plants; extra strong plants repotted into 5½-inch pots, 2*s.* 6*d.* each. Descriptive LIST on application.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

CHEAP BEDDING PLANTS.

GERANIUMS, Zonal, strong autumn-struck plants, from single pots—Vesuvius (scarlet), Jean Sisley, Dazzler (crimson), Master Christine, Madame Vaucher, Happy Thought, 2*s.* per dozen, 12*s.* per 100; Miss Tottie Hardy (rosy-salmon), Queen of Pinks (magenta), Stour Valley Beauty (peach), 3*s.* per dozen.

PELARGONIUMS, show and decorative, named, fine plants, from single pots, 3*s.* per dozen.

LOBELIA (true), from cuttings, Emperor William, 2*s.* 6*d.* per 100, 20*s.* per 1000.

DAHLIAS, Single, named sorts, of all shades of brilliant colours, including White Queen and Paragon, 2*s.* 6*d.* per dozen, 18*s.* per 100, from single pots; Double, best named show varieties, 2*s.* 6*d.* per dozen, 18*s.* per 100, from single pots.

CHRYSANTHEMUMS, selection of finest named Show varieties, strong, and well-grown, 2*s.* 6*d.* per dozen, 18*s.* per 100, from single pots. Package free. Plants allowed for carriage.

Terms cash. CATALOGUE gratis.
H. I. HARDY, Stour Valley Florist Grounds, Bures, Suffolk.

ROSES IN POTS.

HYBRID PERPETUALS, all leading varieties, bushy plants for Bedding-out, 10*s.* 6*d.* per dozen, 75*s.* per 100.

CLIMBING ROSES, Maréchal Niel, Devoniensis, W. A. Richardson, and all most suitable varieties, strong plants with long shoots, 16*s.* per dozen.

NEW ROSES, Her Majesty, The Bride, Clara Cochet, American Beauty, W. F. Bennett, Ye Primrose Dame, and all best varieties of 1886-1887, 24*s.* to 30*s.* per dozen.

TEA-SCENTED ROSES, SINGLE ROSES, FAIRY ROSES, a complete collection.

LIST of Roses in Pots, Bedding Plants, &c., post-free.
GEO. COOLING AND SONS, The Nurseries, Bath.

BEGONIAS A SPECIALTY.—LAING'S BEGONIA TUBERS. Awarded Two Gold Medals. Unequalled quality. First-class Jubilee Gold Medal awarded to our unrivalled group of Begonias at the Manchester Great Exhibition; also 12 First-class Certificates. Named Singles, from 18*s.* to 42*s.* per dozen; unnamed Seedlings, for pots, 12*s.*, 18*s.*, and 21*s.* per doz.; bedding, selected, 9*s.* per dozen; bedding, choicest mixed colours, 6*s.* per dozen; choicest named Doubles, from 42*s.* per dozen; unnamed, very choice, 24*s.* and 30*s.* per dozen; choicest mixed, 18*s.* per dozen. CATALOGUES gratis.

JOHN LAING AND CO., Nurseries, Forest Hill, S.E.

"'SIR WATKIN' is the best and largest Narciss, also deliciously scented. Special prices also of 'Emperor' Narciss, and all other Flowering Bulbs on application."
JAS. DICKSON & SONS, "Newton" Nurseries, Chester.

15,000 TEA ROSES,

Consisting of the following and numerous other varieties,

All fine plants, in 5½ and 6 inch pots:—

MARÉCHAL NIEL	SOUVENIR DE PAUL NERON
PERLE DES JARDINS	ISABELLA SPRUNT
SAFRANO	MADAM BRAVY
REINE MARIE HENRIETTE	WALTHAM CLIMBER No. 2
COMTESSE DE NADAILLAC	SUNSET
SOUVENIR D'UN AMI	NIPHETOS
CATHERINE MERMET	GLOIRE DE DIJON
HOMÈRE	MADAME CUSINE
WALTHAM CLIMBER No. 1	THE PET
LADY MARY FITZWILLIAM	DUKE OF CONNAUGHT
W. A. RICHARDSON	ADAM
PERLE DE LYON	ALBA ROSEA
ETOILE DE LYON	GOUBAULT
MADAME LAMBARD	WALTHAM CLIMBER No. 3
DEVONIENSIS	CLIMBING DEVONIENSIS

12s., 15s., & 18s. per doz., according to size.

The Company believe their Tea Roses to be unsurpassed by any in the country: they are clean, healthy, and vigorous, and, should any purchaser be dissatisfied with them, they may be at once returned.

Price to the Trade on application.

LISTS, with full particulars, post-free, on application to

THE LIVERPOOL HORTICULTURAL CO.
(JOHN COWAN), Limited,
THE VINEYARD & NURSERIES,
GARSTON, NEAR LIVERPOOL.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

LONDON, *May*, 1887.

During the last season it was represented to the Committee of this Institution by many of the Subscribers that some steps should be taken for allowing the Horticulturists of England an opportunity of testifying the respect they owe to their Sovereign by marking this eventful year in some special manner.

After due consideration, the Committee came to the conclusion that the best plan of celebrating this interesting occasion would be by increasing the List of Pensioners, and making a Special Grant of £5 to each of the Pensioners, and also to each of the unsuccessful Candidates at the last Election.

This scheme met with general approval, and in January last the List of Pensioners was increased to 122 recipients, and the Committee trust to carry out the idea in its entirety by making the proposed Grant at the ensuing Anniversary Festival, to be held on 29th June next, on which occasion

BARON FERDINAND DE ROTHSCHILD, M.P.,

has most kindly consented to preside, when he hopes to be able to state that the wishes of the Members and the Committee have been realised, and that 133 poor and deserving Horticulturists will be permitted to participate in the general rejoicing that a Merciful and Gracious Providence has allowed Her Majesty to reign for the long period of fifty years.

To meet the expense thus entailed, the sum of £1200 is required, and several Noblemen and Gentlemen have already promised the sum of £250, providing the balance, £950, is attained by the 29th June, and, unless this sum is secured, the scheme will fall to the ground.

Under these *special circumstances*, the Committee take this opportunity of bringing the matter prominently before the Subscribers, feeling assured that those who take an interest in the Institution will second, to the best of their ability, the exertions of the Executive in their endeavours to alleviate the distress and minister to the comforts of old and deserving Gardeners.

To the affluent and generous lovers of Horticulture the Committee appeal with confidence, and to Gardeners they also appeal, in the hope that they will assist their poorer brethren.

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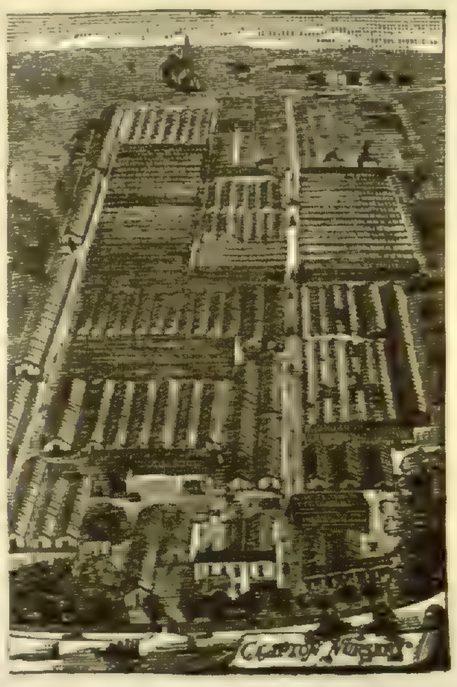

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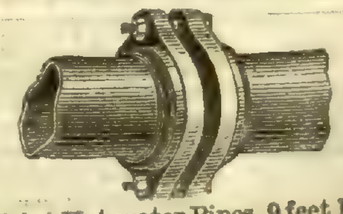

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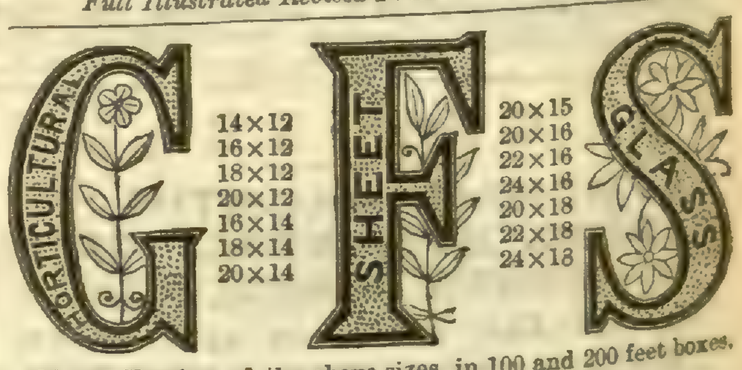

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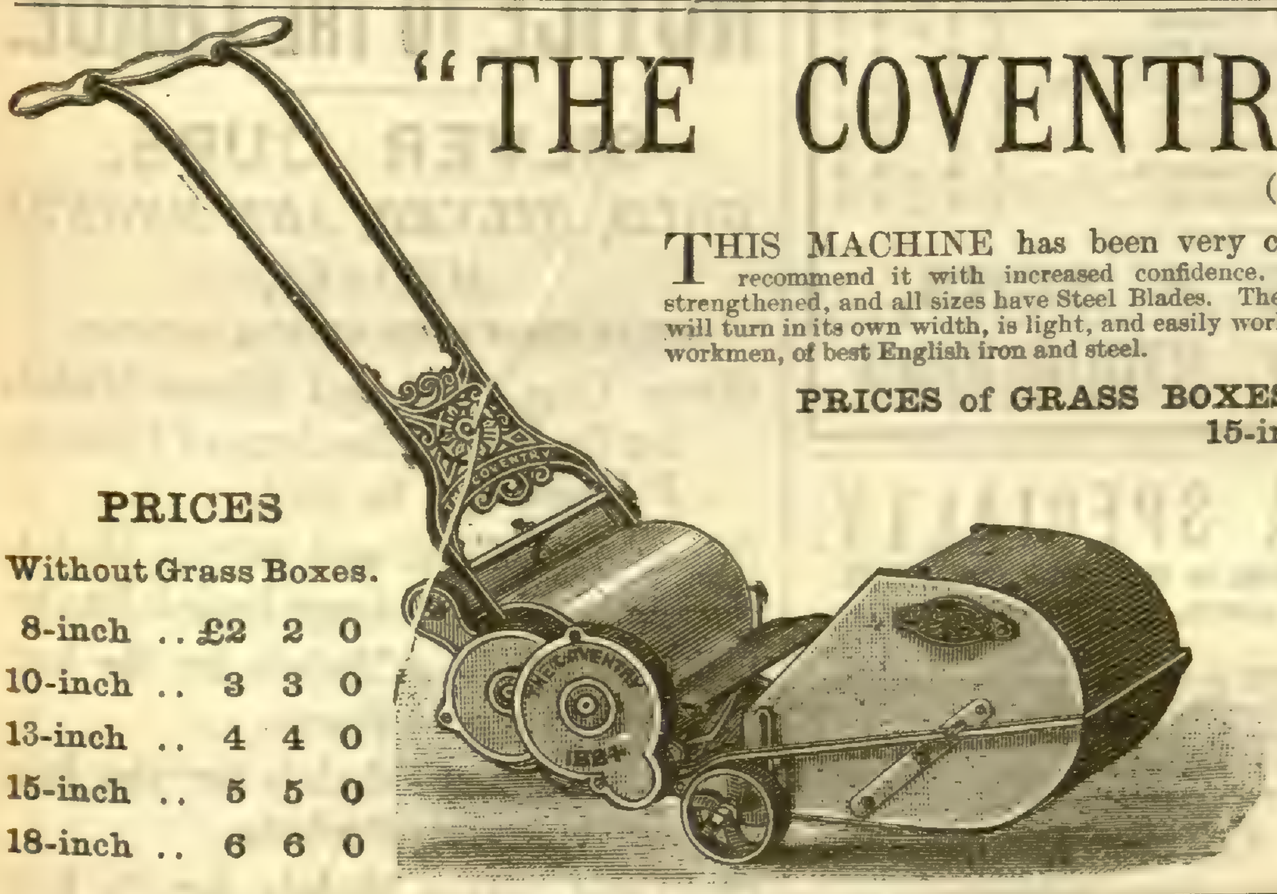

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"May 27, 1887." "C. M. HOVEY, Boston, U.S.A.

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"The Nicotine Soap I had from you I find a safe and powerful insecticide, being destructive of every kind of insect infesting plants, and in no instance has any injury been done to the foliage. At a strength of 3 oz. to a gallon of water, I have used it for syringing Peaches during growth for the destruction of red spider, without injury in any way (only to the insect!—which it instantly kills.) At that strength to 4 oz. to the gallon it may, with perfect safety, be employed for syringing every description of fruit tree, whether under glass or outdoor, and a majority of plants, without the least injury, whilst at the same time it destroys aphides—green, brown, blue, and black—thrips, and red spider. At a strength of 6 to 8 oz. to a gallon of water I have employed it very successfully for destroying mealy bug, brown and white scale, both by syringing the plants and applying with a brush, its effects making its application gratifying; whilst from its grateful smell it is pleasant than otherwise. At a strength of 8 oz. to the gallon it is a first-class winter dressing for fruit trees, mealy bug on Vines, as well as a destroyer and preventer of red spider, thrips, and aphides. It also destroys American blight."

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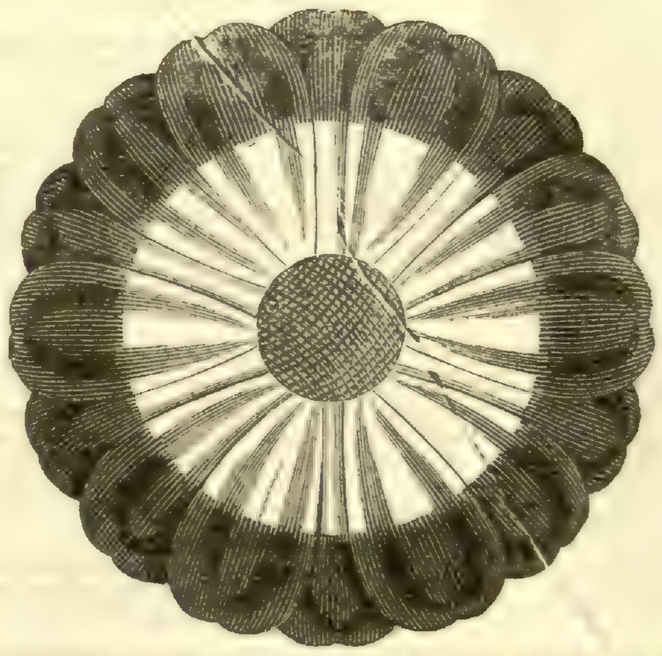

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Webbs' Rosy Morn Primula	2	6	,,	5	0
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Webbs' Exquisite (Mixed) Primula...	1	6	,,	2	6
Webbs' Superb Calceolaria	1	6	,,	2	6
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VARIETY ENTERTAINMENTS,

FLOWER SHOWS, GARDEN FETES, &c.

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GOLD, SILVER, AND BRONZE MEDALS,

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THE
Gardeners' Chronicle.
SATURDAY, JUNE 18, 1887.

THE GARDENERS' ORPHAN FUND.

OF all the ways in which it has been proposed to mark this present year, emphatically a year of grace, none are more excellent than those which have for their object the alleviation of helplessness, distress, or suffering. It would be out of place here to enlarge upon our duties one to another in this matter; indeed, any help given to the Gardeners' Royal Benevolent, or to the Gardeners' Orphan Fund, may be looked on as so much selfishness—enlightened selfishness it may be. At the same time it would rob the deed of any merit it might really possess did the donor make any parade of the excellence of his motives. The thing to do at present is to give. The claims of the aged and infirm are recognised by the Gardeners' Royal Benevolent in proportion to its means, and as our readers know a special effort is being made to give, not only the existing pensioners, but also to all those who were unsuccessful candidates at the last election, substantial reason to remember the Jubilee of Queen Victoria. This is as it should be. Even more so, if possible, is the establishment of an Orphans' Fund. The want of any provision for gardeners' orphans was a distinct defect, and no better mode of celebrating the Jubilee can be mentioned than the removal of this deficiency by supplementing our continued efforts for the benefit of the old by corresponding exertions on behalf of the young. We must render help to those who cannot help themselves.

The Gardeners' Orphan Fund was started by Mr. Penny, the gardener to His Royal Highness the Prince of Wales, and by Mr. Clayton, about the same time. After much correspondence and many tentative appeals, a provisional committee was formed, with sub-committees to discuss the scheme, and draw up a practical working plan. These

committees have been most assiduous, the work they have done has not been light in quantity nor easy in execution. Much labour has fallen on the Secretaries—Mr. Barron, of the Royal Horticultural Society's Gardens, Chiswick; Mr. Wynne, of the *Gardening World*; and Mr. Wright, of the *Journal of Horticulture*; but we should not be rendering justice where it is particularly due were we to omit mention of the many useful suggestions offered by Mr. Roupell, and more especially if we failed to note the energy, ability, and business-like capability manifested by the Chairman—Mr. George Deal. No member of the committee who does not happen to be mentioned individually will for a moment grudge the tribute of gratitude for the invaluable services rendered by the gentlemen we have named.

As matters stand at present it may be stated that the cutting has begun to grow; not only is it well-rooted, but new leaves are beginning to form, and the young plants will be ready to be taken from the cutting-pot and pricked out as soon as the body of gardeners with whom the word now lies give the signal. In other words, the bye-laws have been elaborated, and now only require the sanction of a general meeting, which is to be held on July 12, at the Royal Horticultural Society.

Promises of support have been given by Baron Schroder and many other leading horticulturists, and Messrs. Jas. Veitch & Sons set an example, which will, we hope, be followed by the trade throughout the empire, by the donation of £100. A complete list of subscribers will be published in due course, for it is universally felt that a place in the golden roll of benefactors of their kind is as much the right of him who gives a shilling as of him who, of his greater means, gives a pound.

The approaching inaugural meeting, when the provisional committee will give an account of its work, and transfer its responsibility to a permanent organisation, will afford an excellent opportunity for the gardeners of the country to show their sense of what has been done on their behalf, and to make provision for the helpless ones of the future.

The Gardeners' Benevolent—thanks particularly to the unwearying energy of its Secretary, has become an established Institution. It began in a very humble, modest way, but the good it has done, and is doing, is now beyond the scope of calculation. Our successors in the gardening fraternity, will, we have full confidence, be able to say the same thing of the Jubilee Orphan Fund. It is for the rank and file of the gardening community now to do their part.

ODONTOGLOSSUM CRISPUM VEITCHIANUM.

Our illustration (fig. 151) of this splendid variety of Odontoglossum crispum was taken from a flower shown by Baron Schroder on April 12 last. The plant had been previously exhibited by the Baron, and was awarded a First-class Certificate on June 24, 1884. The plant in its pseudobulbs, leaves, and flower-spike resembles the typical plant, and is one of the most richly coloured of the crispum section. The sepals are broadly ovate, with undulated margins, and the base but little narrowed; white, with several large blotches of brownish-crimson, sometimes with smaller ones outside these, all being surrounded by a band of lilac-rose some distance within the margin, which retains its pure white colour. The petals are ovate, but broader and still more undulated, and the margins toothed; the colouring is similar to that of the sepals, but has mostly one central blotch. The lip is oblong, broad, white, with a yellow disc; the surface marked by several crimson splashes over the central parts; pencillings near the edge, with the usual radiating lines about the base of the column. O. crispum mirabile is a synonym.

NEW OR NOTEWORTHY PLANTS.

CŒLOGYNE FOERSTERMANNI, *n. sp.**

This is a gorgeous plant, whose morphological habit makes me sorrowful. I regard its growth as quite peculiar. The strong rhizome is as thick as a condor's quill, covered with sepia-brown sheaths. There are numerous descending roots. The old bulbs are cylindrato-fusiform, ribbed, usually curved, and marked by the scars of two leaves, and an intermediate, very strong apiculus, no doubt the abortive end of the axis. Sometimes one, sometimes two peduncles arise from the side or the sides of the fully developed leafy bulb, and produce their inflorescence—and what an inflorescence! The peduncle is covered at the base with twenty imbricating sheaths. I may compare it with that of Miltonia flavescens in its graceful appearance and its long narrow bracts. Mr. Foerstermann tells me that he saw as many as forty flowers on one peduncle. My herbarium specimens have as many as seventeen flowers. I find a stronger very thin inferior bulbous part as the remnant of two inflorescences. The scars appear to show that there was nothing but the peduncle on this part. Mr. Foerstermann tells me the flowers are snow-white with some yellowish-brown on the disc of the lip. The dried flowers are equal in size to the fresh ones of a well-flowered Cœlogyne

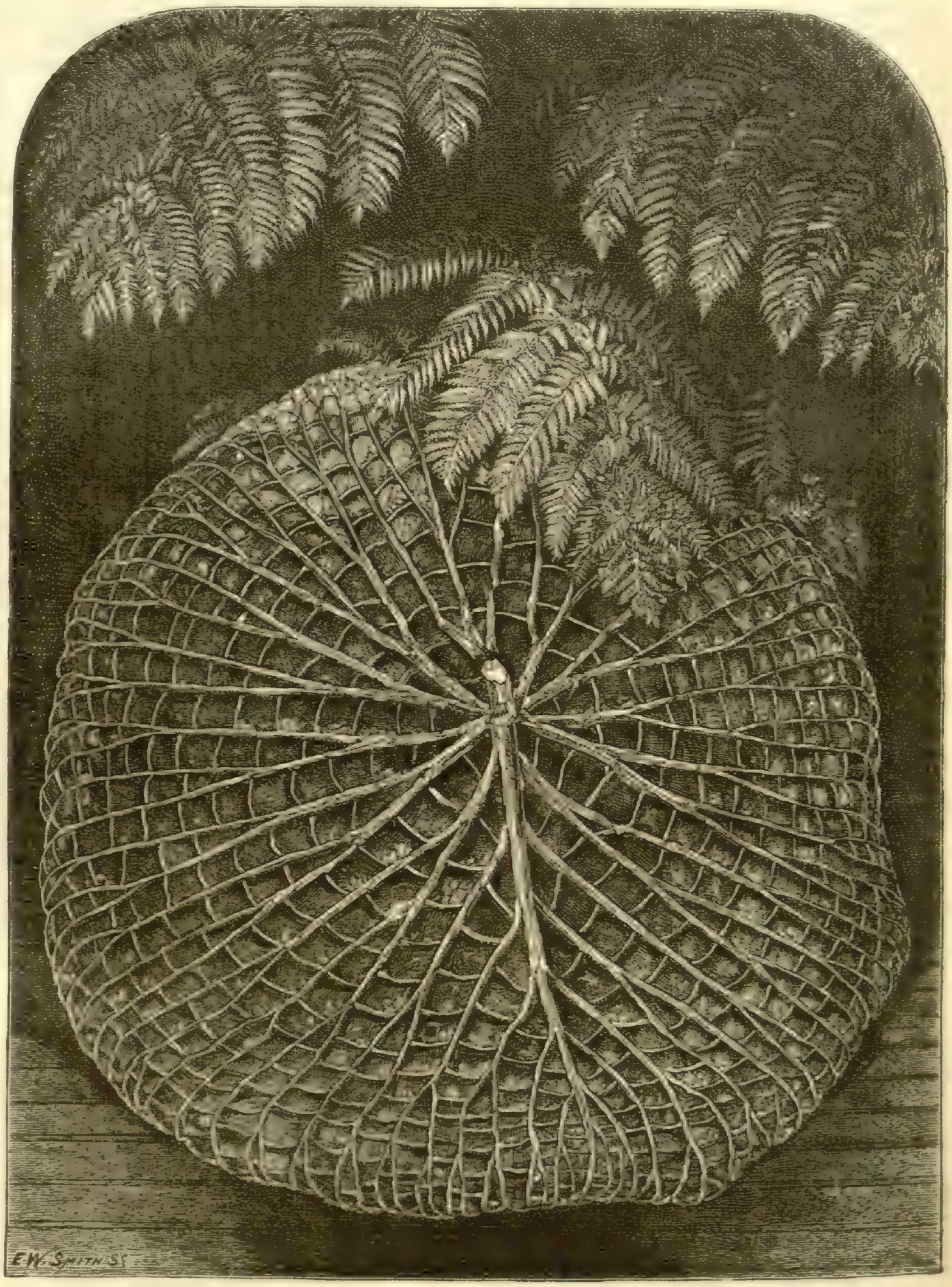

Fig. 150.—UNDER SIDE OF THE LEAF OF VICTORIA REGIA. (SEE P. 806.)

* *Cœlogyne Foerstermanni*, n. sp.—(Erectæ) rhizomate repente valde squamoso; pseudobulbis crassis cylindrat curvulis pluricostatis diphyllis; foliis petiolatis oblongis acutis prope sesquipedalibus rigidis; pedunculis validis longissimis basi multivaginatis, vaginis distantibus quibusdam sub inflorescentia elongata multiflora flexuosis; bracteis persistentibus linearilanceis ovaria pedicellata subæquantibus; sepalis tepalisque ligulatis acutis; labello trifido, laciniis lateralibus rotundatis, lacinia mediana elliptica acuta porrecta crispula carinis ternis denticulatis plicatis per discum inter lacinias laterales lateralibus in lacinia antica bipartitis, carina mediana evanescentis; columna trigona, androclinii limbo lobatulo. *H. G. Rchb. f.*

Cumingi. The bracts are narrow, linear apiculate, nearly equal to the stalked ovary; sepals and petals lanceolate, the sepals keeled outside; lateral laciniæ of the lip rounded, mid-lacinia rounded, apiculate. There are three denticulate keels on the disc of the lip running to the centre of the mid-lacinia, when an adventitious keel is added on each side. The cartilaginous, ribbed leaves attain 1½ foot in length, 3 inches and more in width, and have a very short petiole. I have dedicated this lovely plant of Sondaic origin to its zealous discoverer, Mr. J. F. Foerstermann. May the graceful inflorescence soon be developed to afford quite a fresh stimulus to orchidists. *H. G. Rchb. f.*

Odontoglossum Rossii (*Lindl.*) Smeeanum, *n. var.*

This is an uncommonly fine variety, which I have seen only once in my life. It has large flowers; sepals wholly horse-chestnut-brown, with a few whitish dots; petals quite white, with a full self-coloured lobed horse-chestnut disc and mid-base, not spotted; lip white, with a yellow callus. It was kindly sent me by Mr. A. H. Smee, The Grange, Hackbridge, Surrey, and whose name it justly bears. *H. G. Rchb. f.*

Fig. 151.—Odontoglossum crispum Veitchianum. (see p. 798.)

Lælia purpurata (*Lindl.*) Lowiana, *n. var.*

It is a frequent practice with some folk to sneer at those orchidists who prefer to give a special name to every aberrant plant. Are there really any plants of the same species quite alike? Are there not many plants which produce flowers very differently coloured in different years, as may be easily seen in Stanhopea and in Odontoglossa, too, as I learn from Mr. F. Sander. *C'est une mer à boire.* And yet there are cases when there suddenly appears a flower so widely distinct from anything before seen that instead of that painful feeling that moves you when you are called on to name and describe some slight variation, you experience a juvenile enthusiasm, and give a name with real pleasure. Such a flower is once more before me—one of the grandest things, an amazing beauty!

Lælia purpurata is duly named in England the queen of Orchids. You never see a fine plant without a fresh feeling of emotion. Such marvellous plants as those exhibited at Dresden by Baron Hruby, Messrs. Sander and Williams will always be admired by the oldest *habitués* of orchidic wonders. And now there is a most unexpected beauty before me. The very large flowers have sepals and petals rose-coloured, as in the Lælia purpurata aurorea. The lip is of the very darkest, blackish mauve-purple. The light yellow at the base is nearly gone, and what is left is interrupted by dark purple veins. Column purple at the top, with purple lines in front. It is wonderfully grand.

Only one plant has appeared in the "great expanse of glass" of Messrs. H. Low & Co. It is with the greatest satisfaction I call it Lowiana, in honour of my oldest English orchidic correspondent, Mr. Stuart Low, and in respectful remembrance of Mr. S. Low's venerable father. I learn that this unique plant is now in the possession of Mr. E. Dischhusen, of Lordship Lane, Wood Green. *H. G. Rchb. f.*

+Phalænopsis alcicornis, *n. typ.*+

This is a very curious novelty, most probably never seen before. It does not agree with any known species, nor with a hybrid, nor with a + type of that affinity. It was most kindly sent me by Mr. Stuart Low. The leaves are said to be silvery-green, as light in colour as those of Phalænopsis Schilleriana. Its flower comes near that of Phalænopsis grandiflora, Lindl., yet there are some great differences. To begin with, the anterior lacinia of the lip is not hastate at all, but nearly cruciform, inasmuch as it is highly shouldered, and at the strong side angles go out not very far from the middle. A distinct narrow keel runs over the middle. The cirrhi are exceedingly developed. The shanks of the callus are not complicate, but they stand open and parallel with the front side of the column, each being ligulate, retuse-bilobed, the confluent anterior angle callous and lobed. Thus one is reminded of the branch of a young elk. The colour of the sepals and petals is creamy-white inside; the sepals washed with light yellow outside. The lip has some yellow markings. There are light yellow spots on the callus, nail of the lip, and base of the side laciniæ. The anterior lacinia has the keel of the mid line yellow, and yellowish borders near the angles. An area on the anterior side of side laciniæ is also yellow. What good luck it would be if we could hear of the flowers in coming years. *H. G. Rchb. f.*

Oncidium (Cyrtochilum) lucescens, *n. sp.**

This new Cyrtochilum stands very near to Oncidium metallicum. It differs from it in the long, recurved, wavy, dorsal sepal in the trimembrate callus at the base of the lip and in the acute wings of the column. The dorsal sepal is dark brown, with yellow recurved margin, much waved at the edge. Its stalk is very short, with auriculæ, which ascend on each side into a narrow margin. The lateral sepals have longer stalks, an oblong acute greenish-brown blade, whose median nerve is rather green inside. Petals very short, with two auricles to the short stalk, blunt hastate triangular, wavy, dark cinnamon, with crisp yellow limb. Lip ligulate, short, angulate at the base, dark greenish, anterior part fine Indian-purple. Column greenish, with brown spots, orange at the anterior angulate base, wings narrow, Indian-purple, semilunar, ascending. This fine and unexpected novelty was kindly sent to me by Mr. B. S. Williams, of the Victoria and Paradise Nurseries. *H. G. Rchb. f.*

Asphodelus comosus, *Baker, n. sp.*†

For a living specimen of this interesting new Asphodel, I am indebted to our indefatigable correspondent, Max Leichtlin. It was brought by Herr Jaeschke, the well known Moravian missionary and Indian botanist, from Rotang Pass, one of the passes between Tibet and the Lahoul, in the north-western Himalayas. The plant from which the specimen was cut is in the possession of Mr. W. Hans, of Herrnhut. This extends considerably the range of the genus in an eastern direction. It has entirely the habit of the well-known European Asphodelus ramosus, from which it may be known at a glance by its long bracts, which protrude beyond the buds, and by its much exserted stamens, rather like those of an Eremurus. Habit entirely of A. albus and A. ramosus. Root-leaves ensiform, resembling a good deal those of Kniphofia caulescens, 1½ foot long, 1½ inch broad low down, rather firm in texture, tapering gradually to the point, rather glaucous, channelled all down the face, and acutely keeled all down the back. Peduncle very stout, about as long

* *Oncidium lucescens*, n. sp. (Cyrtochila auriculata, labello elongato).—Inflorescentia ramosa; ramulis paucifloris; bracteis oblongis acutis scariosis ovaria pedicellata vix quarta æquantibus; sepalo impari breviter unguiculato, lamina transverse triangula crispula recurva; sepalis lateralibus supra ungues extus minutissime auriculatis; lamina cuneato oblongo triangula; sepalis breve unguiculatis utrinque auriculatis; laminis triangulis crispis; labello basi utrinque angulato ligulato acuto, medio paulo constricto callo baseos utrinque tridentato; (quasi trimembrato; membris antepositis obstricturas utrinque geminas insilientes; membro quovis extus dentato;) denticulis parvis extus additis; columnæ alis linearibus acutis ascendentibus. Ex col. exc. B. S. Williams. *H. G. Rchb. f.*

† *Asphodelus comosus*, Baker, n. sp.—Foliis ensiformibus bipedalibus subglaucis acute carinatis; pedunculo valido bipedali; floribus in racemis densis copiose paniculatis dispositis; pedicellis brevibus ascendentibus infra medium articulatis; bracteis scariosis brunneis elongatis acuminatis; perianthii segmentis lineari-oblongis albis viridi-vittatis basi coalitis; staminibus perianthio sesqui-longioribus. *J. G. B.*

as the leaf. Inflorescence a panicle a foot long, with a dense end raceme 2 inches diameter when expanded, and six or eight small side racemes on short ascending peduncles; pedicels ascending, $\frac{1}{8}$—$\frac{1}{4}$ inch long, articulated below the middle; bracts lanceolate-acuminate from a broad base, scariose, dark brown, $\frac{1}{2}$ inch long. Perianth $\frac{5}{8}$ inch long; segments linear-oblong, white with a distinct sharply defined green keel, united in a short basal cup. Stamens protruded $\frac{1}{8}$ inch beyond the tip of the perianth; filaments white; anthers oblong, versatile, yellow. Ovary ovoid; style developing after the stamens, finally as long as the filaments. Capsule not seen. *J. G. Baker.*

ROSES.

A FINE MARÉCHAL NIEL.

In the conservatory attached to Thames Ditton House, Surrey, there is an unusually fine specimen of this Rose that has been in full beauty this season, and a few remarks upon it may prove of interest. The example in question was budded on a variety, the name of which has been lost, about twelve years ago. It now covers a space of the conservatory roof of about 27 by 17 feet. It bears abundance of flowers every year, and has never been known to miss flowering well, since it was of any size. Mr. Palmer, the gardener in charge of these interesting and pleasantly situated gardens, has cut 2000, or more good blooms from it this year, and there are more still to be cut. The mode of treatment has been as follows:—Every year, about December, pruning takes place, all the small useless wood being taken out. Frost is kept out of the conservatory in winter, which is well fumigated in early spring—this fumigation insuring the banishment of aphides for the remainder of the season. The syringe is never called into play—the specimen has not been "watered," as the latter process is generally understood, only the surface being moistened. It is simply a narrow border, in which it is planted, inside the conservatory, which drains itself into the cellars of the mansion. The belief is, that the roots have found their way into the house-drains, and to that source is due the extraordinary vigour of the plant. *B.*

The Rose-house.

The Roses in the Rose-house are rapidly coming into bloom here for the second time; such plants must have every attention with water and stimulants—a slight sprinkling of Thomson's Vine and Blood Manure will be beneficial given alternately. Care must be taken in admitting air when cold winds prevail, and for some time to come confine the airing to the top of the house. If the wind be cold just allow the least chink. If mildew should make its appearance syringe the trees three evenings in succession with weak Gishurst soap solution, syringing it off the first thing in the morning, using tepid rain-water. Allow a little heat in the pipes during dull stagnant weather, to promote circulation.

Tea Roses in pots which have flowered through the winter should now be hardened off preparatory to being stood out-of-doors during the summer months. Although the weather is now much warmer it will not do to turn those from under glass, especially where artificial heat has been used. Let some temporary shelter be given them for ten days. A compost of fibry loam, leaf-mould, and a little charred soil should be got in readiness, into which all those that require potting should be shifted. Those which have not grown vigorously may have most of the inert soil removed from about their roots, and the plants put into smaller pots. Prepare a place for the plants to stand on and let the situation chosen, be open and airy, making provision for the escape of water, the best materials for the surface on which the pots are to stand being sifted coal-ashes largely mixed with lime or soot, which will act as a deterrents to worms. The point to be aimed at, is the thorough ripening of the wood which has been made during the winter and spring under glass. Pick off every flower-bud from the plants as it appears, and keep the foliage clean and healthy by frequent syringings with rain-water. Hybrid perpetual, Moss, and Cabbage Roses which have been forced, should now receive attention. Let them be examined, and any needful potting attended to. Most of them may require merely a surface dressing. Let the pots be stood on a hard bottom as directed, or plunged to the rim in coal-ashes. A weekly watering with weak manure-water in which a bag of soot has been steeped, will greatly assist them to make sturdy growth as well as impart dark colour to the foliage. From this lot will be selected those plants which will furnish flowers up to Christmas from the summer growth, without being pruned. *W. M. Baillie, Luton Hoo.*

POLEMONIUMS.

This popular genus appears to have arrived at that stage of its existence when a certain amount of confusion seems to be inevitable, owing to the number of forms or varieties belonging to one or two of the species most generally grown in gardens at the present times. It is just possible that we may still have what can be identified as fair representatives of the original types, but these are certainly fast giving way to the more showy garden varieties. The more these forms are developed the more difficult it will be for the botanist to give each its relative value, and more especially so as the characters which at present distinguish certain species, are of such a nature that development with good cultivation, &c., will certainly tend in the direction of obliterating them altogether. Taken in a broad sense, not more than three species are cultivated to any extent in gardens; these are P. humile, P. cœruleum, and P. reptans, each variable in itself in a greater or less degree, and the first two especially including some really good showy plants. Dr. Gray is certainly the first authority on this genus, and him we must follow; he has recently worked them out for his *American Flora*—indeed, he is the first to work them out in a thorough manner. To make it more clear, and with a view to helping those in a like difficulty with ourselves, we append Dr. Gray's definitions of the three species above mentioned with a few notes:—

I. Low, about a span high, from cæspitose branching and mostly thickened rootstocks; flowering stem only one to three leaved; flowers cymulose, leaflets seldom half-an-inch long.

P. humile, Willd.—More slender than P. viscosa, and from a somewhat creeping rootstock, more or less viscid pubescent; leaflets fifteen to twenty-one, from round oval to oblong, 2—6 lines long; flowers rather few in the clusters, corolla blue or purplish, its ampler rounded lobes much shorter than the short included tube; filaments pilose at the dilated base; ovules two to four, and seeds one to two in each cell. A polymorphous or complex species, of which the large-flowered high mountain form with rather long viscid pubescence about the calyx, &c., may be taken as a type after Chamisso, viz., his P. humile and his variety macranthum (syn. P. Richardsonii, Graham, *Bot. Mag.*, t. 2800); P. lanatum, Fisch.; P. capitatum, Benth.; P. pulchellum var. macranthum, Ledeb.: lobes of the corolla often 5 lines long.

P. humile var. pulchellum, Gray.—Viscid pubescence mostly minute, or the leaflets often nearly glabrous and naked, flowers smaller, the lobes of the corolla only 2—3 lines long, violet or lavender-blue; in some forms nearly white (varies in small flowered forms) with the style and even stamens exserted. Syn., P. pulchellum, Bnge; P. moschatum, Wormsk; P. humile. Ldl., *Bot. Reg.*, t. 1304; P. pulcherrimum, Hook., *Bot. Mag.*, t. 2979. A more viscid, lax, or diffuse, and smaller flowered form, the corolla violet varying to white, its lobes narrower. As may be seen from the above, Dr. Gray admits three distinct plants under the name P. humile; two of these, the type and the variety pulcherrimum, are well known in gardens. while the variety pulchellum, Gray, humile, *Bot. Reg.*, t. 1304, we have only seen from Mr. Wolley Dod's garden, Edge Hall. Excluding at present the form we know in gardens as P. Richardsonii, there is no mistaking the type humile with the two varieties as defined above; it is altogether larger in all its parts, the leaflets more numerous, and the flowers especially, almost twice the size. In pulchellum, Gray, the flowers are small, pale blue, the stamens and style in some flowers slightly exserted while in others distinctly shorter than the lobes. The variety pulcherrimum is still smaller flowered, and the leaves form dense mats. 1 or 2 inches high. P. Richardsonii, *Bot. Mag.*, t. 2800—the above quoted figure of which being cited as a syn. of P. humile—is very different from the plant we now cultivate in gardens under that name—indeed, the latter is so abundantly distinct, either from the typical humile or the figure in *Bot. Mag.*, as to warrant a separate name of its own. So far as I have seen, amongst the cultivated plants there is hardly a possibility of matching the figure, unless, indeed, it could be matched with a very starved form of the plant we now grow under that name, and which I have long suspected to be the case, one of the leaves in particular in the figure somewhat resembling our present plant. The cultivated P. Richardsonii agrees in the main, and is most certainly allied to P. humile. It has the somewhat creeping rootstock, the few-leaved flower-stem, and the short and narrow leaflets. It is, however, much more robust in habit, to all outward appearance, meeting P. cœruleum about half way, and, indeed, often confounded with that species. Far as the resemblance may go, however, the few-leaved stem, larger flowers, and other characters cut it off entirely with any connection to cœruleum, and throws it in the above section. The plant is very distinct from all others, and certainly deserves a varietal name of its own.

II. Taller, from slender rootstocks or roots, leaves and leaflets larger: ovules six to twelve in each cell; stem erect, 1—3 feet high; leaflets numerous, and mostly approximate, not rarely confluent, or the rachis winged; seeds in the same species either winged, angled, or marginless; corolla blue varying to white.

P. cœruleum, L.—Either glabrous or viscid, pubescent; stem mostly striate, and virgate, 1 to 3 feet high; 5—10 leaved, leaflets from linear-lanceolate to oblong-ovate (9—12 lines long); flowers numerous in a naked or narrow thyrsus or panicle; calyx cleft to, or beyond the middle; corolla an inch or considerably less in diameter; elongated styles usually considerably, and stamens often somewhat longer than the corolla. This plant is well known, and the characters given above are quite enough to distinguish it anywhere. There are a few good varieties in cultivation however, and amongst the most noteworthy may be mentioned the variety, himalayanum, Baker, already distributed under the name of P. cœruleum var. grandiflorum, but the latter name has been appropriated to a Mexican species. Himalayanum is a native of the Himalayas, robust in form, with larger and finer coloured flowers, opening a fortnight or so earlier than the type.

P. c. var. bipinnatifidum is also a very distinct plant. We have often seen it called P. sibiricum It is readily recognised by its divided leaflets, and is apparently a seedling variety of cœruleum.

III. Ovules only three to four in each cell; stem lax or with diffuse branches, and open corymbiform or paniculate inflorescence; leaflets fewer, five to fifteen, and rather large membranaceous, only the ultimate at all confluent; herbage glabrous or slightly pubescent, neither viscid nor glandular; style and stamens shorter than the corolla.

P. reptans, L.—A foot or less high, slender, weak, and at length diffuse or spreading (but never creeping), leaflets ovate or lanceolate-oblong; flowers several, and loosely paniculate-cymulose on the branches; calyx with ovate lobes shorter than its tube; corolla light blue, half an inch or less in length. *Bot. Mag.*, t. 1887.

The above description agrees generally with the plant known in gardens under this name, with the exception of the style, which in many of the cultivated forms is exserted, and also with the calyx lobes

being longer (not shorter) than the tube; in some of the forms we have seen, the calyx lobes are distinctly auricled at the base. It appears to be constant, and if so would be a good varietal character, as it accompanies somewhat larger flowers. So distinct is this P. reptans from all the others that there can be no possibility of its being mistaken; the fewer and much broader and longer leaflets, the curious corymbiform inflorescence, and the entire absence of glandular or viscid pubescence, mark it off in a very distinct way. Others, such as flavum, mexicanum, grandiflorum, &c., may be found in some few gardens, but they seem to be scarce, so far. *D.*

Orchid Notes and Gleanings.

MESSRS. J. VEITCH & SONS.

Schomburgkia tibicinis.—Among the many objects of interest to be seen at the present time in the nursery of Messrs. James Veitch & Sons is the singular and interesting Cow-horn Orchid (Schomburgkia tibicinis), with scapes measuring some 5 feet in length, and bearing near the apex numerous handsome flowers of 2½ inches across. The sepals and petals are beautifully undulating, light rosy-purple below, and flushed with a peculiar light orange-red above; the lip being very light rose, with numerous transverse undulating veins of purple-brown, and a central line of clear yellow. It is a very handsome species, though of somewhat ungainly habit. The long hollow pseudobulbs, too, are very peculiar. In order to succeed in its cultivation it should be placed near the glass in a very warm house, plenty of water being given during the growing stage. A season of rest should also be allowed to induce it to flower. Mr. Bateman gives a very interesting account of the plant in his elephant folio work, *The Orchidaceæ of Mexico and Guatemala.* From him we learn that this striking plant is a native of Honduras, where it exists in great abundance; it is also found, though more rarely, in Oaxaca and Caraccas. Mr. Skinner was the first to discover it, his attention having been attracted at a considerable distance by a cluster of its lofty flower-spikes, which when in full blow, and in the dense masses that the plant produces in its wild state, must be very conspicuous. On the occasion in question its original discoverer was not permitted to obtain quiet possession of his prize, as swarms of fiery ants, to which the hollow stems of the species offer a snug retreat, issued forth in thousands to repel the spoiler, and inflicted pangs which none but the most ardent naturalist would have braved. The long hollow stems are formed into trumpets by simply cutting off the extremities, and in such request are these vegetable trumpets said to be among the wild urchins of Honduras that the plant yielding them is called the "Trumpet-plant."

Nanodes Medusæ.—We also noticed a good specimen of this singularly bizarre, but handsome Orchid at Messrs. Veitch's. The flattened stout stems, and pale glaucous colour of the foliage, and the peculiar appearance of the lurid purple flower, give it a very unusual appearance. The sepals and petals are green, tinged and edged with faint red-purple; the very large orbicular lip is of a dull lurid purple with dull green disc, bifid at the apex, and the margin cut into long flexuose fimbriæ, rendering the specific name of Medusæ a singularly appropriate one. It was introduced from Ecuador by Messrs. Backhouse, of York, and is, we believe, rare in collections at the present time. It is well depicted in the *Bot. Mag.*, t. 5723.

Thunia Bensoniæ.—Another very striking plant we noticed was a richly coloured form of Thunia Bensoniæ, in which the colour was much deeper than in the form represented in *Bot. Mag.*, t. 5694. It is one of the showiest of the genus, the bright purple segments and the yellow crest on the lip contrasting well with the graceful foliage. Why the botanists should have reduced this genus to Phaius is indeed a puzzle, seeing that it has only four pollen-masses, while the latter has eight, besides being so different in habit. And I cannot help thinking there must be some mistake in Mr. Bentham's remark, "I have seen the eight pollen masses quite distinct . . . in dried specimens of Bletia hyacinthina and Phaius albus, and in living specimens of Phaius Bensoniæ." I have never succeeded in finding more than four in the two latter. By the way, Prof. Reichenbach does keep the two genera distinct.

Aërides mitratum.—This is said to be extremely rare, not only in cultivation, but in its native home of Moulmein. Messrs. Veitch have a nice plant, and a charming species it is, though small. The foliage is long and cylindrical, and the erect racemes are about 6 inches high, and crowded with flowers of over half an inch in diameter, white, with rosy-purple lip and anther-case. A figure may be found in the *Bot. Mag.*, t. 5728, where it is stated that the racemes are 5—10 inches long.

Many other plants might be mentioned amongst the crowd of species now in flower, the Cattleya-house especially being quite a sight. Several plants of the old Broughtonia sanguinea may be seen, which Browne, in his *Natural History of Jamaica*, describes as one of the most beautiful plants of the tribe, and as growing on trees near the coast. Altogether the Orchids at the Royal Exotic Nursery are in fine condition, and will amply repay the trouble of a visit. *Orchis.*

Kew.

Lissochilus Krebsii is now finely in flower in the Cattleya-house at Kew; the erect scape is nearly 2 feet long, and producing a score of its singular-looking flowers. The linear, oblong sepals are greenish, densely blotched with brown; the petals are yellow, the lip a deeper yellow. This species was first described by Reichenbach in 1847. It was collected in Natal, and figured in *Bot. Mag.*, t. 5861. L. Horsfallii is a noble species, figured in *Bot. Mag.*, t. 5486; it produces a scape from 4 to 6 feet long, terminated by a truss of large, very beautiful, purplish-coloured flowers. The most recent species, also figured in *Bot. Mag.*, t. 6858, is L. Sandersoni, also from Natal. It seems to have first flowered in England in the Palm-house at Kew, planted out in one of the borders. The scape of this species is from 6 to 7 feet high, terminated by a spike of its singular-looking flowers. The sepals are green, with brown lines; the petals white, and the lip violet, with purple lines. The above South African Orchids, which have all flowered in the Kew Gardens at different times, are excellent representatives of this peculiar genus.

Oncidium auriferum, also in flower in the Cattleya-house at Kew, produces its spikes of clear, rich yellow flowers, a foot long, with the young growths; it is very distinct and pretty.

The following Orchids, also in flower at Kew, are worthy of notice, viz., *Ionopsis utricularioides*, which was growing freely in baskets suspended from the roof. It is a very graceful flowering plant, and does not differ in any material degree from the plant figured in the *Bot. Mag.*, t. 5541, as I. paniculata. This species varies greatly in the tint of the flowers and also in the size of the large lip—large in comparison to the sepals and petals. The long branched spikes have a charming effect.

Dendrobium Lowii is also flowering very freely. The appearance of the slender hairy stems proclaim it to be nearly allied to D. infundibulum and Jamesianum, requiring much the same treatment to develope its flowers. We are told in the *Bot. Mag.* that it was discovered by Mr. Hugh Low "on the north-west coast of Borneo at an elevation of 3000 feet above the sea level, growing on trees in exposed situations." I have found nearly all the nigro-hirsuta section succeed best in baskets, where they are seldom disturbed and hung up close to the glass roof. Some of course require more heat than others. D. formosum can scarcely have too much, while D. infundibulum does best in a cool-house. Some of them succeed best in medium temperatures between the two extremes. Dendrobium mesochlorum, a very pretty, sweetly perfumed species, is also in flower; this I have grown and exhibited under the name of D. amœnum; nor does it differ very materially from D. amœnum of the *Bot. Mag.*, t. 6199. Probably the name has been altered. One may ask the question "What's in a name?" It was discovered in the first place by Wallich, who described the fragrance as exquisite, and not unlike that of Olea fragrans. It is as free in growth as D. nobile, and the same plant has flowered freely with us for ten years. It is not much grown, but should be in every collection of Orchids, not only for its fragrance, but for its elegant spikes of flowers.

Phalænopsis sumatrana is in flower, in the form of an exceedingly good variety; the flowers are of large size, the sepals and petals yellowish, marked with heavy transverse bars. A paler variety is figured in the *Bot. Mag.*, t. 5527, from a specimen exhibited at South Kensington by Mr. Day. It was well described by Reichenbach in the *Gardeners' Chronicle*, June, 1868, p. 507, with figure; he says the apex of the lip is furnished with "hairs quite as dense as in a good hat-brush." *J. D.*

Orchids at Woodhatch, Reigate.

Different growers are content with different degrees of excellence in Orchid culture. In the collection of T. B. Haywood, Esq., the utmost possible in growth and flower is aimed at, and fortunately his gardener, Mr. J. Ridout, who is in heart a plant-lover as well as plant-grower, is able and willing to join with his employer in bringing about the best results. Thus, while on the one part there is no stint of the wherewithal to provide everything desirable for the well-being of the plants, on the other there is unremitting care and intelligence in carrying out every detail—with what good results the present fine condition of the plants and the magnificent show of flowers which they make, plainly indicate.

Odontoglossum vexillarium is here cultivated to a wonderful pitch, small plants being grown in a few years up to the large specimens we now see there, some of them 3 feet across, and bearing between 200 and 300 flowers each. Many other specimens have about fifty flowers, and among them are some very rare dark rose, rose, and some beautiful white lipped varieties, while others are margined with white or veined with rosy-lilac. And still another new form appears, with medium-sized flowers dotted over with crimson. These Odontoglossums are truly magnificent, and a brave show they make in the cool-house, mingled with large numbers of fine forms of Odontoglossum crispum, O. Hallii, O. Wilckeanum, O. Pescatorei, O. Roezlii, O. nebulosum, O. Andersonianum, O. cordatum and some grand specimens of Masdevallia Veitchii grandiflora, and richly tinted M. Harryana and M. ignea, with fifty or sixty flowers each. Masdevallia Schlimii has eighteen spikes of six or eight flowers each, and forms a very pretty contrast with its chocolate and yellow flowers among the gayer colours. All the plants are kept comparatively cool at Woodhatch, and examination of the almost abnormal development of some of the flowers confirms the idea that in such a genial temperature and in carefully shaded houses the flowers grow after opening to a larger size than they do when less carefully managed; certain it is that no one could desire, either in the quality of the plants or in size and quantity of flowers, anything better than the Woodhatch culture secures.

The Cattleya-house is as full of bloom as the cool-houses, and the quality is as good. C. Mossiæ is a favourite of Mr. Haywood, and he has grown on, some superb selected forms until they now bear a score or so of very fine flowers each; the Mendelis are also equally good, although not so numerous; and even the plants of C. labiata Warneri freely produce their flowers, which they do not in some collections; and some specimens of Lælia purpurata are well bloomed. Perhaps the most striking object in the Cattleya house, however, is a couple of plants of Lælia majalis suspended overhead and furnished with very large rosy flowers delicately marked with crimson, one of the varieties being exquisite. It is

a pity we do not see more of this fine Orchid, which, generally speaking, is smothered out of existence in collections. Pure air, a clear light and plenty of water when growing are the chief essentials.

The warm-house plants are in keeping with the other things, some of the plants growing almost beyond recognition. One we noted especially was a plant of Vanda Parishii raised up on a stout stem and still carrying its leaves down to the pot. A variety of Dendrobium chrysotoxum also had flowers twice the usual size, D. Jamesianum was profusely flowered, and various other Dendrobes, Cypripediums, &c., in bloom. When Orchids are grown and flowered as with Mr. Haywood, no class of plants can surpass them, to say the least of it. *J.*

FERTILISATION OF DISA GRANDIFLORA.

The statement by "Capensis" (*Gard. Chron.*, April 9, p. 483), that "one never finds the pollinia withdrawn," requires qualification. During recent years I have not had opportunities of examining the flowers of this plant in its mountain stations; but as long ago as 1863 I noticed (see *Journ. Linn. Soc.—Bot.*, vii., p. 147) that in several flowers which I examined on the southern spur of Table Mountain one pollinium had been removed. In February of either 1864 or 1865 (the year is omitted in my note, made on the spot) I examined during one day's visit to the same station eighty-three flowers. In five of these, both pollinia, and in seven others, one pollinium had been withdrawn; and in evidence of the work of some insect, the stigmas of five flowers were covered with pollen. In no less than fifteen others out of the eighty-three the pollinia had been eaten away; this was, of course, to the disadvantage of the plant, and I found one devourer at work, in the shape of the small brown larva of a grasshopper. This insect was eating the pollen-masses themselves, and the caudicles and viscid discs of the pollinia remained undisturbed below.

On this and several other occasions I watched in vain for either lepidopterous or dipterous visitors to this magnificent flower. The nectary is not deep in proportion to the size of the flower, and it would not require a very long haustellum to reach the nectar; but on the other hand it would need an insect of some bulk and power to bear off the long and heavy pollinia. The only two large diurnal lepidoptera frequent where the plant occurs are Papilio demolens and Meneris Tulbaghia; the latter is partial to red flowers, and I have seen it visit Disa porrecta (which has crowded flowers with a very long nectary spur), and captured two specimens bearing the pollinia of that Orchid. It seems to me not improbable that this butterfly, M. Tulbaghia, may occasionally be the agent in fertilising D. grandiflora. Two or three large diurnal diptera haunt the slopes of the mountain—of these, I think either Bombylius analis or Pangonia rostrata is competent to reach the honey, and carry off the pollinia. It is a species of the latter genus, P. varicolor, which Mrs. Barber informs me is instrumental in fertilising Disa polygonoides in the Albany district.

It is, of course, not altogether unlikely that one of the Sphingidæ may be the visitor required, but I cannot say whether any species prevails at the elevation proper to D. grandiflora. I have met with Deilephila livornica visiting Echium and other flowers at mid-day, and Macroglossa trochilus is also common in this neighbourhood. I have noticed both these moths on hills of some elevation, but not in the actual stations of the great Orchid.

The present great brilliancy and size of the flower, and the very highly developed condition of the entire reproductive organs — and especially the extreme viscidity of the discs of the pollinia—seem to me to render highly improbable — the conclusion of "Capensis," that "the insect adapted to visit and fertilise the Disa is extinct," and still more to invalidate his view that "probably the extinction occurred long ago—long even as geologic time is reckoned." It certainly seems clear, nevertheless, that this Orchid, like so many others, notwithstanding its great attractions, receives but rare insect visits, and depends mainly—perhaps has always so depended—for perpetuation on the growth of runners and tubers described by "Capensis." *R. Trimen, Cape Town, May* 10.

FLORISTS' FLOWERS.

SEASONABLE NOTES.

The Hollyhock.—The plants of these are coming on steadily and strong. Those plants that remained out-of-doors during the winter are not growing so well as the young plants put out early in May. The season was very trying to the old plants in the open border, except where they were well protected from the north wind by a thick-set hedge. In that position the plants were drier at the roots, and they passed through the winter unscathed. We have now dug amongst the plants after a good dressing of

Fig. 152.—Cedrus deodara, planted by the Queen, at Windsor.

manure was spread over the surface. It is best to cut off all the growths but one; those not required form excellent material for cuttings. From these superfluous growths we propagated the young plants which were put out in the open ground early in May. Rich, deep, well-worked soil, surface-dressings of decayed manure, and copious waterings will produce long spikes furnished with blooms. The cooler summers of late years, or some reason unknown to me, have had the effect of preventing the Hollyhock fungus from doing any material harm. Even in seasons when it has been present on the leaves the plants have flowered well. Red-spider has done quite as much mischief, but can be kept in check by copious syringings. Soft-soapy water does not much harm to the spider, but it destroys the greenfly, and the spider may be killed with tobacco-water. It is now a good time to sow seeds; the plants from seeds sown now, make sturdy specimens before winter sets in. It is best to sow seed on a sheltered border out-of-doors; when the young plants have grown large enough, prick them out about 9 iches apart, and when they have grown into sturdy well-leaved plants they may be planted where they are to flower the following season. If they are in their permanent positions by the end of September, they will become so well established that an ordinary winter will not injure any of them. *J. Douglas.*

The Calceolaria.

It is now a good time to sow seeds of this plant, if good large specimens are required, such as were exhibited by Mr. J. James at the Crystal Palace great exhibition on May 21. They may also be sown at any time during the next six weeks. The seeds are very small, and require to be carefully handled, or they may be scattered on the ground during the process of opening the packet. The pots or pans ought to be filled to within an inch of the rim, and the top part ought to be finely sifted, and made quite level; on this sow the seeds, just covering them with fine sand. See that the pots or pans containing the seeds are not exposed to the direct rays of the sun either before the seeds vegetate, or afterwards. The various details of the after-treatment of the plants have been frequently described. Any very good varieties may be propagated by a process of layering, which is more certain than taking cuttings. When the flower-stems have been removed the plants may be placed in a frame, and some fine sandy mould should be placed over the stems; this must be kept in a uniform degree of moisture, and when roots have pushed out from the stems these portions may be cut off, and potted separately. They may not grow with the vigour of seedling plants, but they make handsome specimens, and it is pleasant to know that the variety will be good. When rooted and potted on in the usual way, they require the same treatment as the seedlings. During the hot weather, they must be fumigated to keep them free from greenfly. If this pest should get upon the the leaves, and cause them to curl, it is not easily removed. *J. Douglas.*

STRAWBERRIES AT TWICKENHAM.

It was but a short time ago that we referred to the fine show of Cyclamens grown by Mr. R. Clarke at Twickenham. Since then a transformation scene has taken place there—the space that was then taken up by the brightly coloured flowers has now given place to richly coloured fruit of the Strawberry. Of all places to see things done well, that one is assuredly the market grower's, particularly where, as in the present case, certain subjects are made a specialty of.

Strawberries for market have now been grown at this establishment for upwards of thirty years; as a consequence, high-class culture, with the most favourable results, are always seen. Let the reader picture to himself one long lean-to range of houses of 150 feet in length, and filled with fruiting Strawberries in pots, in various stages, from end to end. In addition to this house there is another structure exceeding 100 feet in length, filled with a magnificent show of fruit.

Now (May) is the busy time with the grower of forced Strawberries for market, extensive pickings of the luscious fruit taking place every day, girls being the performers in this act. Napier, as it is popularly called amongst the growers, is the favourite early forcing variety. About 14,000 plants of this variety alone are forced annually, here. Presidents and Paxtons (a huge stock, and in splendid "trim" at the time of our visit) are grown for outdoor culture; the latter is especially invaluable for this purpose. The culture is not confined to pot Strawberries, for in long ranges of low frames we observed hundreds of fine plants laden with fruit that were last year forced in pots, planted out, and in early spring protected and planted in rows 18 inches apart in these frames.

Outdoors, as may be imagined in such a place, a large area is devoted to Strawberries, and there is good promise of a full fruiting season, the bed at the time of our inspection being covered with flower—a perfect sheet of white. It is Mr. Clarke's opinion that this will be the best Strawberry season we have had for years.

An interesting fact, and perhaps one worthy of being put on record, is that Strawberries—and only these—have been grown in the same soil here for thirty-five years without intermission, and this year they are doing better than ever. Of course the ground has been well manured, and they have been favoured with good "maiden" loam. Herein, doubtless, lies the secret of the success. Speaking of soil, we observed what was a great stimulus to the well-being of the pot plants—the pots resting in saucers filled with soil, into which the roots penetrated—or, as Mr. Clarke somewhat practically put it, "something for their toes to get at!"

Just one note, by way of conclusion, on the somewhat new and early Strawberry, Pauline. It is highly esteemed at Twickenham, Mr. Clarke considering it to be (grown out-of-doors) about a week earlier than President—no mean advantage to the market grower. We saw a large stock of it, some 11,000 plants—a statement which goes far to show that its merits have already been discerned. *B.*

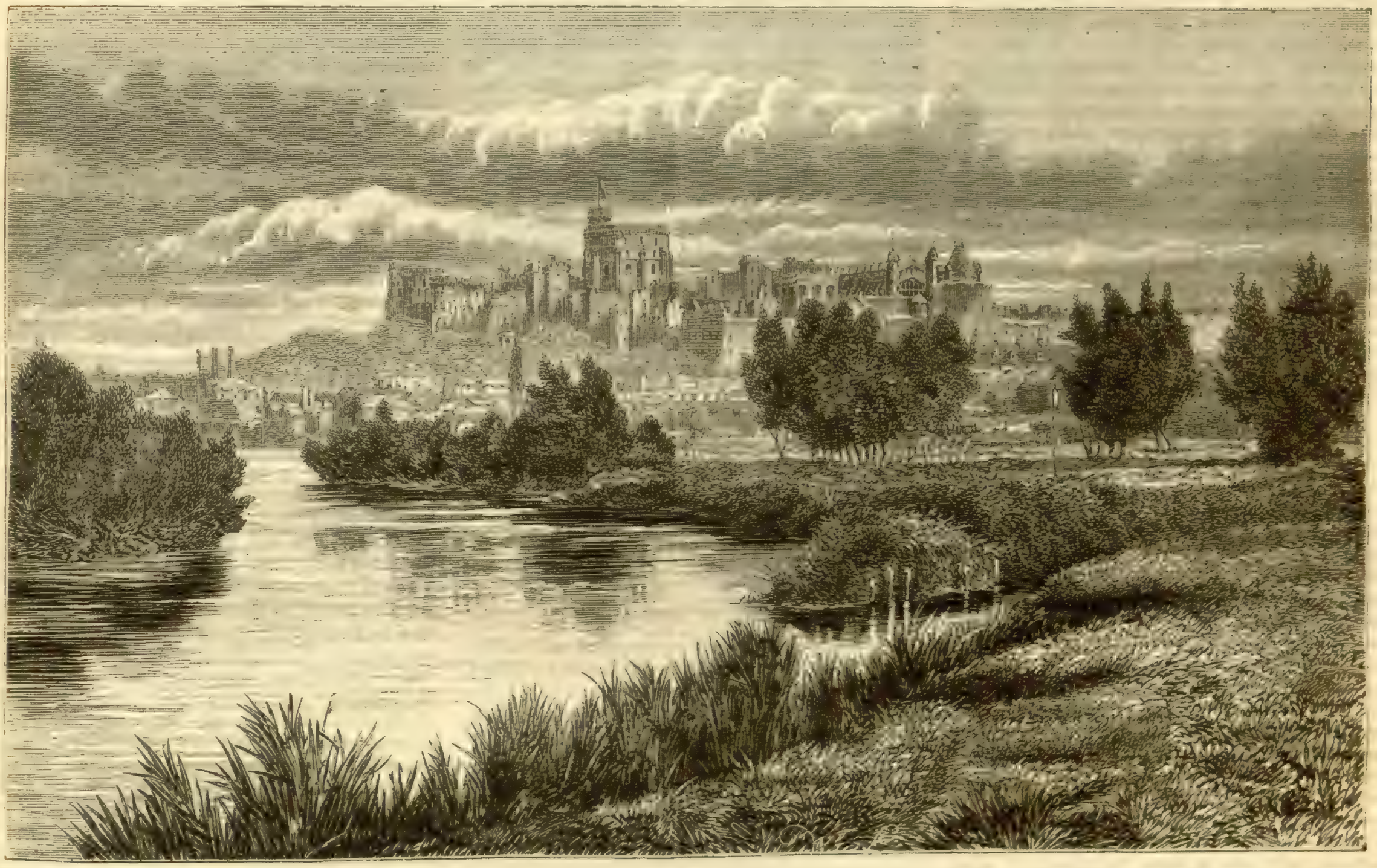

Fig. 153.—WINDSOR.

PRIMULA RETICULATA.

We seem likely to be inundated with Primroses calling themselves P. reticulata, but all of them, as far as I have yet seen, being in reality P. sikkimensis. We were similarly beset four years ago with P. involucrata under the name of P. obtusifolia, and are still beset with Polemonium cœruleum as P. Richardsoni. It is desirable to be cautious against establishing a false name. Primrose seed, collected I believe by natives in the Himalayas, was liberally distributed in the winter of 1885. I had as many as twenty packets from various sources, and under many names. Of these several were labelled Stuartii, Kingii, reticulata, and sikkimensis; all of these produced P. sikkimensis, and at least 500 of the seedlings are now in flower here. That the identity of the first two had been mistaken is beyond dispute; but as reticulata and sikkimensis bear some resemblance to one another, I believe that sikkimensis has been passed as reticulata by some in high places.

During the last two days I have been the round of my plants with Hooker's *Flora of British India* in my hand, and after carefully comparing the characters in detail have failed to recognise P. reticulata amongst those in flower. Some specimens have been sent to me by friends under this name, all of which I have rejected as spurious. I can only say that I have done my best to find out what reticulata ought to be, and that I have not yet seen it in flower.

In the first place, P. reticulata ought to have a leaf with a distinctly cordate base, not tapering to the base, still less with a base decurrent into a winged or a broad petiole. In the next place, the flower ought to have a calyx, small and short in comparison with the long flower-tube, and with recurved teeth. No specimens I have yet seen have these characters.

Amongst many packets of Primrose seed which I received from India were several labelled "unknown." One of these has produced a few seedlings, showing unmistakable leaf characters of P. Stuartii; but P. Stuartii, which I have raised from Indian seed several times, has never flowered with me before passing through two winters. Another packet has produced a few seedlings equally slow of development, having leaves conspicuous for their deep reticulation, and with a decidedly cordate base, and a very long slender petiole. A cordate base is so rare amongst Himalayan Primroses, that I believe these are genuine P. reticulata. None of them can flower till next spring, and if they are as difficult to keep through their second winter as P. Stuartii is, I cannot promise to show them in flower even then. Still I hope that those who have never before seen P. reticulata alive, will suspend their judgment, and not hastily pass off P. sikkimensis for it. *C. Wolley Dod, Edge Hall, June* 11.

CULTURAL MEMORANDA.

ABOBRA VIRIDIFLORA.

This is a very pretty, rapid-growing, summer climbing plant, belonging to the natural order Cucurbitaceæ. When well grown it is a beautiful plant, having very handsome, glossy, dark green foliage, and although the flowers are insignificant, they are succeeded by small, oval-shaped, bright scarlet fruits, which form a decided contrast with the dark leaves. It is a half-shrubby, tuberous, perennial plant, and if properly cared for, will cover a space of 10 or 15 square feet during its season of growth. The Abobra does best in a sunny situation, in deep, well-enriched soil. The seeds should be sown in March in light loamy soil in a pot or pan, and placed in a dung frame. As soon as the young plants are strong enough to handle, they should be potted into 3-inch pots, filled with light loamy soil, and grown on carefully until the weather is warm, when they may be planted outside. The roots can be taken up as soon as the frost has destroyed the foliage, and stored in a place where the temperature is maintained at 50° to 58°. "*Vick's Monthly Magazine*," *May*, 1887.

Tuberoses.

Success in the flowering of these sweetly-scented white flowers is frequently defeated, by allowing all

the suckers that spring from the individual bulbs to grow; for although all the little bulblets attached to the bulbs may have been—as they should be—rubbed off on being potted, several other breaks will, when subjected to a growing temperature, push into growth almost, if not quite as soon, as the shoot preceding the flower-spike appears from the crown of the bulb. These should be removed as soon as they appear, so as to concentrate the sap stored up in the bulbs for the production of flower-spikes, and the ultimate development of fine large flowers.

Lapagerias.

These are, after the roots have taken well to the soil, free-growing as well as free-flowering greenhouse climbing plants. They do well either planted out in a shallow, narrow, and well-drained border (such as recommended for Tacsonias at p. 706), in a compost consisting of half peat and half fibry loam, with a liberal sprinkling of coarse sand added, or in pots trained over a trellis, as specimens. Well-flowered shoots of L. alba (white) and L. rosea superba (rich crimson) are not only very effective hanging over the edge of large vases with the ends inserted in water, but they also keep fresh for a considerable time in that state. The young suckers, which well-to-do plants send up freely from their roots, should be looked well after, as the establishing of a good plant within a given time depends upon the preservation of these suckers from the ravages of slugs, &c. Young plants may be raised by layering the suckers in sandy soil. The Lapageria, unless kept well syringed overhead morning and afternoon during the summer months, especially if trained under the roof of greenhouse or conservatory, is sure to suffer from the attacks of red-spider. The plants should be kept moist at the roots. *H. W. W.*

KEW NOTES.

Landolphia florida.—This plant is now in flower in the Palm stove at Kew. A few years ago no member of the genus Landolphia existed in the Kew collections, but owing to the exertions of Dr. (now Sir John) Kirk, H.B.M. Consul at Zanzibar, the subject of the present note, as well as two or three other species of the same genus, were received in a living state. All were propagated and distributed, and much information respecting the tropical African rubber-yielding plants published in the various Kew Reports. L. florida is not only a very important economic plant, but decidedly interesting from a horticultural standpoint. It belongs to the Apocynaceæ, has stalked ovate leaves and large heads of snowy-white, sweet-scented, Jasmine-like flowers. According to Speke and Grant, L. florida is stated by the natives to yield the best rubber, and as it grows well in damp rocky ravines, where little else could be profitably grown, in all probability its introduction into some of the tropical colonies cannot fail to be of some importance. Its trunk often travels along the ground looking like a large boa constrictor, until it meets with a tree to climb up. A good figure of the plant appears in *Christy's New Commercial Plants*, No. 1, and a drawing from the Kew plant has been prepared for publication in the *Botanical Magazine*.

Streptocarpus Dunnii.

In the Succulent-house at Kew a considerable number of plants form a margin planted out between the walk and the central border on which the various large Opuntias, &c., are placed. This year some of the specimens make an extraordinary show, bearing as many as 150 flowers. This species, until after it flowered at Kew, was totally unrepresented in herbaria, and it is an instance of the good work which can be done by intelligent travellers. Mr. Dunn, one of the colonial surveyors, found fields of it in the Transvaal, and sent seeds in a letter to Kew. Its enormous leaves and huge branched inflorescences render it the most wonderful plant in the genus, and its red flowers opened out quite a new field to the hybridiser. Before long something will be heard of some remarkable crosses which have been effected by Mr. Watson at Kew. [Flowers were shown at the meeting of the Royal Horticultural Society, June 14 last. Ed.]

Oxalis brasiliensis.

Several fine pans of this species, certainly one of the most handsome in a genus which contributes not a few fine plants to British gardens, are in flower in one of the cool compartments of the new range at Kew. The species was met with by Darwin in 1867, and sent by him to Kew. Unlike many of its congeners the flowers—which are large and a fine red-purple colour—remain open the greater part of the day. In most of the species they close or refuse to open except in full sunlight. [Flowers were also shown at South Kensington on June 14. Ed.]

Hillebrandia sandwichensis.

The order Begoniaceæ, although numerous in species, contains but three genera (as the latter are understood by Hooker and Bentham), and until the last year or so the genus Begonia was the only representative of the order in cultivation. The plant mentioned at the head of this note has, however, been introduced to Kew, and is now in flower in the Begonia-house. Although not so showy as very many Begonias, it has striking foliage, and probably will become improved (horticulturally) by cultivation and hybridisation. Both the male and female flowers have five sepals and petals, and are whitish in colour. The stalked leaves are obliquely roundish-cordate, and have from five to nine irregular lobes, which are sharply serrated. A figure of the plant will appear in the *Botanical Magazine*.

Dryas octopetala (the Mountain Avens)

is now finely in flower on the rockwork at Kew; its numerous large solitary white flowers with yellow stamens are very effective. The plants cling to the limestone rock, and are well established. This mountain plant used to be frequent on the higher mountains of Scotland, England, and Ireland, but the plants have been torn from their native homes to pine away in uncongenial climes, and die from bad management in gardens.

Primula japonica

is also gorgeous in the wild garden, even more so than in the rock garden. The Kew strain of the rich dark crimson variety is the finest I have yet seen. The varieties with mottled and striped flowers are novel but not very striking. A good variety of the white form is a gem amongst Primulas.

The rock garden, taking it altogether, is very interesting at the present time; many choice alpine plants are in great beauty. The weather seems to have suited them admirably.

Dianthus alpinus

was freely producing its large solitary rose-coloured flowers of a peculiarly bright colour. It is one of the very choice rock plants. What a lovely little plant for carpeting the surface of the ground, and clinging to the rocks is the Arenaria balearica. It is now furnished with its pure white flowers—small, indeed, but large for the size of the plant. This little Sandwort is well known, but it ought to be in every garden. A companion plant to it, which I did not see in the rock garden, is

Lobelia littoralis.

It is thought to be half-hardy only, but it has grown in our rock garden exposed thoroughly to all weathers for the last four years; it covers the ground so as to form a dense carpet. Lithospermum prostratum has the most lovely of rich blue flowers, and grows most freely in a damp part on the north side of a rock. There are fine groups of the Edelweiss (Leontopodium alpinum); it has been wintered in pots and planted out, but this will also establish itself, either in the sunny, or shady parts of the rock garden out-of-doors. The Japanese Iris has established itself well on the margin of the lake, in front of the Museum. The plant likes good clayey loam, and a position where the roots can reach the water, but the base of the plants must be clear above it. Large beds of it would be very charming. Meconopsis Wallichii (the blue Himalayan Poppy) has been planted in masses in suitable damp soil in a partially shaded position. They are not yet in flower of course, but the foliage is at all times very handsome, the plant ought to be grown in all gardens where a suitable position can be found. *J. D.*

TREES AND SHRUBS.

PINUS PARVIFLORA.

Japanese Conifers are, on the whole, not very satisfactory when brought under cultivation in this country, but the present tree is an exception to the rule, it having, after a long and impartial trial, been found to be, in every sense of the word, perfectly hardy and well suited for planting in almost any part of the British isles.

The largest and best furnished specimens I have seen are growing on a rather dry, gravelly hill, fully exposed on every side, not far distant from the shore of Lough Neagh, thus showing that the tree is perfectly suited to withstand our most severe winter frosts and coldest winds.

Pinus parviflora is a tree above all others that is well suited for isolated planting, its pretty light green foliage, compact but not stiff habit of growth, and perfect hardihood rendering it valuable in this way. There is, moreover, a warmth and quite-at-home attitude belonging to this Pine that is best shown off in the isolated specimen that is placed far away from its neighbours, and on the greensward. It never attains to a large size—about 40 feet in its native country—although one of the trees above referred to was upwards of 30 feet high, and with a fine sweep of bright, healthy foliage. Few trees are capable of accommodating themselves to such a variety of soils as the one under notice, for I know of one estate at least on which grand specimens of fully twenty years' growth may be seen within a radius of 3 miles, and growing on peat bog, dampish loam, and a free, open gravel where hardly a yard in depth of loam overtops the stones. The whole outline of Pinus parviflora is somewhat after a ragged specimen of P. Cembra; or, to be more explicit, it puts me in mind of certain open-habited trees of the latter which one frequently meets with where P. Cembra is grown in quantity. Unlike P. Cembra, however, the branches of P. parviflora, although somewhat closely packed, are not of erect growth but almost horizontal and with the tips usually pointing skywards, and this is very noticeable when the tree is growing alone or at a distance from any other. The branches are quite the opposite of harsh and stiff, being soft and lithe, well furnished with branchlets, and with short light green leaves arranged in fives. They are 1½ inch long, more silvery on the under than upper side, and although produced thickly and being persistent for some years, yet the foliage on the whole must not be considered as tufty. In the cone we can readily detect a likeness to that of P. Cembra, the scales being large and rather loosely packed, while the wingless seeds are of unusual size for the bulk of the cone. About 3 inches is the usual length of full matured cones, and the greatest diameter fully 1½ inch. The male cones or catkins are a highly ornamental feature of the tree, they being of a bright and conspicuous golden colour when fully ripe, and from their being produced in great abundance and in close, compact spikes of 2 or 3 inches long, have a decidedly pretty effect in the early spring. We have raised seedlings of this distinct Pine from English-grown seed, and the operation requires neither much time, attention, or experience. A garden frame was half-filled with fine leaf-mould, and a small quantity of sand added, the whole pressed firmly down, and the seeds sown thinly and covered with an inch of free sandy leaf-mould. The seeds soon germinate, and the young seedlings make rapid progress with the

aid of a glass light placed over them at night, but removed or tilted during the day. *A. D. Webster* [Because a plant may be hardy in the moist uniform climate of Ireland, where hard winters are of rare occurrence, does not prove that it would be capable of withstanding the winter of the Midland or Northern parts of Britain. We should like further particulars of its behaviour from these localities. Ed.]

Colonial Notes.

CAPE AND NATAL PLANTS.

In common with many others, I had often read and heard of the great difference between the flora of Western and Eastern South Africa, but it was not till very recently that a visit to Cape Town enabled me in a small degree to see and judge for myself. I left Durban the last week in May, a month before our shortest day. All vegetation was quite at rest; everywhere, save on the coast, where some quantity of rain falls in the winter, the soil was parched, and the air dry and cool. No plant was to be seen in bloom save Leonitis Leonurus, and a stray Polygala variegata. The coast bush presented a dark green mass of tropical forest, unrelieved by any coloured flower, and composed of Ficus (two species), Hibiscus tiliaceus, Carissa grandiflora, Mangroves, Sponia guineensis, Acacia (two species), Brachylæna discolor, and many other trees and shrubs.

Arriving at Port Elizabeth, what a contrast!—the very dry, sandy, rocky coast looks barren in the extreme, sparsely covered with many small dull green plants. Frost is hardly known here. On landing, the difference in plant-life was more marked than ever. I had only come 350 miles, yet every plant was new to me. The hard, small-leaved plants strongly contrast with our glossy, large leaved shrubs. Even in the Botanic Gardens the cultivated plants were of a different class to those one sees in Natal. Great Echiums and Statices, 4 to 7 feet high, covered with flowers; brilliant Mesembryanthemums, and the gorgeous Strelitzia juncea—a plant I had not seen for many years. In a cool greenhouse Adiantum Farleyense was in very fine form, both large and small. With us this Fern is rarely seen in presentable condition.

Two more days' steaming brought us a further distance of about 600 miles to Cape Town, or 1000 from Natal. Cape Town by turns has been praised, and abused, according to the aspect from which it has been seen. Mr. Froude, in his *Oceania*, puts in a good word for Table Mountain, and truly it is a splendid sight. Straying about the narrow streets and lanes, I often turned admiring eyes upward—*Levavi meos oculos*—and there, tier above tier—each seam in the grey sandstone brought out by the brilliant sun with photographic minuteness—was the magnificent mountain rising near 4000 feet, "so near and yet so far." Often a passing white cloud swept by it, or was detained—earth and sky seeming to mingle. Beautiful it was to see, and the description of it worthy the pen of a Ruskin.

The Cape peninsula differs from Natal in soil, climate, population, and flora. It might be thought that no fresh discoveries on or about Table Mountain could now be made by the plant collector, since this part of the country has been diligently sought over for nearly the last two centuries; but, as is well known, localities most scrutinised, yield most. Several new Orchids have been found lately near Cape Town, and Disa grandiflora, and Leucodendron argenteum are known to grow in localities several miles from Table Mountain.

A very few days spent in Cape Town showed me but one native plant common to Natal, the handsome yellow Crotalaria capensis. Here, in the end of May, I found plants freshened by cool winter rains, just starting into growth; Antholyza æthiopica, showing bloom; Hæmanthii and many other bulbs pushing up their first leaves.

The delightful suburbs of Cape Town, where Oak leaves lay,

> "Thick as autumnal leaves that strew the brooks
> In Valombrosa,"

are so different to anything we have in Natal. They seem English under an African sky. The Stone Pine thrives here very well, forming large woods, planted of course. I was interested to observe self-sown seedlings springing up amongst a thick growth of Proteas. Pressed by time I was unable to give a whole day to the ascent of Table Mountain, hence I missed the grand view from the top, and cannot give an exact description of Disa grandiflora as seen on the spot. In recompense—but this was several months later, in October last—I saw some very good Cape bulbs as cultivated in the Botanic Gardens; species of Babiana, very rich dark blue; Ixia conica and I. crateroides, finey ellow; I. viridiflora, blue-green, a remarkable tint—I compared it to verdigris; Ornithogalum thyrsoides, white, very showy; and the deep crimson Tritonia fenestrata. *R. W. Adlam, Maritzburg, Natal.*

Kimberley

Last week there were exhibited at the Commercial Exchange some very excellent Apples grown in the Public Gardens at Kimberley. Amongst the many wonders of the place where Cauliflowers were once sold, or said to have been sold, at a guinea apiece, not the least wonderful is the recent conversion of Kimberley into a veritable garden. In good time, instead of forwarding Grapes from Cape Town to Kimberley, we shall doubtless be having some Kimberley Grapes here. Everything at Kimberley, of course, depends upon water artificially supplied. which costs much money; but then there is the money at Kimberley. The London and South African Exploration Company are enclosing all their plots of ground with "live" hedges, and are going on with tree planting wherever practicable. It is true that some trees will not grow about Kimberley; but this cannot be true of all kinds, as it is well known that before the advent of the digger the whole neighbourhood of Kimberley was more or less wooded with the trees that have since been cut down for firewood. Parts of Bechuanaland are even now thickly wooded — for South Africa. The Kameeldoorn and the Mimosa are indigenous to the district. The Kameeldoorn cannot be relied upon for re-afforestation, as it requires so long to come to maturity—a century is said to be a mere episode to this venerable vegetable; but the Mimosa would grow quickly, and will doubtless be made use of to a large extent in the process of beautifying Kimberley that is now happily going on. "*Cape Argus*," *February* 21.

Plants and Their Culture.

Climbing Plants.—A selection of climbers is indispensable for fastening to the roofs of conservatories and other large houses, but when these are left to make a crowded growth and to be disfigured by insects, their appearance, instead of being graceful, becomes uninviting. Another reason why they are found in an unsatisfactory state is that the plants are placed in unsuitable situations, for if a sun-loving plant is placed in a shaded position and *vice versâ* neither will do well; whereas, if the situations were reversed, both would succeed. Established plants of the strong growing species, such as Passifloras, Tecomas, Bignonias, Tacsonias, Thunbergias, Cobœas, &c., at this season make much growth and require frequent attention to keep their shoots thinned out and regulated. In training this class of plants the most effective and easiest way of managing them is to secure the main leads to the rafters or trellises, and allow the laterals or flowering shoots to hang and form a screen. The syringe should be used daily and with sufficient force to dislodge insect pests, and one of the chief causes of attacks from thrips and red spider is an insufficient supply of water at the roots. It takes a great quantity of water to maintain these fast-growing plants in good condition, and liquid manure administered during the summer months will be of great assistance to them.

Of Passifloras, quadrangularis is one of the best stove varieties for covering a large space, and P. Impératrice Eugénie takes a similar place amongst greenhouse kinds; while for covering limited spaces in warm houses the small-growing P. Kermesina is unsurpassed. I was struck with the beauty and floriferous character of this species last spring at Gunnersbury Park, where it was grown in pots and trained under the roof of a stove. Tacsonias enjoy a warm greenhouse temperature, but are impatient of a close atmosphere. T. Van Volxemi and T. exoniensis are the most useful sorts, and make excellent companion plants for clothing the roofs of large houses; both varieties possess free-flowering habits, but the latter has the best constitution, and should be preferred where one only is needed. Dipladenias should be kept in a light position, with a brisk temperature, free from drought, have their shoots trained out singly over the trelliswork, and be syringed thoroughly at closing time; by this means insects will be kept in check. At all times they require careful watering, but are benefited during their flowering season by occasional waterings of clean liquid manure; and to keep the blossoms in good condition they should be guarded from the sun. Clematis indivisa and C. indivisa lobata are free spring flowering plants, not so frequently grown as they deserve to be; they have a neat habit, and are admirably adapted for covering the roofs of greenhouses. Lonicera semperflorens minor is an easily cultivated almost hardy greenhouse plant, profuse flowering, and very suitable for covering a wall, its cheerful looking trusses of flowers make capital subjects for flower glasses, &c. *Thomas Coomber, Hendre Gardens.*

The Kitchen Garden.

Sowings: Peas.—The last sowing of late kinds of these should be made at once in trenches, and for a late supply, early kinds being preferable for these last sowings, which should extend from the middle of July to the first week in August. If the ground be dry, the drills before, and after sowing should be well watered, and afterwards, with all other late crops of Peas, mulched with dung litter for a space of 2 feet on each side of the rows. Continue to earth-up and stake advancing crops, and where there is an excess of haulm before flowering, the leading shoots should be pinched out when they have reached the top of the sticks. Those in full bloom and podding should be looked to, and if any signs of dryness at the roots be apparent, means should be taken to give them a thorough soaking, either with clean water, or, better still, with diluted liquid manure.

Broad Beans.—To assist the podding, these should be topped when some of the earliest flowers have set, and the pods commenced swelling; another small sowing, which should be the final one for the season, can be made.

French Beans.—More seed of these should be put in, to meet requirements, and the earlier ones earthed-up, and, where necessary, supported by small twigs, or by soft string stretched along the rows and supported at intervals.

Scarlet Runners may still be sown, and where the earliest planted ones have not proved satisfactory it will be better to plant afresh. Before staking is done the soil between the plants should be lightly forked over, and afterwards drawn up to support them; the stakes best suited for the purpose are Ash, and these should be at least 8 feet in length; and when placed in position should cross each other about 6 feet from the ground, and be secured to rods placed horizontally between the stakes. During hot dry weather Runner Beans, like Peas, are greatly assisted in setting their pods by waterings and by mulchings of litter.

Broccolis.—These should be planted out permanently and in rotation as the various kinds become large enough; moderately rich firm ground facing south is to be preferred for planting on, especially for the winter and spring plantings—allowing a space of not less than 2 feet between the plants; the object being to promote a sturdy compact growth, properly developed and matured, in order that the plants may be in a proper condition for withstanding frost. Shallow drills should be drawn out for planting in, which will be found an advantage when earthing-up has to be done later on. For earliest supplies after "Snows," we rely principally on Veitch's Spring White, Adam's Early, and Knight's Protecting; while for general and late use nothing surpasses Leamington, Sutton's Late Queen, and Gilbert's Victoria: all of these stood the late winter well, particularly so the three last-named. Continue to prick out seedlings of these and others of the Brassica tribe that are required for succession, in good time, and before they become drawn and weakly in the seed beds. Winter stuffs of all descriptions should also be planted out, when sufficiently advanced, and as favourable opportunities for doing so occur. Independent of the regular quarters, necessary for the proper production of these crops, any spare ground under trees, or unsuited for the better class of Brassicas, could be utilised, by being planted with the various kinds of Kale. *J. Austen, Witley Court Gardens.*

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APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

FRIDAY,	June 24	Royal Botanic Society: Lecture.
SATURDAY,	June 25	Royal Botanic Society: General Meeting.

SHOWS.

TUESDAY,	June 21	Salterhebbe Rose Show. Leeds Horticultural Society (four days). Royal Oxfordshire Horticultural Society.
THURSDAY,	June 23	West Suffolk (Bury St. Edmund's) Horticultural Society (two days.) Ryde Rose Show.
FRIDAY,	June 24	Scottish Pansy Society, at Oddfellows' Hall, Forrest Road, Edinburgh.

SALES.

THURSDAY,	June 23	Sale of Valuable and Extensive Importation of Orchids, from Messrs. F. Sander & Co., at Stevens' Rooms.
FRIDAY,	June 24	Sale of Imported Orchids, at Protheroe & Morris' Rooms.

An Era of Progress.

In the year 1837, four years only before the first appearance of this journal, Dr. Lindley, subsequently its Editor, described and figured the Victoria regia. It had been discovered some years previously by Haenke, D'Orbigny, Schomburgk, and others, but Lindley was the first to describe and formally register it in the record-book of botanical science. It was a fitting tribute to the young Queen, and nothing that has been since introduced has proved more worthy to bear Her Majesty's title—a fact which, after fifty years of activity in exploration and introduction, is of itself worthy of note.

Thirty-eight years subsequently Mr. Thomas Moore, then one of the Editors of this journal, described formally and figured an Agave under the name of Agave Victoriæ Reginæ, which his colleague had recognised at Cologne as a new and most charming species. The years that have elapsed have not displaced this Agave from its position, and that it merits its place is shown by the illustrations we give (fig. 154, p. 807). Besides these two species, numerous garden varieties and hybrids bear the Queen's honoured name. We cannot cite a tithe of these; suffice it to mention the Rhododendron raised by Mr. Charles Noble, and called by him, appropriately enough, The Queen; it still remains one of the very best white Rhododendrons. More recently Mr. Bennett has supplied us with a Rose, Her Majesty, of which it may fairly be said that those who have been privileged to see it once wish to see it again, and those who have not enjoyed that good fortune, look forward eagerly to the time when they too shall be favoured. For the rest, there is a purple-edged Picotee, still held in high esteem; there are Pelargoniums and Begonias, Crotons and Dracænas, and we know not what besides, which bear Her Majesty's name.

The Royal Jubilee suggests, of course, a retrospect of the progress of horticulture since 1837—and what a progress it has been! More: that progress has been mainly consequent on wise and beneficent legislation, as a result of which wealth and knowledge have increased and become diffused, and the duties and taxes on glass and countless other things that hampered knowledge and throttled commerce have been reduced or entirely removed. Improvements in heating have rendered horticulture possible to thousands to whom in 1837 it would have been impossible. Newspapers and magazines, once dear, are now produced in profusion, and at prices to suit all purses. Illustrations, once confined to the wealthy, are now to be had by the cottager. Flower-shows are held in a large proportion of our towns and even villages. Knowledge, culture, taste, have by these means been immeasurably developed since 1837, and as a necessary consequence the science and art of horticulture have wonderfully advanced, to the benefit not only of the wealthy, but of the meanest subject in Her Majesty's dominions. This progress is shown, not only in the development of Kew into the premier garden of the world, but in the multiplication of the gardens of rich and poor alike, and also in the formation of parks and the planting of open spaces in towns—a boon of inestimable importance to the health of the residents; but one, the value of which was very imperfectly recognised in 1837, and one which still stands in need of further development.

In 1837 Loudon and Lindley, and William Hooker had made themselves great names. Dean Herbert was a type of a scientific horticulturist. Later on in Her Majesty's reign came the younger Hooker, and, *salve magne nomen*, Darwin! Collectors and explorers, undeterred by the fate of Douglas (who just precedes this era), enriched our gardens with countless treasures; for illustration sake, two only need be mentioned—Dr. (now Sir Joseph) Hooker, to whom we owe the Sikkim Rhododendrons, and Fortune, to whom we are indebted for such a profusion of fine things as well entitle him to a grateful place in the recollection of horticulturists for all time.

About 1837 the first florist's Fuchsias, and the first hybrid perpetual Roses were introduced, but there were then practically no tuberous Begonias, no Clematises, no Calceolarias, no zonal Pelargoniums, no Cyclamens, no Lobelias, no Coleuses, no Crotons. no Dracænas, no Marantas, no Caladiums. Tulips, Auriculas, and Polyanthuses have until lately not advanced proportionately, or, to put it differently, there were some sorts at the time of Her Majesty's accession, as good as some of those we have now.

But what do we not owe to the "raisers"?—the Rivers, the Pauls, the Turners, the Standishes, the Waterers, the Anderson-Henrys, the Jackmans, and so many others, who have since 1837 worked, as they and their successors still are working, unremittingly, towards the improvement and increase of our resources.

As to vegetables, while there has been undoubtedly great progress, some of the old sorts, such as the old Victoria Marrow and Knight's Marrow Pea, could they be obtained true, would be difficult to beat even now. We believe this comparative stagnation—it is, of course, only comparative—is due to the habit of ringing the changes on one set of bells, or shifting the kaleidoscope, instead of introducing new blood, making the most of new breaks, and especially by the practice of haphazard rather than strictly systematic and scientific cross-breeding.

The culture of indoor fruits, especially Grapes, has marvellously increased, and not only is their cultivation better understood, but the sorts are better. On the other hand, improved means of communication have nearly put an end to Pine-growing, and to some extent interfered with the profits of hardy fruit culture.

In matters of taste great changes have occurred. The Proteads, the Heaths, the New Holland plants, the Cactuses of our predecessors have nearly vanished, but the culture of Orchids has enormously increased, to the great advantage of science, and the prodigious development of the culture of "market plants," and the increase in the "cut-flower" trade, allow millions to enjoy what was in 1837 a luxury for the rich only. The record of the changes in the fancy for particular groups of plants is given in the articles now publishing in our columns on the "History of the *Botanical Magazine*."

Hardy perennials and alpines which were almost driven out of existence in our gardens by the glare and blaze of the bedding system, are again finding favour, to the comfort of many eyes, and the infinite satisfaction of those interested in flowers for their own sakes rather than as items in a patchwork quilt. For this change gardeners and garden lovers have specially to thank Mr. William Robinson.

In India and the Colonies great progress has been made in the development of new, and in the improvement of old resources. Tea culture has become a flourishing industry. Cinchonas have been imported from their Andine homes to flourish on Indian hill-sides, to the incalculable benefit of mankind. For these really prodigious benefits the public owes its thanks to the botanists and horticulturists who are now turning their attention to similar work in the case of Rubber trees and other products of importance to commerce and industry.

The botanists, too, have been unceasingly at work in other ways, but till lately it seemed as if the describers, cataloguers, and classifiers were to have the field to themselves; though of late years vegetable physiology has made great strides, to the certain ultimate benefit of practical horticulture, though it takes a surprisingly long time for even the rudiments of physiology to filter into the minds of practitioners.

One glorious name stands out in this connection—that of the Newton of natural history—Charles Darwin. He worked continuously in his garden, and his researches in vegetable physiology, in the fertilisation of plants, and in that most marvellous and most fascinating subject of root-growth, not to speak of numberless other matters, will influence the future of gardening for centuries to come.

We have touched but cursorily and superficially on the vast progress that has been accomplished since 1837—progress which should inspire us with gratitude for the past and hope for the future, and which well might, one would think, have stayed the pen of the whilom owner of Locksley Hall.

The work done at Chiswick.

The deplorable condition of the affairs of the Royal Horticultural Society will form the subject of discussion at a meeting to be held at South Kensington on the 28th inst. Almost perfect silence has hitherto been maintained by the governing body since the general meeting, when an outside committee was appointed to confer with

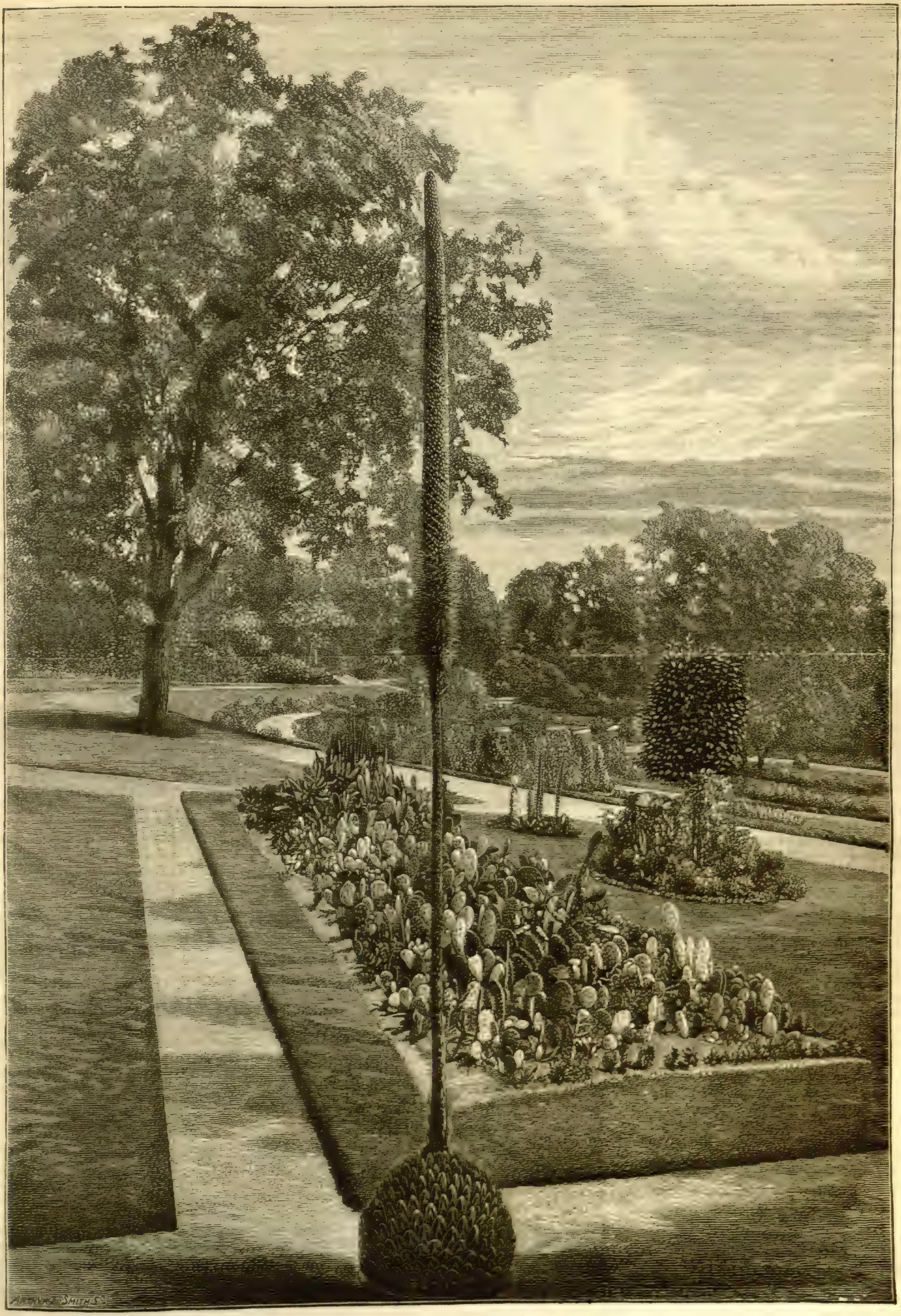

FIG. 154.—AGAVE VICTORIÆ REGINÆ: CAMBRIDGE (U.S.) BOTANIC GARDENS.

the Council. The Fellows have up till now been left to draw their own inferences from what they see around them. It may be—we hope it will be—that the Council are preparing a surprise for us, and that they will be able to put forth some scheme for rehabilitating the old Society. It is not the first time in the history of the Society, that bad times have befallen it, so that we see no reason to give way to the feeling of despair which has come over some of the Fellows, though we cannot wonder at the discouragement which is felt by those who have for years past devoted so much time and labour to the work of the Society, and as it seems in vain.

It may be—and if so, perhaps so much the better—that the Society will have to begin *de novo*. This view of the situation is the one that will commend itself to those of its well-wishers who are at all conversant with the history of the Society. The great advantage of South Kensington is that it is convenient of access, and still affords a suitable place for flower-shows. Doubtless, arrangements might also be made for the erection there of suitable committee rooms, meeting rooms, and libraries. The connection with the Commissioners, however, has been so disastrous, and the attempts to cater for the amusement of the fashionable residents of the West End so futile, that it is no wonder a strong feeling exists that the Society should cease to care about such things and be entirely free to pursue its legitimate work without let or hindrance.

Assuredly, however, whether the Society find quarters in proximity to the Imperial Institute, or elsewhere, it should in some way or other be represented in that Institution. The agriculture of the Colonies, the development of old, and the establishment of new resources are in a very large measure indeed the proper work of botanists and horticulturists, and the Society will not rise to the level of its duties if it do not make some effort to be represented in the work of the Institute.

The results of the meeting on the 28th inst. will, therefore, be looked forward to with keen interest by all interested in the Society's affairs, and if any acceptable scheme of reorganisation be proposed, we are sure that it will be heartily welcomed by all who have the welfare of the Society at heart. The Society has done incalculable good in the past, and only wants sympathy and practical support to enable it to carry on its high mission with even greater results, in the future.

The real work of the Society is done at the committees and at Chiswick. Good practical work is still done in the old garden, quietly and unostentatiously, although its resources are terribly crippled by want of means and a greatly reduced labour-sheet. In any scheme for reform the nature of the work to be done in future at Chiswick should be fully discussed. Useful as much of what is now done undoubtedly is, there is a good deal that is hardly within the proper scope of a horticultural society, and some things that are inconsistent with its dignity. It is scarcely necessary to refer to what has been done in the past; we will only refer to the record of the last few years for the purpose of showing what useful work has been done at Chiswick, even in this period of its lowest depression.

Firstly, the important trials and experiments carried out there under the auspices of the Fruit, Floral, and Scientific Committees of the Society. Too much of this work has remained publicly unrecorded, and its permanent value is consequently to some extent lessened; but what the Society's impoverished exchequer has not permitted it to do has been largely effected by the Press.

The Conferences which have been held at Chiswick on two of our popular fruits—the Apple and Pear—were strikingly and extraordinarily successful. Who that witnessed it can forget the enthusiasm that was aroused by the exhibition of the first-named fruit? We shall probably never again look upon its like. Moreover, it was the means of enriching horticultural literature by the issue of *British Apples*—a work of enduring and first-rate value.

As to the Pear Conference—although the display was necessarily not of the same generally attractive nature, yet the results achieved were quite as satisfactory as regards the nomenclature of this fruit. The Pear Conference Report, the outcome of that gathering, is now in the press, and it will form a fitting companion to that devoted to the Apple.

It is, however, not necessary to advert at greater length to the past; the question is, What is the Society doing now at Chiswick? To answer this question fully and satisfactorily would take up much more space than we could devote to it. It must suffice to say that for some years the trials have not been on so extensive a scale as they are this season. A keen interest has been excited in them by the authorities, with the gratifying result that some good and interesting collections have been brought together, to which, of course, on the present occasion we can only give a passing notice.

Beginning with the Potato. There are 136 sorts on trial this season, and they are at present looking very well and have not been damaged by spring frost. Of the number above stated one hundred sorts have been sent in from various sources this year. The remaining varieties are being tried again from last year.

Seed of fifty-two sorts of Onions has been sown which have germinated freely, unlike to some recently noted in these columns. Peas are represented by 140 sorts, or, at any rate, names, so that some considerable interest will be excited later on in this vegetable alone. The "earlies" are now in flower, and all are growing vigorously. One hundred varieties are those of this year's sending in; the others, older and well-known sorts, are being grown for purposes of comparison. This is very desirable with such a subject as the Pea, grown, as it is now, in almost bewildering variety.

Of that popular vegetable, the Tomato, there are eighty-six lots in all, comprising about seventy-five sorts, the same sorts being in some cases sent by two people. Two plants of each variety are being grown in pots. They are doing well, and promise an abundant crop. Some of the well-known kinds grown last season are again in cultivation this year. Amongst noticeable kinds may be mentioned:—Ham Green Favourite, red, smooth, medium-size, great cropper; and Horsford's Prelude, another red, but smaller, an excellent variety where small fruits are esteemed. From that land of Tomatos—America—comes a good contingent, which we hope will do their native country due credit. In addition to those in pots, the whole collection is planted outside on a south border. This will prove which are the most adaptable for outdoor culture—after all, probably, the "culture" which will have most interest for the public.

Eighty-five sorts of Cabbages and Savoys have been planted, which, when fit, will be very interesting and valuable for purposes of comparison and selection. Of Cauliflowers, thirty-five sorts are being tested.

A very interesting and varied collection of Rhubarb was got together a few years since, and they have been growing with all their wonted vigour this year. Perhaps the best six sorts would be found in the following:—The popular Myatt's Victoria, Hawke's Champagne, Dancer's Early Red, Scotch Mammoth, Crimson Perfection, and Johnston's St. Martin.

Of Apples and Pears all the worthless varieties were destroyed after the "Conference" devoted to these fruits. They had served their purpose. Only good sorts have been retained. There is promise of a heavy crop of Pears. One of the features of the garden in the not distant future will be a west wall on which oblique cordon Pears are planted, all the best sorts having been selected. Apples are looking well, and promise a good return. There is a trial of "stocks" being carried on, about 400 having been "worked" last season. This will be very useful as proving the indeed important question of the best stocks to use, thereby saving much vexation of spirit, and that all-valuable commodity in this life—time. The same variety is in many cases worked on six different stocks, including Paradise (English and French), Doucin, Crab, &c.

Of the Strawberry, seventy varieties were planted last autumn; these are doing well. The Strawberry crop this season will probably be a heavy one, the plants showing a remarkable amount of bloom; being late it has escaped the usual spring frosts. The sorts that do best here are Sir Joseph Paxton, President, Napier, Viscomtesse Hericart de Thury, Eleanor, a good late sort; Waterloo, a new late kind with a very fine fruit, almost black when ripe; George Lesure is a fine-flavoured sort; Noble (Laxton), a promising early. James Veitch was the first to bloom here, but Viscomtesse Hericart de Thury is generally the first to ripen.

There is a collection of fifty-eight sorts of Peaches (planted last year), and twenty-four varieties of Nectarines. These will make a fine show in a few years' time. There is a good crop on the old trees.

Among flowers, annuals are being tried more than usual this season, and they will present bright and pleasing patches of colour in due time. Coming features will be a collection of Asters, also of dwarf Tropæolums. Some twenty beds are devoted to that beautiful section of Iris, I. barbata, the bearded Iris, commonly called German or Flag; the flowers of which are large and handsome, rivalling indeed those of many Orchids. We may devote a more extended notice to these when in bloom. Of other flowering subjects on trial may be mentioned zonal and Ivy-leaved Pelargoniums—a collection of the latter promises well; a collection of Fuchsias comprising over 200 varieties—tuberous-rooted Begonias, Heliotropes, and Gloxinias; whilst amongst foliaged subjects may be mentioned the beautiful Rex type of Begonias, and the equally beautiful and interesting Adiantum. A very interesting feature in the flower way at Chiswick this year will also be the trial of Stocks—English *versus* German.

The trials of these numerous subjects are undertaken for practical and commercial purposes only, and it would not be inconsistent to request the Trade to contribute towards the expenses. The opportunity they afford of advancing scientific horticulture is also so great that we hope some members of the Scientific Committee or others, will avail themselves of what is really a unique opportunity. Unfortunately time does not increase in proportion to the multiplication of opportunities, and many of

those who could do good work are the foremost to deplore the lack of the necessary leisure.

The Long Vinery, as it is called, promises well for a good crop of that fine-looking Grape, Gros Colmar; and the huge conservatory—now better known as the Big Vinery—also looks well. "Thinning" is now the order of the day there—a big business in such a structure.

If things look dull and gloomy at South Kensington, life and activity prevail at Chiswick, they bespeak an energy and an interest in the Society that we hope and believe is a happy augury and omen of good.

Of the general condition of the garden itself we may say that, all things considered, it is very good.

Finally we may note that the Chiswick Horticultural Society's Flower Show—an important one this season—will be held in the Chiswick Gardens on July 14 next.

The "European Mail" and the "Colonies and India."—Under the editorship of Mrs. Carey-Hobson and Miss Buckland, there will be published in July next a novel and notable addition to the *European Mail* and the *Colonies and India*, in the form of a "Household Supplement." This will be issued gratis with the several editions, which make the circuit of the entire civilised world. Mr. Percy Russell has been engaged to supply an entirely new and original serial story, entitled "The Treasure Tree: a Romance of New Guinea."

Rating of Nurseries.—A public meeting of nurserymen will be held, under the auspices of the Nursery and Seed Trade Association (Limited), on Tuesday next at the Horticultural Club, Henrietta Street, Covent Garden, W.C., to take into consideration the excessive rating of nurseries, and to agree on a combined course of action with a view to the reduction of assessments. It is quite time that some action was adopted whereby our heavily handicapped nurserymen and market growers may successfully compete with the foreigner in our own markets. The holders of various vested interests who cling to their assumed rights with their proverbial tenacity must be made to give way in the interests of home growers, nor do we believe that either the former or the general consumer will suffer in the end. With more capital invested in the home production of flowers, fruit, and vegetables the demand for labour will be increased, and greater quantities of agricultural land will be taken up for these commodities at more than agricultural rentals.—Mr. F. C. Goodchild, Secretary of the Horticultural Club, informs us that the meeting announced to take place on the 28th inst., is postponed from 4 p.m. till 6 p.m., with the view of consulting the convenience of nurserymen and others who are desirous of attending the meeting of the Royal Horticultural Society.

An Editor's Duties.—The demands made upon us, though satisfactory in one sense, are sometimes embarassing. As we write, we have before us a letter from Japan, and written in the language of that country, and another in modern Greek. Other letters reach us to-day from Natal, Cape Town, Ceylon, India, Hong Kong, fortunately in English, besides the usual contingent from Germany, France, and other European countries. A short time since we received an application from a subscriber to recommend him a wig-maker, while another correspondent sought our assistance for a motto, to be inscribed on an umbrella handle!

"Annals of Botany."—It is proposed to publish from time to time, under the above title, original papers, adequately illustrated, on subjects pertaining to all branches of botanical science, including morphology, histology, physiology, palæobotany, pathology, geographical distribution, economic botany, and systematic botany and classification; also articles on the history of botany, reviews and criticisms of botanical works, reports of progress in the different departments of the science, short notes, and letters. A record of botanical works published in the English language will be a special feature. The *Annals* will be printed and published by the delegates of the Oxford University Press, a fact which is in itself a guarantee of the care with which the printing and illustration will be executed. They will be edited by Professor Bayley Balfour, of the University of Oxford; by Dr. Vines, Reader in Botany in the University of Cambridge; and by Professor F. G. Farlow, of Harvard University, Massachusetts.

Rhododendrons and Novelties at Knap Hill.—The display of Rhododendrons and Azaleas at Knap Hill is marvellous, not only in extent, but for diversity and quality. We cannot go into details on this occasion, though we may have something to say later on. Meantime, the new Azaleas should be critically looked at and especially the crosses between A. occidentalis and A. mollis, which are likely to be specially valuable as extending the season of Azaleas owing to the late-flowering tendency of the first-named species. Two fine new Lilacs are Souvenir de Louis Spath, with the habit and form of flower of Dr. Lindley, but with larger flowers of a deeper purple colour; Marie Le Greye is the name of a new white Lilac of great beauty: æsthetic people might describe the flowers as statuesque. We cannot omit even from this paragraph alluding to the striking beauty of the Blue Spruce, Abies pungens glauca (the Parryana glauca of gardens). It is impossible to say too much of the beauty of this, but it must be remembered that individual plants vary greatly in amount of glaucescence while the type is green. Even in this state it is amply worth growing for its compact bold habit. It is quite hardy, and does well, as we know, on soils of varied character.

A Bouquet for the Queen.—Mr. F. Sander desires us to insert the following request to cultivators of Orchids and others:—

"We are commanded by Her Majesty the Queen to make an Imperial Jubilee Bouquet, and our needs being very great and pressing in this instance, we shall esteem it a particular favour if you will assist us as far as possible with cut spikes of Orchids, in which case we promise on our part to reciprocate the favour to any extent you should require of us at any future time. The bouquet will be made by Buck, of Covent Garden, in Stevens' Auction Rooms on Monday next, and will be on view there when completed from 4 to 7 o'clock p.m., and we should be glad of your visit of inspection if convenient. It is to be the largest and finest bouquet of Orchids ever seen, and will be nearly 4 feet in height, surmounted by the crown worked out in selected colours; also the letters "V. R. I." will be made to appear in like manner on the side of the bouquet, which will be exhibited in Buckingham Palace on Tuesday next in the Premier Prize Vase, recently presented to Mr. F. Sander by the Empress of Germany for the best collection of Orchids at the Dresden International Exhibition. We are most desirous for complete success in this great undertaking, and trust we may be favoured with your valuable assistance and co-operation. We shall take the liberty of sending a special messenger very early on Monday morning for such flowers as you may be able to spare us, and your reply in course of post will much oblige."

In other cases the flowers could be sent direct to Mr. Buck, Centre Row, Covent Garden, W.C., stating the purpose for which they are intended.

Schizanthus as Greenhouse Specimens.—One of the floral features in the plant-houses at the Botanical Garden, Old Trafford, is some very fine specimens of Schizanthus now in grand bloom. As visitors to the Exhibition are privileged to pass through the houses containing the plants, they appear to look upon them with something akin to wonder. Mr. Findlay grows grandiflorus, pinnatus, and retusus, to get variety. The seeds are sown in September, and the plants potted into 8-inch pots when large enough, placing three plants in a pot. They thus make highly valuable decorative specimens, 4 feet or so in height, carrying dense and highly effective heads of bloom.

The Oxford Carnation and Picotee Union.—The annual exhibition of this flourishing Society is fixed for Tuesday, August 2, and will take place, as usual, in Mr. Dodwell's garden, Stanley Road, Oxford. Mr. Dodwell has just brought out a second edition of his work on *The Carnation and Picotee*, with a new introduction, and an appendix giving the new flowers of the past year, and so bringing the lists up to date. The book is admirably got up, and will be found an excellent guide for growers of Carnations and Picotees, and especially to young beginners.

The Agricultural Hall, Islington.—This old place of bovine and other—notably military—spectacular entertainment is going to be turned into another Arcadia, so says the "Notice to the Trade" which lies before us. There may be something Arcadian there, as there is something Olympian at Kensington, only the Arcadians will fail to appear, as have the Olympians at the other place. We observe that several cups in gold and silver and medals will be given for horticultural productions, groups, baskets, and garden furniture.

Notices of Books.

The Ancient Cities of the New World: *being Travels and Explorations in Mexico and Central America from* 1857—1882. By Désiré Charnay. (Chapman & Hall.)

In reviewing the above work on these wonderful ruins, Mr. A. D. Keane says, in the *Academy* for May 28:—

"M. Charnay has solved . . . the great tree question, showing that the concentric circles of the Mahogany and other local species correspond, not to so many years, as had been supposed, but rather to so many months, if not even to shorter periods of growth;" and he quotes the following passage from his author in proof of this assertion:—"Chancing to cut a twig some eighteen months old, I counted no less than eighteen concentric circles. To assure myself that this was not an isolated fact, I cut branches and trees of every size and description, when the same phenomenon occurred in exactly the same proportions. More than this: in my first expedition to Palenque, in 1859, I had the eastern side of the palace cleared of its dense vegetation to secure a good photograph. Consequently the trees that have grown since cannot be more than twenty-two years old; now one of the cuttings, measuring some 2 feet in diameter, had upwards of 230 concentric circles—that is at the rate of one in a month, or even less." (P. 260.) "Thus collapse," Mr. Keane continues, "the extravagant estimates of 2000 years (Waldeck), 1700 (Lorainzar), and others, assigned to these ruins on the assumption of the great age of the trees by which they are overgrown." And certainly the above quotation appears to open up a train of grave speculations. Are these "tongues in trees" lying tongues? Have they betrayed our confidence, and destroyed all our notions of history as written by the finger of the Creator? It seems to me, if this solution proves correct, all our beliefs in kindred sciences must be revolutionised, and our studies therein carried back to their A B C, since, if these tree biographies are false, who shall assure us that the rocks speak truth? Who shall prove to us that Geology has made out its case, and that the granite, instead of being an igneous unstratified rock, and the oldest of its family, is not of quite recent formation, and distinctly stratified, only that we are too stupid to discover its line of cleavage? The above speculations seem to me of so much importance, that I venture to beg you to take up their discussion, and invite your readers to collect facts in disproof or verification of a question of so much in-

terest. I say facts advisedly, since theories, though often very beautiful, are of small service in a case like this; and unless some correspondent can say, with the heathen Chinee, "I relate but the facts," I fear M. Charnay's solution of the great tree question must remain as a standing reproach to our botanists and scientists. *C. N.*

[The testimony of the trees and rocks is beyond suspicion. It is the interpretation that is at fault. It is well known that where the vegetation is continuous, or nearly so, the formation of rings is so also; but we should decline to accept the author's unsupported statement, for unless we had evidence that he was enabled to determine under the microscope what was really a complete ring, and what was only a portion of one we should feel at liberty to doubt the correctness of his observations. It is a question for a microscopist and anatomist, and the writer's statement, as quoted, does not lead us to infer that he is a competent, though doubtless he is a conscientious observer. Ed.]

EARTH STAR:
GEASTER COLIFORMIS.

Few objects in the vegetable kingdom excite more wonder and admiration than the curious fungi known as Earth-stars, Starry Puffballs, or Geasters. In a former volume of the *Gardeners' Chronicle*, 1873, all the British Starry Puffballs were, with two exceptions, described and figured from Nature; one exception was Geaster coliformis, the grand species now illustrated in (fig. 155). The 1873 small illustration was copied from a copper-plate by Sowerby; the present illustration is from a living plant. In infancy Geaster coliformis, like all other Earth-stars, is a simple sphere, but as maturity is reached the outer coat or peridium splits from the upper pole downwards longitudinally into several segments, which segments curl back as illustrated, and support, from the lower pole, the mass of spores enclosed in a secondary and smaller sphere or peridium.

The species of Geaster have remarkable and diverse habits of growth; for instance, G. Michelianus throws its segments or rays back with such force at maturity, that the whole plant is torn from the ground and thrown several feet through the air; this act dashes out and disperses the spores through a single apical orifice belonging to the inner ball of spores. G. hygrometricus has a similar (but more feeble) habit in damp weather; whilst in dry seasons, the rays become forcibly incurved; by this act the rays are all pushed against the sides of the inner sphere, and so the spores are expelled much in the same manner as the spores of a common Puffball are dispersed by a lad's finger and thumb. In G. fornicatus the outer peridium separates into two coats, and the inner coat inverts itself with such nicety that it balances itself on the tips of its rays like an animal with four hands or legs. This latter is the "Man fungus" of the old herbalists; the inner sphere stands for the head, and the long reflexed rays stand for the shoulders and legs of the man. The first high wind of course lifts the fungus from the ground and carries it many feet or yards away, the spores meanwhile being expelled from the inner sphere or peridium.

Geaster coliformis differs from its allies in having the inner peridium pierced with many orifices for the escape of the spores, and with several little supports for the inner globe, instead of a peridium with one apical orifice and one peduncle or support. This fact, of course, has induced some one to give the fungus a "new name," viz., Myriostoma, in reference to the many orifices. The specific name, coliformis, refers to the same character, and means like a colander, seive, or strainer. The example illustrated is a medium-sized specimen, for the fungus is sometimes nearly half as large again as the drawing. It is one of the rarer Geasters, but has been found in different parts of England, including several localities near London.

The numerous orifices from which the spores escape are a very curious character in this species, and Mr. Berkeley thought there was possibly some connection between these and the slender peduncles below. This seems possible, although there are sometimes nearly half a hundred orifices, whilst the peduncles are often not many more than half-a-dozen. If the peduncles are really connected with the openings, we might imagine an Earth-star with numerous small inner free globes, each supported on a minute stem; we should then have a fungus somewhat in the style of Broomeia, as recently illustrated and described in the *Gardeners' Chronicle*. In Broomeia the outer peridium does not take the form of rays.

Apart from the purely botanical interest of Geaster coliformis, the plant immediately commends itself to every observer as not only beautiful, but highly curious. *Worthington G. Smith, Dunstable.*

Fig. 155.—Earth Star: Geaster coliformis.

HOME CORRESPONDENCE.

NEW ROSES.—We notice at p. 745 the remarks of your correspondent, "Tame Rose," Renfrew, regarding our new Rose, Earl of Dufferin, in which he questions the competency of the judges at the different shows where we exhibited and obtained certificates to confer such honours. Your correspondent says he does not know a single provincial society which has judges qualified to make such awards; we think this is a most unwarrantable statement, and it is quite in keeping with the remainder of the assertions contained in his article, which our subsequent remarks will prove most conclusively. The certificate awarded to us at Glasgow is signed by Mr. W. Parlane, The Gardens, Rosslea Row, who is the most successful rosarian amongst private growers in the West of Scotland, where he has been the leading prize winner for the past decade. Surely this man, whose collection embraces all the leading Roses, should have sufficient experience and knowledge to discern whether the Rose was distinct and an improvement on existing varieties; we are of opinion that he was quite competent, and so were his brother judges. According to "Tame Rose" one bloom only was shown at Glasgow, whereas there were thirteen flowers of Earl of Dufferin exhibited—twelve in one box—which were awarded the certificate, and one in our 1st prize stands, which secured the premier award for the best bloom in the show. At Helensburgh the week previous we were awarded similar honours for the same number of blooms of this variety by different judges. We have not the slightest hesitation in saying that this Rose is a perfectly distinct variety, and one of the best dark Roses sent out for many years. We would gladly avail ourselves of the suggestion made by "Tame Rose," to exhibit our new Roses at the National Society's show, but have hitherto found it impossible to do so. Living, as we do, in the North of Ireland, we are, as a rule, quite two to three weeks later than Southern growers, and these shows are past before our plants are in flower; besides, what colour would be in Roses cut twenty-four hours before exhibiting, and which had stood a sea and railway journey of several hundred miles? If the season permits we hope to exhibit some of our seedlings at Edinburgh, when those interested in Roses will have an opportunity of judging for themselves. *Alex. Dickson & Sons, The Nurseries, Newtownards.*

COVENT GARDEN PRICES.—Reading in your issue of the 11th a letter from "South-east"—who, I presume, is one of the so-called amateurs, of which now there is a numerous family, from noblemen to men occupying small villas—I only hope he will get

a less return for his produce than he has been obtaining. The man that purchases his Rose for less than a penny and sells it for sixpence is a wise man; and as long as the foolish men will choose to lose their money in labour, &c., and supply him, it is quite right to take advantage of it, though at the same time he would be quite as well pleased to pay more than have produce sent to glut the market. The sooner misfortune calls upon men of this class the better, who are men only playing with trade, to the injury and ruin of a large number of working growers.

A Working Grower. [We insert this letter as showing one view of the case, but we should be sorry to endorse the writer's propositions. Ed.]

MESSRS. J. CARTER & CO.'S MIMULUS.—At the late Crystal Palace flower show we exhibited a remarkable group of Carter's Jubilee Mimulus, a selection from Carter's well-known Queen's Prize strain; and although this novelty has received the highest honours at subsequent important exhibitions, it was to all appearances passed over by the judges at the show in question. We have now, however, received a communication from the authorities at the Palace, stating that we were awarded a First-class Certificate for this variety, but by some oversight on the part of the person making up the sheet the announcement of the award was omitted. *Jas. Carter & Co.*

PRIMULA IMPERIALIS.—This species, which has not flowered often in England, is now in flower in the garden at Great Gearies. There are four plants with flower-stems about 2 feet long, furnished with whorls of golden-yellow flowers: in fact, it may be described as a yellow P. japonica. The plants were raised from seeds sent over from India for the Primula Conference in 1886. The seeds were sent in a packet under the name of "P. elongata ?, yellow; near Choombie, about 11,000 feet, near streams in shade, wet banks." We have many whorls of eight flowers, but no larger number. P. imperialis is said to be a synonym of P. prolifera, and is described as such in the new *Dictionary of Gardening* (Nicholson), vol. iii., p. 221. P. reticulata we also received and raised plenty of plants, but they all turn out to be sikkimensis. Of course they vary in size of flower, and also in the different shades of yellow. Some are pin-eyed, as many more are thrum-eyed; but they are sikkimensis every one of them. Probably Mr. Brockbank has been more fortunate. I potted twenty-six plants, and may add that our packets were labelled "P. reticulata, Sikkim, 11,000 feet, between rocks in exposed wet places." The other packet was marked "Choombie." *J. Douglas.*

ORCHID COLLECTING.—Mr. Johnson, who appeals to me for information through your columns, ought to pay a heavy premium. The Queen of Saxony told me she should like to see Orchids growing in their native haunts, but that she was frightened because of the lions, tigers, and snakes; and I think Mr. Johnson ought to reflect upon the same possibilities. Travellers see but few Orchids in flower, and often travel for days in their very midst without seeing plants or flowers. In Columbia trees are felled, and when they are searched often not one crispum is found. The biggest haul one of our collectors had was a little over fifty plants from one tree, and many hundred trees fall before a consignment of Odontoglossum crispum is ready. Difficulties are great, and it is not so easy now as in olden times, when many Orchids growing near coasts were new. Steam communication and some other facilities are better, but our men have to go much farther into the interiors now. Seasons for collecting are short, and

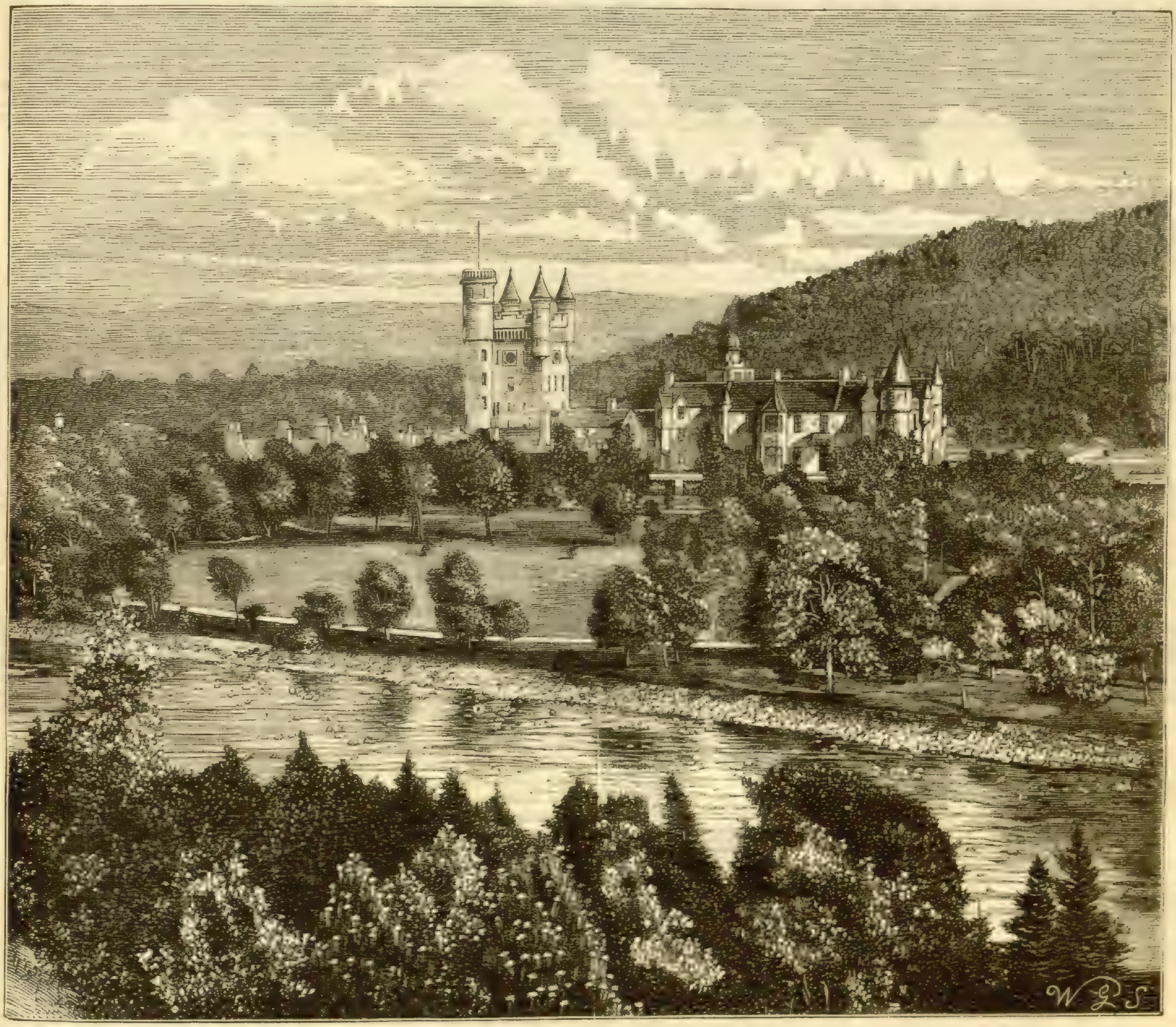

Fig. 156.—THE QUEEN'S HIGHLAND RESIDENCE, BALMORAL CASTLE.

fever and disease not long in catching hold of the poor travellers; they are always coming home ill and knocked up. Lately I have had one of my very best collectors—Arnold—die on the Orinoco, and a few days ago another—Peths—came home from Peru very ill. Of course, if a collector simply locates himself in a hotel—say in Bogota, Singapore, Rangoon, Calcutta, &c.—and sends natives out to collect O. crispum, Dendrobes, &c., he has an easy life of it, and very often may collect the very plants that make money and are wanted; but if he enters upon untrodden paths, deep in the interior, enters upon ground not having been covered by Roezl, Endres, Wallis, Bruchmüller, Schlimm, Zahn, Pearce, Lobb, Arnold, Frank Klaboch, Bowman, &c., his life is a very hard and precarious one, full of difficulties, and attended with danger; and the countries themselves are so very different. Mexico is an easy country to travel in, but the interior of South America, India, or Brazil is very difficult to reach. I had lately a man on the Congo—poor Schröder—he died out there. That is the hard and serious point for us who send the poor fellows out, and I often feel as if I had contributed to their death, and as if I would never again send a collector abroad. *F. Sander.*

A LATE TULIP SEASON.—How late in flowering the florists' Tulips are in some parts of the country is shown from the fact that the sixty-second annual Tulip show, held at the Orange Tree Inn, Butsey, near Macclesfield, is fixed this year for June 17, a later date than has previously appeared in the records of the show. Five years ago the season was a very late one, and the fixture was then June 13. In 1841 it was such an early season that the Tulip show took place as early as May 21. There are a few conditions attaching to this show worthy a record. Any person bringing any flowers to it must prove them, on oath, if required, to be his own property and blooming; and growers have to send a list of the flowers they intend to exhibit, three days before the show. From the commencement of the show and up to March, 1883, Mrs. Kitchen, the landlady of the Orange Tree Inn, acted as the treasurer; and on her death she was succeeded by her daughter, Miss Kitchen, who at present holds that office. The bill announcing the show further states that non-subscribers, wishing to see the flowers, will be admitted after 3 o'clock by paying silver at the door; but no set sum is indicated. *R. D.*

THE APPLE BLOOM.—Probably the exceeding persistency of the Apple bloom has this year been remarked by most gardeners. Not many years since, with even a fine bloom, it was observed that it totally disappeared within a week, and the result was a poor crop of fruit. Not only has the bloom been persistent, but it has been fine, and these two things combined naturally lead to the conclusion that the bloom is very healthy, and free from insects. No doubt the unusual washing just endured throughout all the northern districts, through the unusual visitation of more than twenty-four hours' persistent rainfall, will have cleansed flowers and trees effectually where needed. Still farther, such a soaking must have found the roots of the trees, a point which gives satisfaction, because it has been all the spring but too certain that, even with surface soils fairly moist subsoils and root depths were too dry to be pleasant. Thus, the grand bloom, the unusual and welcome rainfall, and the absence of frost combined, should give us this year the heaviest crop of Apples on record. But whilst the trees have been in bloom we have had dull, gloomy, cold weather generally, and insects, bees especially, have been prevented from performing that fertilisation of the blossoms which we have got to think absolutely essential to the due production of a crop. Perhaps that absence of insect activity has had something to do with the continuity of the Apple bloom, as it is well known in association with flowers generally that insect fertilisation tends to produce quick defloration. But then, again, we may be in doubt whether in the absence of the insects, the fine bloom we have been enjoying will prove fertile after all. Should it do so, then we shall, I fear, begin to regard the bees as, after all, only little humbugs. *A. D.*

FRUIT PROSPECTS IN SOUTH WILTS.—Notwithstanding the severe weather which we had during the winter and spring months, the fruit crops this year give every promise of comparing favourably with those of last season. Plums, it is true, are considerably fewer than they were last year, but then the Apple crop this year promises to be a long way in advance of last, the trees generally being studded with fruit. I never saw Peach and Nectarine trees so thickly set with fruit as they have been this season. Cherries, too, are an immense crop. As the result of the severe frosts which we had in spring after the sap had risen, several of our Apricot trees are crippled; yet the trees not so injured are carrying good crops. Pears, on the whole, are a fairly good crop, trees of Pitmaston Duchesse, Easter Beurré (espalier), Beurré Diel, Beurré de Capiaumont, Knight's Monarch, and Crassane, Callebasse, both standards, and heavily cropped; Marie Louise, Glou Morçeau, Chaumontel, Louise Bonne of Jersey, Jargonelle, Beurré d'Aremberg, and Van Mons' Leon le Clerc being fairly well cropped. Of Plums, the following are carrying average crops:—Reine Claude de Bavay, Orleans, Fonthill, Prince Engelbert, Royal Hâtive, Reine Claude Violet, Coe's Golden Drop, Jefferson's, Mitchelson's, Denniston's Superb, Denyer's Victoria, and Late Green Gage. Figs on open walls, which have not had any protection from frost during the last fifteen years, are a good crop, as also are Currants and Strawberries, but Gooseberry bushes and Raspberry Canes are not so heavily cropped as they were last year. The orchards in this district and in the neighbourhood of the New Forest were a sight well worth seeing the last week in May; the trees being literally covered with large healthy blossoms. *H. W. Ward, Longford Castle.*

POTATO CULTURE.—The writer of the "Potato Culture" articles now running through the *Gardeners' Chronicle*, seems to be more skilled in the art of putting interrogatories than in giving replies, but none the less his matter is not without interest, and well calculated to provoke discussion. He asks, for instance, "Is there any advantage in aiming at producing large tubers?" One would have thought the advantage was self-apparent, because bulk in Potatos means more profitable produce, and more food. But our querist means, Is it better to have a certain number of large tubers to the root, or double the number of smaller ones? However, here all depends upon what size is termed large. If, for instance, tubers weigh 16 oz., they are ungainly big; and if they weigh but 8 oz. each they are still large, although, as a rule, not too big for ordinary requirements; still, the best average size for cooking purposes is 6 oz., as such tubers, when properly peeled, need no cutting, and a Potato boiled or steamed whole is invariably better than one cut in halves. But the question seems to be, after all, Is there relatively more of starch or food found in tubers of moderate dimensions than in big ones? Here the reply must materially depend upon the sort and the cultivation received; but I hold that, as a rule, very large tubers are relatively less nutritious than the same weight of smaller ones, because moisture in the larger tuber is in the greater proportion. The same thing is found in cattle feeding roots, but those are very diverse in production. The writer in question assumes that whether the tuber produce be large or small, the foliage or leaf area can only form or secrete a certain amount of starch; but he should know that Potato plants which produce large tubers always have the largest leaf area, in fact, large tuber produce and ample leaf area are invariably coincident. The Ashleaf Kidney has leaf area proportioned to its tuber produce, which is comparatively small, and the White Elephant and Magnum Bonum are equally well balanced for their greater produce. We are asked what is "waxiness"?—an undoubtedly bad element in any Potato, condemning it absolutely. Well, in my opinion, waxiness is simply evidence of a tendency to reversion, on the part of the Potato, to its original or wild condition. But we have now comparatively few waxy Potatos, hence the matter gives little concern. What is much more to the point, perhaps, would be to enquire why it is that from two intercrossed kinds, both dry and starchy in texture, a waxy Potato would originate. We saw a few years since, International Kidney and Woodstock Kidney coming from the same excellent parents, yet the former was close and waxy, the latter dry, nutty, and mealy. I have frequently found similar strange results in Potato raising, and always reject the waxy sorts, and I still believe in the reversion theory. However, not one in twenty of the named Potatos of to-day deserves the appellation waxy—waxiness is chiefly contingent upon kind, and not upon size of tuber. With any ordinary dry or mealy kind the big tubers will boil mealy also as will the small ones, the only difference being, perhaps, that in the latter the starch is present in relatively greater rates. Then, as to the keeping properties of large *versus* small tubers—experience has shown there is little difference. All depends upon the method of storing and the temperature in which kept. Tubers lying thinly in a cool airy place waste little—probably nothing; but tubers placed in a heap or in bulk in any form heat somewhat, and thus induce the exhalation of moisture. Then if Potatos are kept in a dry atmosphere it is very probable that the dryer air would absorb some moisture from the tuber; but replaced in a moister atmosphere and it is probable that the moisture lost before would be reabsorbed. But to have a dryer air it is almost needful to have a warmer air than should be found in any ordinary Potato store, and warmth above what may be called the safe normal temperature of the Potato soon induces growth, and with growth comes waste. There is a theory, but whether well grounded I am not prepared to aver, that some kinds of Potatos, and notably late ones, improve in quality by keeping. I think it is a correct theory when applied to tubers up to the month of March or thereabouts, but all depends upon the kind of store and its temperature. Whether that improvement be produced by chemical change or by parting with water, I cannot say. *A. D.*

SOCIETIES.

ROYAL HORTICULTURAL.

June 14.—The conservatory at South Kensington was gay on this occasion with Pæonies, Irises, Pyrethrums and many another hardy flower from the nurseries of Messrs. Kelway & Son, Barr & Son, and T. S. Ware. Orchids put in a goodly appearance, the largest exhibitor being Mr. Tautz, Studley House, Shepherd's Bush; Baron Schroder, the Duke of Marlborough, Mr. Wigan, and others.

The meeting was very sparsely attended by the public, thus presenting a marked contrast to those of the years between 1883 and 1886.

Floral Committee.

Present: Shirley Hibberd, Esq., in the chair; and Messrs. W. Wilks, J. Fraser, G. Paul, H. Herbst, A. Bradshaw, W. H. Lowe, B. Wynne, R. Dean, C. Noble, C. Pilcher, J. Dominy, H. M. Pollett, J. O'Brien, A. F. Lendy, E. Hill, H. Turner, J. Hudson, H. Ballantine, and G. Duffield.

Taking Mr. Tautz's Orchids for their number and variety first, we observed Phalænopsis Sanderiana, Tautz's variety in good form, all the distinctive points of the variety standing out well. P. amabilis was shown as a cut spike of well developed bloom; Miltonia vexillaria in several pretty forms, and M. v. rubella were each shown in notable varieties. The group was likewise seen to be rich in Cattleyas of C. Mossiæ varieties, these being Aurora, splendida, and of Mendelii varieties, gloriosa, Garnetta, and elegans, all of them flowers of mark. In Cypripediums—the strong point in this collection—there were C. Lawrenceanum grandiflorum, a flower whose dorsal sepal has fine development, but seemingly at the expense of other parts; C. Laforcadeau, a small flower in which this appendage folds backwards when viewed in front, and is white margined; and C. caudatum giganteum, with petals 28 inches in length. The small flowered Aërides Houllettianum was shown in a good flowered state; and two examples of Masdevallia Harryana, viz., Thompson's variety, a large flower of vivid scarlet, and very velvety in appearance; and M. H. lutea oculata, a superbly coloured flower of deep crimson colour, and fairly large size; Dendrobium Veitchii, a green flower, with a three-lobed lip, marked with purple lines, is a rarely seen plant that was observed in Mr. Tautz's lot. (A Silver-gilt Banksian Medal for the group was awarded.) F. Wigan, Esq., Clare Lawn, East Sheen (gr., Mr. East), exhibited Cattleya gigas Sanderiana, a finely-proportioned flower, in which the rosy-purple lip was well seen; there were four blooms on the one spike. A pale form of the handsome C. Mendelii limbata was another noticeable plant, well bloomed, but deficient in bright colour; some cut blooms of Phalænopsis grandiflora comprised the group; Cypripedium Cheltoni was shown by Messrs. Heath & Sons, Cheltenham, it is a small blossomed variety with a greenish-brown lip and petals, the latter marked with round black dots, the dorsal sepal, white, with purplish-brown erect lines, wide apart. Two forms of Cattleyas were shown by E. R. Whitwell, Esq., Barton Hall, Darlington, a Mossiæ, and labiata Warneri, a plant with two flowers: both varieties were of good quality.

The plants from Baron Schroder's garden, Egham (gr., Mr. H. Ballantine), were Miltonia vexillaria radiata, having the starry patch of red at the base of the lip very conspicuous. It is a fine distinct flower. Cœlogyne Dayana, a large plant, with four long spikes several feet in length. The three colours, white, dark brown, and buff, render this Orchid a conspicuous one in any collection. A large white-flowered Miltonia vexillaria was observed in the Baron's group. J. Day, Esq., High Cross, Tottenham, showed Odontoglossum var. Wolstenholmiæ—a grand spike of bloom. Two fine Orchids came from the Blenheim collection (gr., Mr. G. A. Bethel). These were Cattleya Mendelii picturata, C. M. limbata, a highly coloured flower, in which the colour (pink) of the petals and sepals greatly exceeded in brightness that of the other plant previously mentioned. A plant of Cattleya Mendelii came from Mr. R. Spinks, Victoria Road, Horley. Messrs. Sander & Co., St. Albans, showed a small plant, bearing two blooms, of Odontoglossum crispum, Schroderi, and O. c. albanense, a flower with light brown spots densely placed on a white ground. It is not an unhandsome variety. Mr. Blair, gr. to the Duke of Sutherland, Trentham, showed a richly coloured Odontoglossum crispum, Blair's variety.

Miscellaneous.—Messrs. J. Veitch & Sons, Chelsea, showed a dwarf species of Anthurium named Bakeri; the spadix alone is of account, it being about 4 inches in length, four-angled, and covered with scarlet wart-like berries; the whole plant is of dwarf habit as seen, and hails from Costa Rica. A large basketful of Leschenaultia biloba grandiflora, finely flowered, came from the nurseries of Messrs. Balchin & Sons, Brighton. Dr. Wallace, of Colchester, showed flowers of Blandfordia flammea aurea; Messrs. J. Carter & Co., High Holborn, plants of Edelweiss, for which a Cultural Commendation was given; and a plant of Stenogaster concinna—a pretty rock plant with purple and white blooms. Messrs. Paul & Son, Old Nurseries, Cheshunt, had a new hardy Rhododendron Fortunei, variety Mrs. Charles Butler, a pale rose, full-headed, deliciously-scented flower. An Ampelopsis Veitchii was exhibited by Messrs. Collins, Tunbridge Wells, which had received the appellation purpurea on account of the purplish-brown hue of the young leaves and shoots. A number of semi-double varieties of mountain Pæonias, bright in colour, many of them, but thin in petal, came from Mr. Gordon, nurseryman, Twickenham. A showy bank of flowering hardy plants was made by Mr. T. S. Ware, and consisted of many varieties of Iris squalens, I. siberica, I. germanica, I. pallida, I. squalens, Madame Patti, purplish-rose and lemon-yellow; other fine plants were Hemerocallis Middendorfiana, a deep yellow flower, distinct, and rich looking; Pyrethrum, Margaret Moore, a single flower, pale flesh in colour, the disc yellow, a nice soft colour; Lathyrus Sibthorpi, bright purple flowers, of more slender habit than the old everlasting Pea; Max Leichtlin's variety of Papaver bracteatum præcox, an immense flower; Iceland Poppies; Ixiolirion tartaricum, a beautiful blue coloured flower with a whitish shade; Lilies, Calochortus pulchella, Thermopsis fabacea, Pæonies, many varieties of Pyrethrums, made up the bulk of the group. (Silver Banksian Medal.) Messrs. Barr & Son's collection was very similar, and was rich in Irises of the squalens and pallida sections; I. s. Warneriana, a bright blue and yellow; I. p. Mandraliscoe, a fine blue; I. p. Queen of May, purple; I. p. dalmatica, a pale blue, and very pleasing, were among the choicest; Pyrethrums, single and double-flowered; Lupines, Anthericum liliastrum, Hemerocallis, and varieties of Sempervivum made up a gay and interesting group. (Silver Banksian Medal.) The Pyrethrums, so liberally staged by Messrs. Kelway & Son, Langport, Somersetshire, furnished a bright feature of the show; the following were amongst the best varieties:—Magicien, cerise, tipped gold; Aphrodite, white, rather irregular, but useful for its colour, double; Figaro, a crimson, double flower, well formed; Melton, similar to the last named; Gustave Herz, double, pink; Florentine. The single-flowered were of great merit as regards their colours, which were mostly bright and well suited for border flowers. (A Bronze Banksian Medal.) Four new varieties of show Pelargoniums were shown by Mr. E. B. Foster, Clewer Manor, Windsor; Duke of Clarence, a smooth, regular flower, the lower petals scarlet, the same colour running round the two upper dark petals, and forming a handsome bordering, was considered to be the most distinct. Mr. R. Dean showed Chrysanthemum multicaule, C. coronarium × segetum, Phacelia campanularia, a dwarf hardy annual, with dark blue-coloured flower, and prominent white anthers, and crenate-palmate leaves. The Royal Gardens, Kew, contributed the following plants:—Oxalis braziliensis, a red-flowered species; Salvia scapiformis, from Hong Kong, having panicles, slender, with numerous small blue flowers, set in whorls, leaf blackish-green, long-stalked, and like those of a Violet; Streptocarpus Dunni, from the Transvaal, with corymbs of salmon-coloured flowers; it is remarkable for producing one gigantic leaf only: it is very free in flowering; Wahlenbergia, a dwarf plant, with campanulate flowers, blue; Onosma tauricum, from the open ground, was likewise shown.

First-class Certificates.

To Mr. T. S. Ware, for Pyrethrum, single, Margaret Moore.

To Mr. T. S. Ware, for Ixiolirion tartaricum.

To Mr. T. S. Ware, for Hemerocallis Middendorfiana.

To Messrs. Kelway & Son, for Pyrethrum, double, Florentine.

To Messrs. Kelway & Son, for Pyrethrum, double, Magicien.

To Messrs. Kelway & Son, for Pyrethrum, double, Aphrodite.

To Messrs. Kelway & Son, for Pyrethrum, double, Figaro.

To F. G. Tautz, Esq., for Masdevallia lutea-oculata.

To E. B. Foster, Esq., for Pelargonium (show), Duke of Clarence.

To E. G. Loder, Esq., for Eremurus robustus.

To Baron Schroder, for Cœlogyne Dayana.

To Baron Schroder, for Miltonia vexillaria radiata.

Fruit Committee.

Present: T. F. Rivers, Esq., in the chair; and Messrs. J. Lee, G. T. Miles, W. Warren, J. Fitt, G. Norman, F. Rutland, H. J. Veitch, G. Bunyard, and H. Weir.

Mr. G. Norman, gr. to the Marquis of Salisbury, Hatfield, brought a box of fruit of Sir C. Napier Strawberry of great size and the perfection of colour. We were informed that Clay's Fertiliser was the manurial agent used. Melon Dempsey's Favourite, a fruit of medium goodness but large in size, came from the same exhibitor. For Messrs. Sutton & Sons' prizes Mr. Lockie, gr., Oakley Court, took the 1st prize with Melons Hero of Lockinge and La Favorita. The latter is a small, netted, green-fleshed fruit, with good flavour. No 2nd prize was awarded—Mr. H. W. Ward, gr., Longford Castle, being awarded a 3rd prize for fruits of Hero of Lockinge.

ROYAL BOTANIC.

June 15.—The weather on this occasion was in marked contrast to that when the first great show was held in May. It was very hot and bright, and the company were able to avail themselves of the lawn promenade. The exhibition was a little thin as compared with the brilliant colouring seen at the May show. Foliage plants and Ferns were in larger abundance, but there were many pleasing patches of bright colour, and the Orchids were very fine. The bank of these was one of the best seen at the Park for a few years past; but the specimen plants of Roses were greatly missed.

Stove and Greenhouse Plants (open).—The best twelve came from Mr. J. Cypher, nurseryman, Cheltenham, who was also exhibiting at York. He had well grown and bloomed plants of Bougainvillea glabra, Stephanotis floribunda, Erica depressa, E. Cavendishiana, E. ventricosa hirsuta alba, Clerodendron Balfourianum, Ixora Pilgrimi, Anthurium Scherzerianum and its variety Cypheri, Franciscea confertiflora, &c. 2nd, Mr. D. Donald, gr. to J. G. Barclay, Esq., Knotts Green, Leyton, who had an excellent piece of Statice profusa, Erica Candolleana, E. Cavendishiana, E. tricolor Kingscotii, E. æmula, Darwinia tulipifera, D. fuschsioides, &c. 3rd, Mr. H. James, Castle Nursery, Lower Norwood. Mr. Donald had the best six specimens in the amateurs, having nice fresh examples of Aphelexis macrantha purpurea, Erica Paxtoni, Dracophyllum gracile, and Erica obbata. 2nd, Mr. A. Offer, gr. to J. Warren, Esq., Handcross Park, Crawley. Mr. H. James had the best six in the nurserymen's class, his leading plants being Erica Massoni major, E. Cavendishiana, Anthurium Wardianum, and Dracophyllum gracile. 2nd, Mr. J. Cypher, who had small but nicely finished examples of Erica ventricosa magnifica, E. tricolor Wilsoni, and Aphelexis macrantha purpurea, in his lot.

Orchids, as already stated, were shown in very fine condition. On this occasion Mr. J. Douglas, gr. to F. Whitbourne, Esq., Great Gearies, Ilford, regained the supremacy he lost at the last show, being placed 1st with twelve Orchids, having two superb specimens of Cattleya Mossiæ, Dendrobium nobile, Lælia purpurata, and its variety alba; Oncidium macranthum, Odontoglossum crispum, O. Roezlii album, Masdevallia Harryana, Cydripedium Lawrenceanum, Cymbidium Lowianum, Miltonia vexillaria. 2nd, Mr. J. J. Hill, gr. to Henry Little, Esq., The Barons, Twickenham, who had two varieties of Cattleya Mossiæ, C. labiata Warreni, C. Mendelii, very fine; Lælia purpurata, Miltonia vexillarium, Cypripedium barbatum grandiflorum, C. Lawrenceanum, and Vanda suavis Veitchii. 3rd, Mr. C. J. Salter, gr. to J. Southgate, Esq., Selborne, Streatham. Mr. J. Cypher had the best twelve in the nurserymen's class, having good specimens of Cattleya Mossiæ, C. Mendelii, Lælia purpurata, Dendrobium Dalhousieanum, Epidendrum vitellinum, Miltonia vexillarium, Dendrobium Bensonæ, and Masdevallia Harryana; 2nd, Mr. H. James. Mr. Douglas also had the best twelve Orchids, single plants, setting up a very good lot, comprising Cymbidium Lowianum, Odontoglossum citrosmum, Miltonia vexillaria, Cattleya Mossiæ, Lælia purpurata, Dendrobium thyrsiflorum, D. mesochlorum, and Masdevallia Harryana. 2nd, Mr. Hill, with Cattleya Mendelii, C. Mossiæ, C. labiata and its variety superba, Cypripedium barbatum superbum, and Odontoglossum hystrix. Mr. H. James was the only exhibitor of twelve in the nurserymen's class, one plant in a pot, having Cattleya in variety, Vanda suavis, V. tricolor, Odontoglossum Pescatorei, O. Alexandræ, &c. The class for twelve European Orchids brought no competition; but H.R.H. the Comte de Paris sent a collection from Sheen House, Surrey, to which a special award was made.

Nepenthes and Sarracenias.—Mr. H. James had the best twelve in rather small but well developed plants of Mastersiana, Rafflesiana, Hookeri, robusta, hybrida, &c. 2nd, Mr. A. Luff. Messrs. James and Luff were the only exhibitors of six Sarracenias, the awards being given in the order of their names.

Pelargoniums.—These, as is generally the case, made bold and striking masses of colour. Mr. C. Turner, Royal Nursery, Slough, had the best six in 8-inch pots, showing finely bloomed plants of Amethyst, Gold Mine, Comtesse de Choiseul, The Baron, Maid of Honour, and Sister of Mercy. 2nd, Mr. J. Cypher, with decorative varieties mainly, his best plants being Duchess of Bedford, Lady Isabel, Kingston Beauty, and Triomphe de St. Mande. In the amateurs' class Mr. Hill had the best six, but they bore traces of the heat. His best plants were Ruth Little, Formosa, Comtesse de Choiseul, Duc de Morny, and Blushing Bride. 2nd, Mr. D. Phillips, Langley Broom, Slough, with small but very neatly grown plants, particularly Prince Leopold, Triomphe de St. Mande, Mauve Queen, and Martial. Mr. C. Turner had the only six fancy Pelargoniums in the nurserymen's class, fresh and well bloomed with one exception—the varieties Ellen Beck, Princess Teck, Fanny Gair, East Lynne, The Shah, and Mrs. Langtry. Mr. D. Phillips had the best six fancies in the amateurs' class, staging Princess Teck, Roi des Fantaisies, Mrs. Porter, East Lynne, Delicata, and Pilgrimage. 2nd, Mr. H. Eason, gr. to B. Noakes, Esq., Highgate Hill, who had admirable plants of Atlas, Constance, Nelly Thomas, Kate Farren, Aglaia, and Lady Bailey. 3rd, Mr. Hill, with double and single varieties.

Ferns.—Mr. A. Offer had the best six, staging very fine specimens of Cyathea Smithii, C. dealbata, Dicksonia antarctica, Davallia Mooreana, and smaller ones of Adiantum Farleyense, and Thyrsopteris elegans. 2nd, Mr. H. Eason, with much smaller plants, his best being Gymnogramma Laucheana, Gleichenia dicarpa longipinnata, Davallia Mooreana, and Adiantum Williamsii.

Fine-foliaged Plants.—In the amateurs' class, Mr. D. Donald was 1st, with fine specimens of Areca lutescens, Chamærops humilis, Cycas revoluta, Croton undulatus, Anthurium crystallinum, and Dracæna Lindeni. 2nd, Mr. A. Offer, with Latania borbonica, Phœnix tenuis, Croton Warreni, C. Weismanni, Cycas revoluta, and Anthurium crystallinum. 3rd, Mr. R. Butler, gr. to H. H. Gibbs, Esq., St. Dunstan's, Regent's Park, N.W. Mr. Cypher had the best six in the nurserymen's class, staging very fine examples of Kentia Forsteriana, K. Canterburyana, Cycas revoluta, Dasylirion atrotrichum, Cocos Weddelliana, and Croton Queen Victoria. 2nd, Mr. H.

James, who had a fine Cycas revoluta, Croton Queen Victoria, and C. Andreanus. Mr. H. James had the best six Palms, having large specimens of Latania borbonica, Thrinax argentea, Areca lutescens, Cocos Weddelliana, Thapsis flabelliferum, and Kentia Lindeni. 2nd, Mr. A. Offer, with Chamærops humilis, Kentia Balmoreana, Thrinax elegans, Areca sapida, Corypha australis, and Phœnicophorium sechellarium; 3rd, Mr. R. Butler.

Variegated-leaved Plants.—These were somewhat poorly shown—Mr. H. James being 1st, with six, having Phormium tenax variegatum, Alocasia macrorhiza variegata, Phyllotænium Lindeni, Dieffenbachia Jenmanni, and a variegated Pine-apple. Mr. R. Butler was 2nd, his group including a nice piece of Aralia Sieboldi variegata.

Tuberous-rooted Begonias.—Here Messrs. J. Laing & Co., Stanstead Nursery, Forest Hill, was 1st, with a very fine lot of twelve, consisting of such fine varieties as Earl of Rosslyn, Lady Chelmsford, Ball of Fire, Marchioness of Bute, Bicolor. Queen Victoria, Primrose Queen, Lady Brooke, Marquis of Bute, &c. 2nd, Mr. W. Windsor, gr. to W. H. Williams, Esq., Enfield, who had seedlings.

Certificates.

Botanical Certificates were awarded to the following new plants:—To Messrs. James Veitch & Sons, Royal Exotic Nursery, Chelsea, for Rhododendron luteo-roseum, one of the javanicum type; Adiantum Capillus-veneris var. Mairiesii, Diplazium hians, Juniperus canadensis aurea, Abies canadensis argentea, A. excelsa mutabilis, Ilex aquifolium insigne, Viburnum ampliatum, Sequoia sempervirens alba spicata, and Odontoglossum crispum, Blair's variety. To R. B. White, Esq., Ardarroch, Gareloch Head, N.B., for a hybrid Dendrobium named phlebium. To Messrs. Sander & Co., nurserymen, St. Albans, for Masdevallia Harryana, Cattleya Mendelii limbata, and Odontoglossum crispum albanense. To Mr. G. Elliott, gr. to R. Durnell, Esq., Stamford Hill, for Cattleya Mossiæ, Durnell's variety.

Floricultural Certificates were awarded:—To Mr. W. Chitty, nurseryman, Stamford Hill, for Coleus Jubilee, a fine rich dark-leaved variety. To E. B. Foster, Esq., Clewer Manor, for show Pelargoniums Marion and Duke of Clarence. To Mr. C. Turner, Royal Nursery, Slough, for fancy Pelargoniums Iona and Ambassadress. To Messrs. J. Laing & Co., for Begonias Duke of Edinburgh, Duchess of Edinburgh, Princess Louise, Mrs. Apthorpe, Princess Royal, Scarlet Perfection, Terra Cotta, Marginata, and Alba magna. To Messrs. Kelway & Son, nurserymen, Langporie, for Pyrethrum Merry Hampton, Florentine, Magicien, Aphrodite, and Figaro.

Miscellaneous.—Under this head awards were made to Messrs. J. Laing & Co., for a fine group of Begonias, Orchids, and decorative plants; to Messrs. Hooper & Co., Covent Garden Market, for a charmingly arranged group of plants; to Mr. W. May, gr. to F. C. Jacomb, Esq., Stamford Hill, for a group of Orchids; to Mr. H. B. May, Dyson's Lane Nursery, Lower Edmonton, for a group of Palms, Ferns, and other decorative plants; to W. H. Darnell, Esq., for Orchids and Ferns; to Messrs. Barr & Son, King Street, Covent Garden, for a collection of cut flowers of hardy perennials; to Messrs. Hooper & Co., for the same; to Mr. A. Luff, Hatherset, Streatham, for a fine group of Gloxinias arranged with Ferns; to Mr. Thomas Ware, Hale Farm Nurseries, Tottenham, for hardy perennials and Pyrethrums; to Messrs. Kelway & Son, for Pyrethrums; to Messrs. Thomas Rivers & Son, Sawbridgeworth, for a collection of orchard-house trees in fruit, and also for a collection of gathered fruit; and to Mr. J. Forbes, nurseryman, Hawick, N.B., for a collection of very fine blooms of show and fancy Pansies.

Nineteenth Century Plants.—Certain classes were provided for nineteenth century plants, to include collections illustrating the addition of new plants to English gardens during the present century, introduced since 1800, and stove and greenhouse plants, Orchids, annuals, and hardy herbaceous and hardy shrubs were invited. Messrs. Paul & Son, Cheshunt, were the only exhibitors of annuals and hardy herbaceous, the latter predominating, and a 1st prize was awarded it. The group contained nothing calling for special mention.

Cut Flowers.—These consisted of Roses, and as they came between the forced and the outdoor produced flowers they were rather poorly shown. Mr. J. Hollingsworth, Maidstone, had the best twelve varieties, three trusses of each; and Mr. Robins, gr. to Colonel Lee, Hartwell House, Aylesbury, was 2nd. Mr. J. R. Tranter, Henley-on-Thames, had the best twenty-four varieties, three trusses of each. T. B. Atkins, Esq., Halstead Place, Sevenoaks, had the best twelve trusses of a yellow Rose, showing Maréchal Niel; Mr. J. Hollingsworth being 2nd, with Jean Pernet. Mr. Atkins had the best twelve trusses of any colour, one variety, staging Niphetos; Mr. Tranter being 2nd, with Maréchal Niel. Mr. J. Hollingsworth had the best six scented, three blooms of each; Mr. Tranter being 2nd. The class for sprays of climbing Roses to show habit did not fill. Messrs. Paul & Sons were 1st with a collection of hardy herbaceous flowers, having a very fine lot; Mr. T. S. Ware being 2nd. Lilies, Iris, Poppies, Pyrethrums, &c., were shown in fine form. Mr. A. Gibson had the best twenty-four bunches of stove and greenhouse flowers; Mr. Bates, gr. to Mrs. Meek, Poulett Lodge, Twickenham, being 2nd. Mr. J. Douglas was the only exhibitor of twelve trusses of Orchids, staging a very good lot indeed. Messrs. Collins Bros. & Gabriel, Waterloo Road, had the best collection of Iris—a very fine lot; Mr. T. S. Ware being a good 2nd. Show Pelargoniums were shown in excellent form, in twenty-four bunches, by Mr. C. Turner; Mr. D. Phillips being 2nd. The latter had the best lot of twenty-four bunches of zonal Pelargoniums, Mr. H. Eason being 2nd. Collections of British wild flowers were also shown.

Fruit.—This was a good feature, the season considered, The best collection came from Mr. R. Parker, gr. to J. Corbett, Esq., M.P., Impney Hall, Droitwich, who had a remarkably good lot, consisting of Black Hamburgh and Foster's Seedling Grapes, Queen Pine, Royal George and Noblesse Peaches, Elruge Nectarines, Strawberries, Figs, Cherries, and Melons; 2nd, Mr. T. Hare, Welling Grove Gardens, Grantham; 3rd, Mr. Robins, Hartwell House. Mr. H. W. Ward, the Gardens, Longford Castle Salisbury, had the best Queen Pine, Mr. W. T. Smith, Nevill Court, Tunbridge Wells, being 2nd. Mr. Parker had the best two Melons, staging Blenheim Orange and Best of All; Mr. Smith was 2nd, with Hero of Lockinge and Semper Fidelis. The best basket of black Grapes came from Mr. J. Hollingsworth, gr, to J. T. Campbell, Esq., Wood Seat, Uttoxeter, who had very fine Black Hamburghs; Mr. T. Osman, gr. to L. J. Baker, Esq., Ottershaw Park, Chertsey, was 2nd with the same in excellent form The best basket of 12 lb. of white came from Mr. R. Feist, gr. to R. J. Ashton, Esq., Staines, who had Muscat of Alexandria; Mr. J. Hollingsworth being 2nd. Mr. Hollingsworth was 1st with three bunches of very fine Black Hamburgh, Mr. Osman being 2nd. The best three bunches of black, any other kind, came from Mr. H. W. Ward. Mr. Feist had the best three bunches of Muscat of Alexandria; Mr. Ward being 2nd. The best three bunches of any other white were Buckland Sweetwater from Mr. Ward; Mr. Hollingsworth being 2nd with Foster's Seedling. Peaches and Nectarines, two dishes of each, were well shown; also Figs and Cherries.

YORK GALA.

June 15, 16, and 17.—The horticultural exhibition in connection with the annual gala at York, was specially remarkable for the magnificent Pelargoniums, of which there was a great number; specimen Fuchsias were also well shown, and Orchids in competition for the special Jubilee Prizes were very good, and the competition throughout the entire show was, on the whole, pretty keen. Roses and hardy Ferns were not up to the usual standard of the York Gala shows, but no doubt the unfavourable season through which we have passed must be held accountable for that fact.

For a group of ten stove and greenhouse plants, in bloom, and six ornamental plants, there was a keen competition between Mr. Letts, gr. to the Earl of Zetland, Richmond, Yorks, and Mr. W. Cypher, Exotic Nurseries, Cheltenham, resulting in the former exhibitor being placed 1st. Mr. Letts showed splendidly grown and flowered specimens of Azalea Duc de Nassau, good in form; Pimelea decussata Erica Masoni major, Anthurium Scherzerianum, Shuttleworth's variety; Erica coccinea minor, very fine; Clerodendron Balfouri, Phœnocoma prolifera, and among the foliage plants there were Cordyline indivisa, Croton Johannis, C. Queen Victoria, and Kentia Forsteriana. Mr. Cypher's group comprised among others good plants of Erica tricolor Wilsoni, Dracophyllum gracile, Aphelexis macrantha purpurea, Dasylirion acrotrichum, Erica ventricosa hirsuta alba, Cycas Normanbyana, and Latania borbonica. The 3rd prize in this class was awarded to E. Adams, Esq., Swalwell, Yorks, who had a creditable collection containing a good variety, much resembling the former group; he had a nice plant of Phœnocoma prolifera Barnesii.

There were two classes for groups arranged for effect, and the exhibits, which occupied an entire tent, were very pleasing. The shape of the groups was a square or almost so. Among the groups occupying a space not exceeding 250 square feet, Mr. J. McIntyre, gr. to Mrs. Gurney Pease, Darlington, was placed equal 1st with Mr. A. Webb, gr. to J. H. M. Sutton, Esq., Newark, both exhibits displaying great taste and care in their arrangement: Adiantum (forming a base), and Palms, Crotons with Hydrangeas and Ericas, were the chief plants employed. Mr. Lyon, gr. to Viscountess Ossington, was 3rd, with a group into which few flowering plants were introduced, and of these Carnations were the chief. 4th, Messrs. Simpson & Sons, York—Pelargoniums being very freely employed here. Asparagus plumosus, Caladiums, Palms, &c., were used. This group was too flat.

Mr. McIntyre was again to the front for a group occupying 150 square feet, showing plants similar to those in his larger group; Mr. G. Lister, gr. to T. S. Brogden, Esq., York, was 2nd in merit here; while Mr. Lyon was again 3rd, this exhibitor taking 1st for three stove and greenhouse plants, showing fine specimens of Stephanotis floribunda, Clerodendron Balfouri, and Ixora coccinea superba; Mr. A. Webb was a close 2nd, showing well grown plants, but not trained to exhibition point, and therefore more natural, and prettier; Clerodendron Balfourianum and Trachelospermum jasminoides were his best. Mr. M. Stevenson, gr. to Mr. Councillor Makins, York, was placed 3rd. The foregoing class was for amateurs only.

In the open division for six stove and greenhouse plants Mr. Letts secured the leading position, with capital plants of Erica Cavendishii, Azalea Chelsoni, Darwinia tulipifera, Pimelea decussata, &c.; and Mr. H. Johnston, gr. to J. B. Hodgkin, Darlington, was a close 2nd, with Ixora Williamsii, Aphelexis macrantha purpurea, and Erica ampullacea obbata; 3rd, E. Adams, Esq., also running closely, and showing well Statice floribunda and Phœnocoma prolifera Barnesii. Mr. Johnston had also the best four Dracænas, clean plants of fair size—Gladstonei and Regina were the two best shown. For six fine-foliage plants Mr. Letts took the highest award, showing here, as in all other corresponding classes, finely grown plants of very neat appearance. Stevensonia grandiflora as shown was very fine, and others were Cycas circinalis, C. revoluta, Dasylirion acrotrichum, and Croton angustifolius (good). Mr. McIntyre showed capital plants too, and was a close 2nd. Cycas circinalis and C. revoluta were well represented, and there was also a good specimen of Cordyline indivisa. Messrs. Simpson & Son, York, were 3rd, showing Palms chiefly. In the amateurs' class for three Mr. C. Rollison scored highest honours, and was followed by Mr. Lyon, both of whom showed creditably.

The prizes offered for four Crotons brought forth a first-class show as far as regards the 1st and 2nd prize lots, Mr. McIntyre coming to the front and showing specimens of Warreni, Hammondi, Andreanus, and Chelsoni. Mr. A. Webb was 2nd, with equally well grown but smaller plants. Mortii and Disraeli were the best. E. Adams, Esq., Swalwell, 3rd. This last exhibitor showed the best single specimen fine-foliaged plant, having Dasylirion acrotrichum, a fine example. The finest single Azalea (indica) came from Mr. C. Rollison. Coleuses were shown in excellent condition by Mr. J. Young, gr. to T. F. Wood, Esq., York. The plants were very rich in colour and of vigorous growth, Mrs. Stedstall and Conqueror being the most striking. Mr. R. Mackintosh, gr. to J. T. Hingston, Esq., York, was a close 2nd; and Mr. W. Lazenby, gr. to Mrs. Newton, was 3rd, all having creditable specimens. Mr. Young was 2nd with Selaginellas, showing good pans. Mr. McIntyre was 1st. Mr. Cypher had Erica Cavendishii, E. ventricosa hirsuta alba, and E. tricolor Wilsoni, all good, and the first-named especially so in competition for the prizes offered for Cape Heaths, and he secured an easy 1st over Mr. Letts, whose plants were also of good appearance only rather smaller than Mr. Cypher's; his E. tricolor superba was his finest example. Mr. H. Johnston, 3d, also good. Mr. Letts had a good Ixora Williamsi, with which he took 1st for greenhouse plants (single); the 2nd being E. Adams, Esq., with a pretty Erica.

Bedding plants, excluding Pelargoniums, were best shown by W. R. Simpson, Esq., Selby. This collection was a fairly comprehensive one, and justly received the 1st prize. Hydrangea Dr. Hogg, La-

tania rosea, Calceolarias, Verbenas, &c., were included. Messrs. Simpson & Son, York, were placed 2nd; and Mr. J. Cottam, Jr., Cottingham, 3d.

With Ferns, a large display was not made, at the same time noteworthy exhibits were staged. Captain Starkey, York, showed the best Tree Fern (viz., Dicksonia antarctica), with a very full head of large fronds, the stem being rather small; with the same species W. R. Simpson, Esq., Selby, was placed 2nd, his specimen being considerably smaller than Captain Starkey's.

The three best exotics (amateurs) came from Mr. C. Rollison, gr. to W. Bateman, Esq., Harrogate, whose best plants were Gleichenias; Mr. J. Lyon was a good 2nd. The open class was for six, and here Mr. H. Johnston was a good 1st, having capital specimens of Davallia Mooreana, D. fijiensis, Adiantum Farleyense, and Gleichenia Mendelii; this was a very good lot of plants, large and healthy. 2nd, Mr. J. McIntyre, with Alsophila excelsa, Davallia Mooreana, and Adiantum gracillimum, running very closely on the first lot. Mr. J. Rodwell, York, exhibited a large piece of the Killarney Fern (Trichomanes radicans), securing with it the 1st prize for a single hardy Fern; he also led in the class for ten.

Tuberous Begonias, six varieties, distinct, were best represented by Mr. McIntyre, having great variety of well-flowered and strongly grown plants. 2nd, Miss Wharton; and 3rd, Mr. R. Simpson, Selby, all running very close on each other.

Pelargoniums.—At the York Gala specimen Pelargoniums have always formed a great feature, and this year's show was no exception to the rule; indeed, the plants shown were perhaps of larger size and better quality than before. Those exhibited by Mr. Mackintosh in the class for twelve show varieties (open) were grand spectacles, and measured some 4 feet in diameter. He far out-distanced his competitors, taking 1st. He had in his collection Kingston Beauty, Lady Isabella, Salmonida, Prince of Pelargoniums, and Triomphe de St. Mande. Mr. I. Eastwood, gr. to Mrs. Tetley, Leeds, was 2nd, also showing splendid plants; these were—Mary Hoyle, Beauty of Kingston, Triomphe de St. Mande, Pericles, Desdemona, Queen Bess, &c. Mr. J. Vear, gr. to Miss Steward, York, was 3rd, with plants considerably smaller. In the remaining two classes these exhibitors also took the prizes, Mr. Eastwood and Mr. Mackintosh changing their position. Mr. Eastwood was also 1st in the classes for six and twelve zonals (open), having good plants of Shah, W. Groom, Renown, Princess of Wales, Santley, J. Waterer, &c. For the twelve, Messrs. Pybus & Son, nurserymen, Ripon, were 2nd with Mrs. Kelly, Mulberry, G. Peabody, and Mrs. Turner; Mr. Vear 3rd, and Mr. Mackintosh 4th, who came right to the front with six, when Mr. Vear was 2nd, the 3rd place being taken by Mr. R. Gouthorpe, Bishopsthorpe. Mr. Eastwood had the best double-flowered varieties in both the open and amateurs' classes; these did not make nearly such a fine show as the singles. Mr. Vear was 2nd. For Ivy-leaved varieties Mr. Cottam, jun., took the 1st prize, and Mr. Eastwood 2nd, the exhibits here not being up to the usual standard; but when Ivy-leaved Pelargoniums are trained out in the approved exhibition way, their beauties must be partially lost, as they are essentially basket plants. Fancy varieties were also best from Mr. Eastwood—Roi des Fantaisies, Lucy, Evening Star, and The Shah being the best in this division. Mr. G. Clarke, gr. to Miss Wharton, York, justly received 1st for nine variegated, tricolor, and bronze Pelargoniums without bloom, showing clean and neat plants; Mrs. Boston, Happy Thought, and Princess Royal were the best. Mr. G. Cottam, jun., was 2nd.

Mr. Vear had the best twelve Gloxinias, good plants; and the best six came from Mrs. Newton. For twelve, Mr. J. Young, gr. to Rev. G. M. Argyles, York, was 2nd, all the exhibits being well flowered. Calceolarias were best represented by Mr. J. Young; and 2nd, Mr. Everard, gr. to Mrs. Gatch, York, who also had the best three.

Orchids in competition for the special Jubilee prizes were of great merit, Mr. Cypher taking 1st (£21) with very finely-flowered plants of Miltonia vexillaria, Cypripedium Lawrenceanum, Cattleya Mossiæ grandiflora, Saccolabium guttatum, Lælia

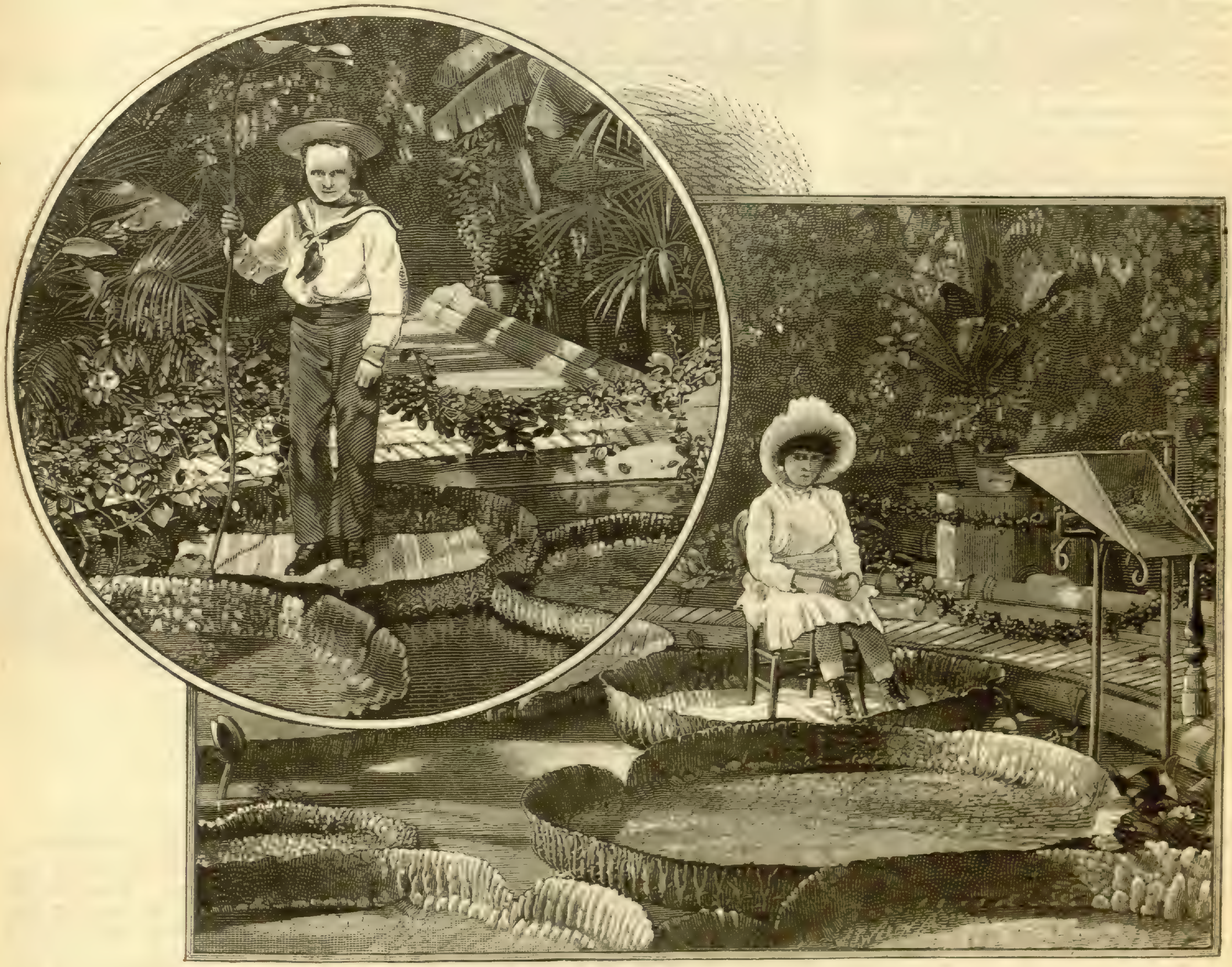

Fig. 157.—THE VICTORIA REGIA AT CHERKLEY COURT.

purpurea alba, Dendrobium thyrsiflorum, Cattleya lobata, &c.; and in the other classes, viz., those for eight and four each, Mr. Cypher carried off the 1st prizes. In addition to the named varieties may be named Cypripedium Stonei, Aërides Mendelii, and A. Fieldingii. Mr. Atkinson, gr. to C. Broadwood, Esq., was 2nd for the Jubilee prizes, and had good plants of Dendrobium Bensoniæ, Cattleya Mossiæ, Thunia Marshalli, and C. crispa, &c. Mr. C. Rollison and Mr. Weddell also took prizes for Orchids; and in the class for Messrs. Backhouse & Son's special prize took them in the order named.

Fuchsias.—The specimens exhibited in the class for six were very fine, and fully justified the award of 1st to Mr. Macintosh, the plant was 5 to 6 feet in height, well trained, and evenly flowered; Rose of Castille, Charming, Miss Marshall, and Letty Lye, were the most noticeable of them. 2nd, Mr. Clarke, having almost the same varieties, and running very close to Mr. Mackintosh; 3rd, Mr. Baker.

Roses, although extensively exhibited, were not of first-class quality. Messrs. Jackson & Co., Bedale, Yorks, took 1st in nearly all the open classes, when the 2nd places were taken by Messrs. Pybus & Son, Ripon. Messrs. Jackson's plants in pots were rather small, but evenly flowered, as against Messrs. Pybus' larger ones, many of which were not half-flowered, being still in bud. Messrs. Jackson were 1st with best six and also nine, as well as as for the fifteen, exhibiting E. Morren, Duchess of Edinbugh, Madame Levet, Abel Grand, Comtesse de Paris, Madame Lacharme, Countess of Rosebery, Peach Blossom, Socrates, Miss Hassard, and Madame Verdier Messrs. Pybus' best being L'Esperance, E. Laxton, C. Lawson, Lyonnais, C. Lefebvre. Among the amateurs, Mr. C. Rollison secured the premier award in the class for six plants, showing fairly good specimens which bore some good flowers. In another class for six Mr. J. M. Fieldhouse, gr. to Miss Moore, York, was the most successful exhibitor, having Baroness Rothschild (large), Madame Lacharme; a close 2nd, Mr. W. Gowthorpe, with smaller plants—well flowered. For six distinct Teas or hybrid Teas Messrs. Pybus & Son were adjudged 1st place, they showing Souvenir d'un Ami, Jean Ducher, Comtesse de Nadaillac, Lady Mary Fitzwilliam, all clean, and bearing good flowers. Messrs. Jackson & Co. came 2nd here with rather poor plants. The best three distinct from amateurs came from Mr. J. M. Fieldhouse, the best varieties being Centifolia rosea and Madame Lacharme. 2nd, Mr. Eastwood, who included a good specimen of Violette Bouyer.

Cut Flowers.—In the class for seventy-two and for forty-eight cut Roses, Mr. H. May, Bedale, Yorkshire, came out with the highest honours, and also in the several other classes for cut Roses. There were in his stands several good blooms, such as of Comtesse Riza du Parc, Niphetos, Maréchal Niel, Souvenir d'un Ami, Gloire de Dijon, Anna Ollivier, Madame Margottin, and Dupuy Jamain. Mr. M. A. Whitton, Bedale, had the best stand of any one variety of Tea Rose, using Maréchal Niel, as did Mr. J. D. Hutchinson, Kirby Moorside, who was placed 2nd. Mr. Eastwood was 3rd, showing very well in the forty-eight class. In the classes for thirty-six and twenty-four blooms, Mr. May was again in the lead, with Messrs. Jackson & Co. 2nd; and in these two classes the display was of fair quality. In smaller classes the prizetakers for Roses were Messrs. Milner, Hutchinson, May, and Fieldhouse.

Of bouquets and epergnes, &c., there were several, some being tastefully set up. Mr. H. May took a prize for a basket of Roses. Among bouquets, Mr. J. Cragg, gr. to A. Heine, Esq., Manchester; Messrs. Perkins & Sons, Coventry; and Mr. McIntyre took the chief prizes; those for epergnes going to Messrs. J. Cottam, jun., E. Adams, and H. Stoughton.

Messrs. W. Wood & Son, London, offered prizes for Roses fed by their manure powder; and Messrs. Harkness were 1st (Silver Medal), with very fine blooms of Maréchal Niel—the best blooms in the show.

The best twelve spikes or bunches of cut flowers were from Mr. G. Williams, gr. to S. Barlein, Esq., Didsbury, who had Primula densiflorum, Statice floribunda, Cattleya Mendelii, and Odontoglossum crispum; he also showed the best six, all of which were Orchids.

Fruits and Vegetables.

When the unpropitious season is called to mind the collections and single dishes of fruit shown were of great merit. Grapes, Peaches, and Nectarines were specially good. In the class for a collection of six fruits (the 1st prize being offered by the Veitch Memorial Trustees), Mr. J. Edwards, gr. to the Duke of St. Albans, Notts, was 1st, with a very good lot; Grapes Black Hamburgh and Foster's Seedling were very clean; and others were Peach Hale's Early and Melon Eastnor Castle; 2nd, Mr. McIndoe, gr. to Sir J. W. Pease, Bart., M.P., Gisborough, also a fine lot, and coming very close, he had Fig Brown Turkey, Melon Scarlet Premier, and Grapes Black Hamburgh and Muscat of Alexandria. 3rd, Mr. Dawes, gr. to Hon. Mrs. Meynall-Ingram, having Fig Brown Turkey, Peach Belle Bauce, and Pine The Queen. Mr. McIndoe was 1st, for a collection of eight fruits, showing well Black Hamburgh, Muscat of Alexandria, Fig Brown Turkey, Melon Scarlet Premier, Nectarine Pitmaston Orange—all very clean and fine. Mr. Dawes was 2nd, showing as before. 3rd, Mr. A. Webb. For four varieties Mr. Clayton, gr. to M. J. Fiddler, Esq., Tadcaster, was 1st, having as his best Grapes Black Haumburgh and Madresfield Court. Among single dishes the best Queen Pine was from Mr. Edwards The two best Black Hamburgh Grapes were from Mr. J. Allsop, gr. to Lord Hotham, Hull, in a very large and close competition, showing well done bunches. 2d, Mr. Wallis, gr. to Sir H. M. Thompson, Bart., also good; the best Strawberries coming from him too. The prize for the best white Grape went to Mr. Allsop, for Muscat of Alexandria.

For a collection of vegetables, Messrs. Webb offered special prizes, the chief of which was taken by Mr. McIndoe, who had a wonderfully clean lot of great worth, fully deserving the award made; 2nd, Mr. Crawford, gr. to Colonel Thorpe, Newark-on-Trent. Mr. McIndoe also had the best Tomatos, and from Mr. J. Brown, Milford Junction, came the prize lot of Cucumbers, leading among several close competitors.

Miscellaneous.

A very interesting and beautiful exhibit was Messrs. R. Smith & Son's, Worcester, Clematises. The plants being uniformly well flowered and of great vigour. Messrs. W. and J. Birkenhead, Fern Nursery, Sale, Manchester, contributed a varied and extensive lot of well grown Ferns, embracing most of the well known sorts. Violas and Pansies were a strong feature in this division, very fine specimen flowers coming from Messrs. Kent & Brydon, who also showed Aquilegias and Pyrethrums. Messrs. Harkness, Bedale, and Messrs. Dobbie & Co., Rothsay, N.B., this last firm having an excellent lot. Messrs. Kelway & Son, Langport, showed in their usual good style single and double Pyrethrums, among which was a new white double, which would be an acquisition if the yellow centre were not so conspicuous. A pretty display of cut Rhododendrons, Pæonies, Irises, and other hardy flowers was made by Messrs. Backhouse & Son, York. A collection of some hundred Orchids in pots, mostly forms of Odontoglossum crispum, tastefully arranged with Maidenhair Ferns, came from Mr. J. Charlesworth Heaton, Bradford. A plant of Cypripedium Veitchii was also noticeable. Mr. Harrison, Leeds, also showed a few Orchids.

The Hardy Fruit Garden.

Dessert Cherries.—As soon as these Cherries show slight signs of colouring they are generally attacked by the birds; it would be well, therefore, to place the nets over the trees, taking care before so doing to examine carefully the shoots for blackfly, and if they are present use the garden engine to dislodge them; and should the aphis increase after the trees are netted, the nets must be occasionally removed, and the same remedy applied up to the time of the fruit being nearly ripe, when it must be discontinued till after the fruit is all gathered. Afterwards the trees may receive a thorough cleansing.

Figs.—Trees, unprotected, that were pruned and nailed-in early in the season, are now swelling their fruits; and as soon as the fruit-bearing shoots are of sufficient length, they must be stopped at the fifth or sixth joint, removing any weakly shoots, so as to leave space for laying in the bearing shoots for another year.

Strawberries.—Early varieties, before they show signs of colouring, should have the nets placed over them to protect the fruit from birds; those beds from which the fruit is required for dessert purposes, should have a few stakes driven in along the sides of the beds to which to fasten some cross-pieces and place some light rods along the sides of the beds resting on the cross-pieces, altogether raising the whole about 2 feet above the plants, over which place the nets; the gathering of the fruit can be much facilitated by this means, especially where several gatherings of the fruit have to be made each day. *E. Ward, Hewell, Bromsgrove.*

The Weather.

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING JUNE 25. (AVERAGE OF THIRTY-THREE YEARS.)

June 19	61°.4	June 23	61°.8
,, 20	61°.5	,, 24	62°.
,, 21	61°.6	,, 25	62°.1
,, 22	61°.7	Mean for the week ...	61°.7

THE PAST WEEK.

The following summary record of the weather for the week ending June 13, is furnished from the Meteorological Office:—

"The *weather* has been dull, unsettled, and rainy in the extreme north and north-west of Scotland, but over England and Ireland the conditions have been generally fine and bright. At several of our southern and south-western stations, however, thick fogs have prevailed at times.

"The *temperature* has been about equal to the mean in 'Scotland, N.,' but above it in all other districts, the excess ranging from 1° over the south and west of Great Britain to 3° in 'Scotland, E.,' and 4° in 'England, N.E.' The highest of the maxima, which were recorded on the 13th over the greater part of England, and on irregular dates in Ireland and Scotland, varied from 81° in 'England, S.,' and 80° in 'England, E.,' and the 'Midland Counties,' to between 73° and 74° in Ireland, and 69° and 74° in Scotland. The lowest of the minima, which were registered either on the 10th or 11th, ranged from 38° in 'England, S.W.,' and 39° in 'Scotland, N.,' to 45° in 'England, N.E.,' and 47° in the "Channel Islands.'

"The *rainfall* has been considerably more than the mean in 'Scotland, N.,' but less in other districts. Over England and Ireland scarcely any rain has fallen.

"*Bright sunshine* has been very deficient in the north and east of Scotland, but in all other parts of the kingdom a decided increase is shown. The percentage of the possible amount of duration ranged from 63 in 'England, E.,' and 'England, S.W..' and 62 in 'England, S.,' and the 'Channel Islands,' to 35 in 'Scotland, W.,' 25 in 'Scotland, E.,' and to only 6 in 'Scotland, N.'"

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 32° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

[Districts.	Temperature. Above or below the Mean for the week ending June 13.	Accumulated. Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 4, 1887.	Below 42° difference from Mean since Jan. 4, 1887.
Principal Wheat-producing Districts.		Day-deg.	Day-deg.	Day-deg.	Day-deg.
0. Scotland, N. ...	0 (aver.)	70	0	+ 86	+ 37
1. Scotland, E. ...	3 above	101	0	+ 97	+ 41
2. England, N.E. ...	4 above	116	0	− 17	+ 82
3. England, E. ...	2 above	123	0	− 108	+ 168
4. Midland Cos. ...	2 above	121	0	− 101	+ 166
5. England, S. ...	1 above	111	0	− 121	+ 151
Principal Grazing, &c., Districts.					
6. Scotland, W. ...	1 above	90	0	+ 17	+ 47
7. England, N.W. ...	1 above	99	0	− 77	+ 118
8. England, S.W. ...	1 above	107	0	− 86	+ 172
9. Ireland, N. ...	2 above	108	0	+ 63	+ 23
10. Ireland, S. ...	2 above	113	0	+ 21	+ 97
— Channel Islands	1 above	113	0	− 151	+ 77

Districts.	Rainfall. More or less than the Mean for the Week.	Rainfall. No. of Rainy Days since Jan. 4, 1887.	Rainfall. Total Fall since Jan. 4, 1887.	Bright Sunshine. Percentage of possible duration for the Week.	Bright Sunshine. Percentage of possible Duration since Jan. 4, 1887.
Principal Wheat-producing Districts.	Tenths of Inch.		Ins.		
0. Scotland, N. ...	11 more	98	17.9	6	21
1. Scotland, E. ...	3 less	74	8.9	25	32
2. England, N.E. ...	4 less	70	6.5	42	30
3. England, E. ...	5 less	67	7.3	63	36
4. Midland Cos. ...	5 less	65	8.0	54	31
5. England, S. ...	4 less	64	8.1	62	34
Principal Grazing, &c., Districts.					
6. Scotland, W. ...	3 less	78	15.6	35	33
7. England, N.W. ...	5 less	64	9.9	46	34
8. England, S.W. ...	6 less	67	9.0	63	41
9. Ireland, N. ...	4 less	74	11.4	39	33
10. Ireland, S. ...	5 less	65	10.9	49	40
— Channel Islands	4 less	76	8.3	62	47

Obituary.

The death, at the age of 75, of Mr. F. R. Kinghorn, of the Sheen Nurseries, Richmond, is announced, Mr. Kinghorn had been ailing for some time past, and died on Saturday last.

Francis Rodney Kinghorn, so well known and so much esteemed about London in later years, was born at Lennoxlove, Haddington, N.B., one of the seats of the Lords of Blantyre, on February 13, 1813. At an early age he entered the nursery of the Messrs. Ballantyne, of Dalkeith, from whence he went to Oxenford Castle Gardens, near Edinburgh, to serve under his elder brother Alexander, who was head gardener there. Subsequently he was employed in the gardens of Craigie Hall, near Edinburgh, and also at Cally, near Gatehouse, Kirkcudbrightshire. Leaving the latter place at the age of 24, he came to Orleans House, Twickenham, as head gardener to Alexander Murray, Esq., who sold the property to the late Earl of Kilmorey; but Mr. Kinghorn still retained his post, and it was while here that he devoted a great deal of his time to the fertilisation and hybridisation of flowers, and especially to the class of zonal Pelargoniums. Countess of Warwick, one of the earliest, if not the first, raised by him; the silver-edged Flower of the Day, several tricolors, and that old pink-flowered bedding variety, Christine, were among the results of his efforts. The Indian Azaleas were always great favourites of his, and Murrayana, Symmetry, Mars, President, Sir Charles Napier, and Kinghorni, were all raised by him, and in their day were unsurpassed for quality and usefulness. Epacrises, Kinghorni, and miniata splendens, also owe their origin to him.

Mr. Kinghorn distributed but few of his seedlings himself, and they were sent out mainly by Messrs. E. G. Henderson & Son, of St. John's Wood; and Messrs. J. & C. Lee, of Hammersmith. Flower of the Day proved a great commercial success in the hands of the latter. Some very fine varieties of herbaceous Lobelias also attested to Mr. Kinghorn's activity as a raiser.

The herbaceous Calceolaria was greatly improved by Mr. Kinghorn also; and he made a great reputation as a successful cultivator of that plant.

In 1855 Mr. Kinghorn started in business on his own account at the Sheen Nurseries, Richmond, devoting himself with unceasing attention to its development, and continued an active oversight until failing health compelled some relaxation of energies about four years ago.

Mr. Kinghorn was an active supporter of the old National Floricultural Society, and his services were much in request as a censor. He was for a long time a member of the Floral Committee of the Royal Horticultural Society, and was a frequent judge at horticultural shows. As the chairman of the committee of the Richmond Horticultural Society he greatly helped the development of the fine exhibitions held by it.

The business at the Sheen Nurseries will be carried on by Mr. John Kinghorn, the only son of our deceased friend, under the old title.

Notices to Correspondents.

Addenda. In our report of the recent Horticultural Exhibition held at Manchester, we omitted to state that a First-class Certificate was awarded to Pelargonium Duchess of Teck, exhibited by Messrs. Fisher, Son & Sibray, of the Handsworth Nurseries, Sheffield; and a Medal was awarded to the magnificent collection of Masdevallias, exhibited by Mr. Blair. of Trentham.

Cuts, Photographs: *T. Banks.* Look up the Mexican Floras in public libraries, and Hemsley's *Central America.*

Foster's Seedling Grape: *C. P.* Because your Grapes are getting ripe, it is no reason that you should stint the Vine of water at the root. If the border be of retentive loam, or ineffectively drained, do not deluge it. Examine it with a notched probe-stick, and give water if the stick indicate dryness of the soil. Grapes liable to crack—and Foster's is not one—need care in watering at the ripening period.

Fungus: *W. G. Carson.* Æthalium vaporarium ("Flowers of tan"), a most destructive fungus. Salt or sulphur will check it, but it is better to turn out the soil and burn everything that can be burnt.

Grapes: *W. K.* The results seen are brought about by insufficient ventilation, and are actually due to a kind of scalding.

Laburnum: *F. A.* What you send is the curious Cytisus Adami, about which volumes have been written. It is supposed to have originated from a bud of Cytisus purpureus inserted upon C. Laburnum. Others say it is a hybrid seedling between the two species. It is a reproach to our experimentalists that they have not settled the point long ago.

Mushroom Bed: *Cambrian.* If the bed has got cold a week after spawning, it may still produce Mushrooms—these may come some months hence.

Names of Plants: *E. C.* 1, Saxifraga rotundifolia; 2, S. cuneifolia.—*W. Withers.* Pholidota imbricata and Coronilla Emerus.—*G. W. A.* Tradescantia virginica.—*T. S. Biggs.* The flower is that of Paulownia imperialis, nat. order Scrophulariaceæ, a native of Chili. In the South of England it will flower pretty freely in seasons which have been preceded by warm dry autumns, and not, as you suppose, at definite intervals of three or five years. It is not perfectly hardy, and often suffers considerably if a wet autumn is succeeded by a hard winter.—*A. G. B.* Brassavola lineata.—*J. Cocker & Sons.* Diplacus glutinosus.—*R. C. C.* Anemone alpina.—*Lady L.* The brittle Bladder-Fern, Cystopteris fragilis.—*Thomas.* Dendrobium suavissimum.—*F. H. H.* 1, Maxillaria tenuifolia; 2, very small form of Brassia verrucosa; 8, Ivy-leaf Pelargonium Madame Thibaut; 9, Dactylis glomerata; Carnation Souvenir de la Malmaison; Oplismenus variegata.—*J. H.* 1, Saxifraga umbrosa, 2, Viburnum Lantana; 3, Passiflora Empress Eugenie; 4, Allium ursinum; 5, Centaurea montana; 6, Mespilus germanica; 7. Saxifraga hypnoides; 8, Iberis coriilia; 9. Pavia flava; 10, a Cratægus that we cannot recognise from the small piece sent.—The leaves of the Peach have been eaten by a weevil. Search for them by night.

Narcissus Fly: *W. J. W.* The too well known Narcissus fly, Merodon, often figured in these columns.

Orchids: *E. Cooper.* The Odontoglossum crispum roseum is of the highest merit, and O. Pescatorei is one of the finest we have seen.

Pelargonium: *E. J. J.* Such curiosities are not rare, and they are sometimes pretty.

Tomato Roots Diseased: *J. H.* The nodes are caused by Vibrio, and when present in great numbers these are injurious.

Vanda teres: *Duke of Marlborough.* Very rare; the best white we have seen. It is different from the variety Aurora in not having any pink colour.

Vines: *Cambrian.* If the canes have not made much progress, disbudding will be better than pruning; otherwise wait till the autumn.

Intelligent Readers, do please Note *that letters relating to* Advertisements, *or to the supply of the Paper, should be addressed to the* Publisher, and that all communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor. Such communications should be *written on one side only of the paper*, and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

CATALOGUES RECEIVED.

Ewing & Co., Sea View Nurseries, Havant, Hants—New Roses, 1887.

Jacques Lechævalier, 23, Rue Racine, Paris—Horticultural, Botanical, &c., Books.

Communications Received.—Sir T. L.—R. W. A., Natal.—A. D. W. (many thanks. A. Morinda has not been described).—Max Leichtlin.—Rchb. f.—Professor Engler, Breslau.—C. Naudin, Antibes.—E. Goeze, Griefswald.—Th. Athens.—I. Nagasaki.—H. & P. (with many thanks).—G. P.—W. B. H. J. T. B.—W. H. B.—W. G. S.—R. D.—Not inserted for want of space:—Report Edinburgh Botanical Society, Calendars—W. M. B., H. W. W., Scottish Horticultural Association.—Sir C. Strickland.—J. G. B.—W. J. M.—C. P.—F. Roemer (received with thanks).—De Buysman.—J. F. & Co.—Cassell & Co.—E. C.—Geo. Syme.—S. H.—T. C. March.—D. T. F.—Shuttleworth, Carder & Co.—W. E.—J. G.—J. J. W.—W. L.—A. D. W.—Wild Rose.—C. W. D.—J. Laurie.—W. S.—W. B. H.—W. H. B.—L. M., Erfurt.—J. T. B.

Markets.

COVENT GARDEN, June 16.

[We cannot accept any editorial responsibility for the subjoined reports, which, however, are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations represent averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and they fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the particular prices at any particular date, and still less can they be taken as guides to the prices in the coming week. Ed.]

Business steady all the week, with heavy supplies of all classes of goods, owing to the fine weather, Strawberries alone coming short. *James Webber, Wholesale Apple Market.*

Plants in Pots.—Average Wholesale Prices.

	s. d. s. d.
Aralia Sieboldi, doz.	6 0–18 0
Arum Lilies, dozen...	9 0–12 0
Azaleas, per dozen ...	18 0–30 0
Cinerarias, per doz...	6 0– 9 0
Cyperus, per dozen .	4 0–12 0
Dracæna terminalis, per dozen ...	30 0–60 0
— viridis, per doz.	9 0–24 0
Erica, various, per dozen ...	18 0–30 0
Euonymus, in var., per dozen ...	6 0–18 0
Evergreens, in var., per dozen ...	6 0–24 0
Fairy Roses, doz. ...	8 0–12 0
Ferns, in variety, per dozen ...	4 0–18 0
Ficus elastica, each .	1 6– 7 0
Foliage plants, various, each ...	2 0–10 0
Fuchsias, doz. ...	4 0–12 0
Hydrangeas, doz. ...	9 0–12 0
Lilium longiflorum, per dozen ...	24 0–36 0
Lily-of-Val., 12 pots	12 0–18 0
Lobelias, dozen ...	4 0– 6 0
Marguerite Daisy, per dozen ...	6 0–12 0
Mignonette, doz. ...	6 0– 9 0
Musk, per dozen ...	3 0– 6 0
Myrtles, per dozen...	6 0–12 0
Palms, in var., each	2 6–21 0
Pelargoniums, dozen	6 0–18 0
— scarlet, per doz.	4 0– 8 0
— Ivy-leaved, doz.	4 0– 6 0
Rhodanthe, dozen ...	6 0– 9 0
Roses, various, per dozen ...	18 0–30 0
Spiræa, per dozen ...	9 0–12 0

Cut Flowers.—Average Wholesale Prices.

	s. d. s. d.
Abutilons, 12 bun ...	2 0– 4 0
Anemone, 12 bun. ...	2 0– 4 0
Arum Lilies, 12 blms.	3 0– 5 0
Azaleas, 12 sprays ...	0 6– 0 9
Bouvardias, per bun.	0 6– 1 0
Camellias, 12 blooms	1 0– 3 0
Carnations, 12 blms.	0 9– 2 0
Eucharis, per dozen	4 0– 6 0
Gardenias. 12 blooms	1 0– 3 0
Heliotropes, 12 spr.	0 6– 1 0
Jasmine, white, bun.	0 6– 0 9
Lilac, 12 bunches ...	4 0– 8 0
Lilies of the Valley, 12 sprays ...	0 6– 1 6
— 12 bunches ...	6 0–12 0
Lilium longiflorum, 12 blooms ...	3 0– 6 0
Marguerites, per 12 bunches ...	3 0– 6 0
Mignonette, 12 bun.	3 0– 6 0
Myosotis, 12 bun. ...	2 0– 6 0
Narcissus, 12 bun, ...	1 0– 3 0
— double, 12 bun...	3 0– 6 0
Pansies, 12 bunches	2 0– 3 0
Pelargoniums, 12 spr.	0 6– 1 0
Primroses, 12 bun....	0 6– 1 0
Primulas, double, 12 sprays ...	0 9– 1 0
Roses, Tea, per doz.	1 0– 2 0
— coloured, dozen.	2 0– 4 0
— red, per dozen ...	1 6– 2 0
— Saffrano, dozen...	1 0– 1 6
Spiræa, 12 bunches..	6 0– 9 0
Stephanotis, 12 spr.	2 0– 4 0
Tropæolums, 12 bun.	1 0– 2 0
Tulips, 12 bunches ...	2 0– 4 0
Tuberoses, 12 blms....	1 0– ...
Violets, 12 bunches...	0 4– 0 9
Wallflowers, 12 bun.	3 0– 6 0

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apple, ½-sieve	2 6– 4 0	Melons, each	1 6– 3 0
— Nova Scotia, brl.	8 0–12 0	Peaches, dozen	4 0–12 0
Grapes, per lb.	3 0– 5 0	Pine-apples, Eng., lb.	1 0– 1 6
— Channel Isl., lb.	2 0– 3 0	— St. Michael. each	3 0– 8 0
Lemons, per case	12 0–21 0	Strawberries, per lb.	1 6– 5 0

VEGETABLES—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, per doz.	4 0– ...	Lettuce, Cos., Fr., each	0 6– ...
Asparagus, French, per bundle	2 0– 6 0	Mushrooms, punnet	1 6– 2 0
— English, per 100	5 0– ...	Mustard and Cress, punnet	0 4– ...
Beans, Kidney, lb.	2 0– ...	Onions, per bushel	4 0– ...
Beet, red, per dozen	1 0– 2 0	Parsley, per bunch	0 6– ...
Carrots, per bunch	0 6– ...	Peas, per quart	2 6– ...
Cauliflowers, spring, each	0 9– ...	Potatos, per cwt.	4 0– 5 0
Celery, per bundle	1 6– 2 0	,, kidney, per cwt.	4 0– 5 0
Cucumbers, each	0 6– 1 0	Rhubarb, per bundle	0 6– ...
Endive, per dozen	3 0– ...	Shallots, per lb.	0 3– ...
Green Mint, bunch	0 4– ...	Spinach, per bushel	2 0– ...
Herbs, per bunch	0 4– ...	Sprue, bundle	1 0– ...
Leeks, per bunch	0 3– ...	Tomatos, per lb.	1 6– ...
Lettuce, per dozen	1 6– 2 0	Turnips, new, bunch	0 4– ...

POTATOS.—Old samples very much advanced in price. Regents, 140*s.*; Magnums, 150*s.*; Champions, 100*s.* per ton. New, 16*s.* to 20*s.* per cwt.

SEEDS.

LONDON: *June* 15.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., write that the seed market to-day was of quite a holiday character, the transactions being as nearly *nil* as possible. The Clover plant is very healthy and promises well; but the season is considerably later than usual. An occasional order for Tares still drops in, Mustard and Rape seed for sowing continuing in fair demand. There is nothing fresh to report in the trade for blue boiling Peas. Feeding Linseed is quiet.

CORN.

Averages.—Official statement showing the average price of British corn, imperial measure, in the week ended June 11:—Wheat, 35*s.* 4*d.*; Barley, 22*s.* 1*d.*; Oats, 17*s.* For the corresponding week in 1886:—Wheat, 31*s.* 11*d.*; Barley, 25*s.* 2*d.*; Oats, 20*s.* 2*d.*

FRUIT AND VEGETABLES.

COLUMBIA (EAST LONDON): *June* 15.—Moderate supplies of all kinds; trade fairly active at prices as follows:—Cabbages, 2*s.* to 4*s.* per tally; Spinach, 1*s.* to 1*s.* 6*d.* per sieve; Cos Lettuces, 1*s.* 3*d.* to 1*s.* 9*d.* per score; Cabbage do., 8*d.* to 10*d.* do.; Radishes, 6*d.* to 8*d.* per dozen bundles; Greens, 2*s.* to 2*s.* 6*d.* do.; spring Onions, 1*s.* 6*d.* to 2*s.* do.; foreign Onions, 5*s.* 6*d.* to 6*s.* per cwt.

STRATFORD: *June* 14.—Supplies during the past week have been good, and a fair trade was transacted at the following prices:—Cabbages, 3*s.* per tally; Greens, 1*s.* 9*d.* per dozen; Cauliflowers, 2*s.* do.; Carrots, household, 45*s.* to 55*s.* per ton; Mangels, 11*s.* to 18*s.* do.; Onions, spring, 3*s.* per dozen bundles; Watercress, 6*d.* per dozen; Cucumbers, 2*s.* do.; Gooseberries, 2*s.* to 2*s.* 6*d.* per half-sieve.

POTATOS.

BOROUGH AND SPITALFIELDS: *June* 14.—Old Potatos are in very narrow compass, and the really good qualities having been almost entirely cleared out, the assortment is unattractive, and prices range lower. New Potatos are coming in more freely, and prices easing down in consequence. Quotations:—Old: Regents, 70*s.* to 90*s.*; Magnum Bonums, 70*s.* to 105*s.*; Champions, 70*s.* to 80*s.* per ton. New: Malta rounds, 8*s.* to 10*s.*; Jersey kidneys, 13*s.* to 15*s.* per cwt.; German reds, 2*s.* to 8*s.*; Belgian Magnums, 3*s.* 9*d.* to 4*s.* per bag.

Imports.—The imports into London last week consisted of 9830 bags from Stettin, 9003 Hamburg, 8971 Ghent, 2929 half-boxes, 16,063 packages Lisbon, 357 cases, 256 baskets, 54 casks, 60 packages Malta.

ORLEANS: *June* 10.—Those of your readers who may visit Orleans should go to see the Magnolias at the Château of Chateauneuf-sur-Loire, the property of Mademoiselle Parent, who allows visitors to walk through her grounds. The château, which before the Revolution belonged to the Dukes de la Vrillière and Marquess de Chateauneuf, and since to M. Rigollot, stands in a position similar to that of Taplow Court, but the low land of the river is here one great forest of Magnolias, many of them over 50 feet in height. *D.*

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AMERICAN LAWN MOWERS.

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Paris Exhibition, 1878;

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"The 'ARCHIMEDEAN' did the BEST WORK of any Lawn Mower exhibited."

ALSO AT

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AND AT

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Opinions of the Press:

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"The quickest, most simple, and most efficient mower ever used."—Vide *Gardeners' Chronicle.*

"We feel bound to recommend it to our readers as one of the best mowers we have as yet made acquaintance with."—Vide *Floral World.*

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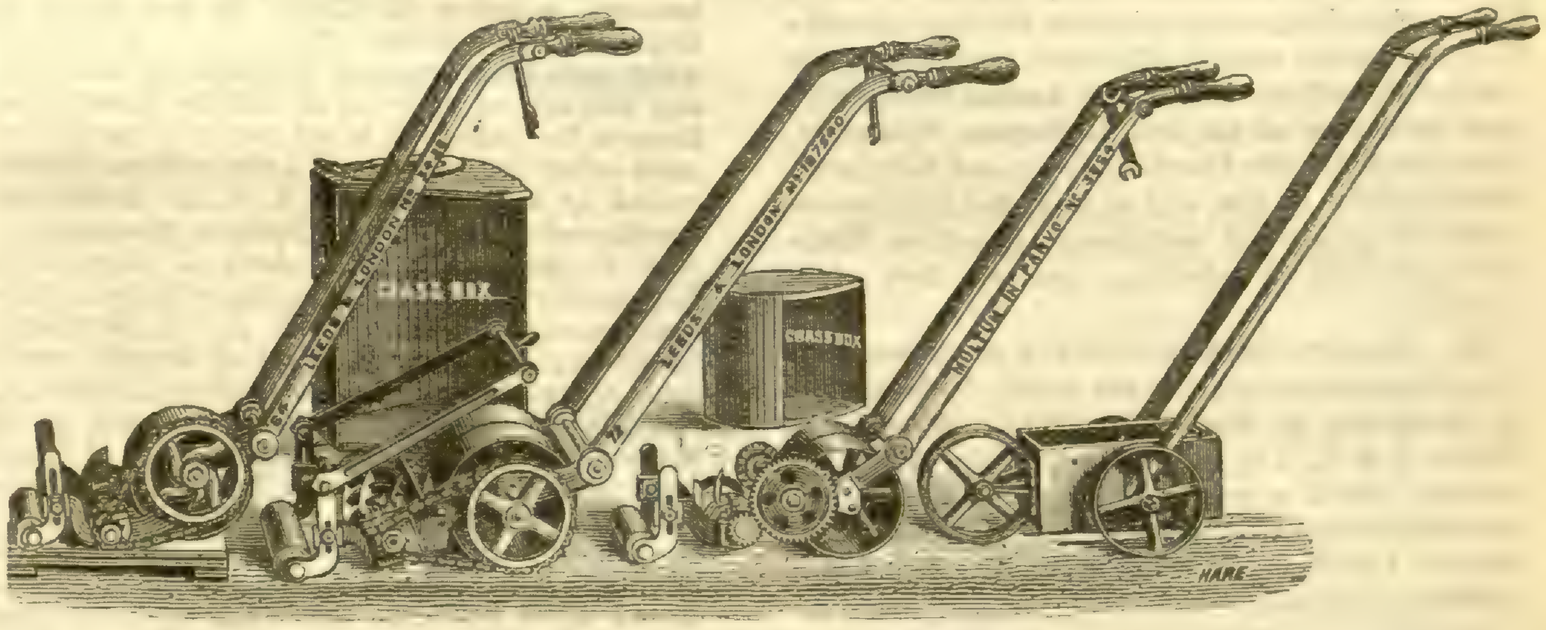

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Price with 1 wheel, for ordinary Courts, 14s.
,, ,, 3 wheels, for ordinary Courts, 17s.
Large Size for Clubs and Large Grounds, 20s.
Bag of Marking Compo ... ... 9d.

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LINES and TWINES,
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June 18, 1887.

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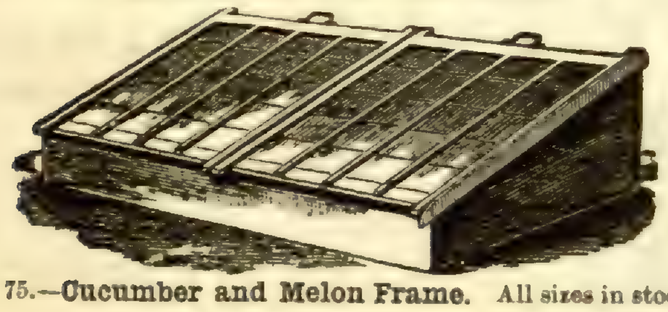
Cases are allowed in full when returned.



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2-LIGHT FRAME	8 feet by 6 feet ...	£3 5 0
3 " "	12 feet by 6 feet ...	4 12 6
4 " "	16 feet by 6 feet ...	6 0 0
5 " "	20 feet by 6 feet ...	7 7 6
6 " "	24 feet by 6 feet ...	8 15 0

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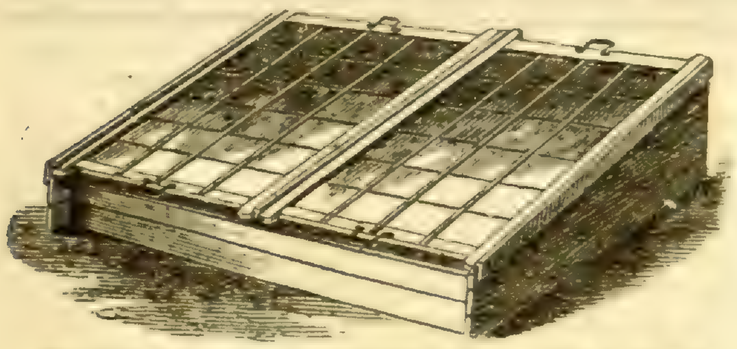

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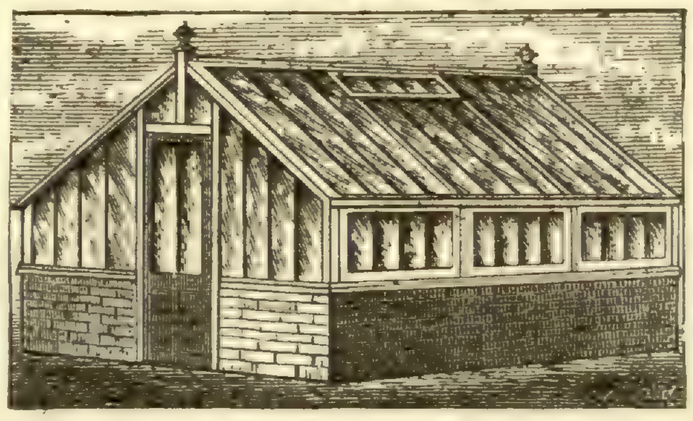

Length. Width.		Length. Width.	
10 by 8 ft.	£7 7 0	30 by 12 ft.	£23 19 6
15 by 10 ft.	11 15 0	40 by 14 ft.	34 9 0
20 by 12 ft.	17 4 6	50 by 14 ft.	42 1 0

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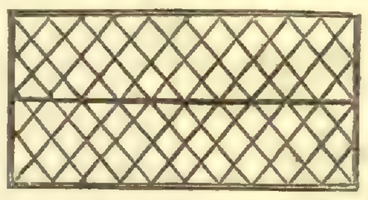

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6-inch	4-inch	3-inch	2-inch	1½-inch mesh.
2d.	3d.	3½d.	4d.	4½d. per foot super.

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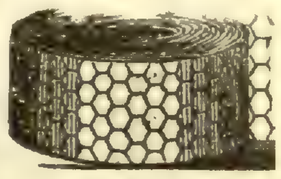

Mesh.	2 ft. wide. s.	d.	3 ft. wide. s.	d.	4 ft. wide. s.	d.	6 ft. wide. s.	d.
3-in.	3	4	5	0	6	8	10	0
2-in.	4	6	6	9	9	0	13	6
1½-in.	6	6	9	9	13	0	19	6
1-in.	8	0	12	0	16	0	24	0

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260 " " ½ cwt. ...	12	6
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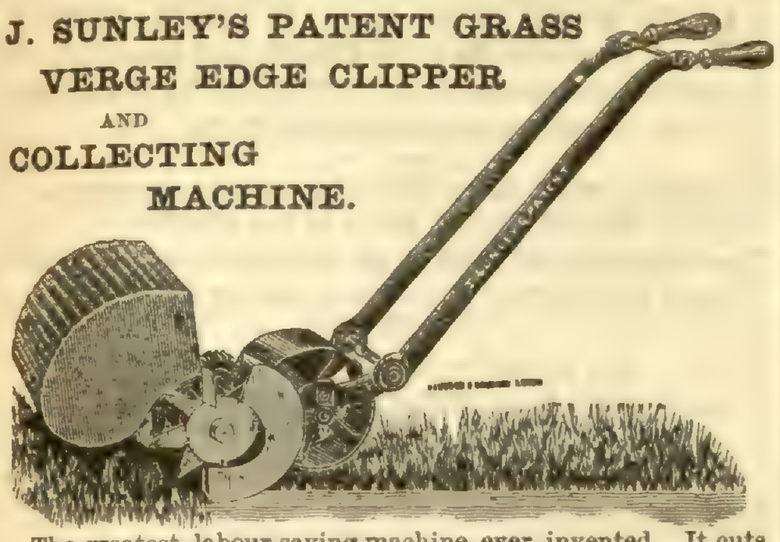

The greatest labour saving machine ever invented. It cuts the overhanging grass on grass verge edges, &c, and collects every blade. It will cut and collect it ten inches long. It can be regulated with the front rollers to cut any depth between 2½ inches. It is equal to four men, and is highly praised by all who have tried it. No place should be without it. Days of work done in a few hours, labour made easy, and garden expenses considerably reduced.

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TANNED NETTING, 2 yards wide, 1½*d*. per yard; 10*s*. per 100 yards; 25 yards 2 yards wide post-free 4*s*.; 4 yards wide, 3*d*. per yard; 20*s*. per 100. NEW TWINE NETTING, 1 inch mesh, 1 yard wide, 2*d*.; 2 yards wide, 3*d*.; 4 yards wide, 6*d*. per yard. COTTON NETTING, 54 inches wide, 19 meshes to square inch, 7*d*. per yard (best article to protect fruit trees, &c.). BAT FOLDING NETS, on Bamboo poles, 20*s*. CLAP NETS, for birds, 30*s*.
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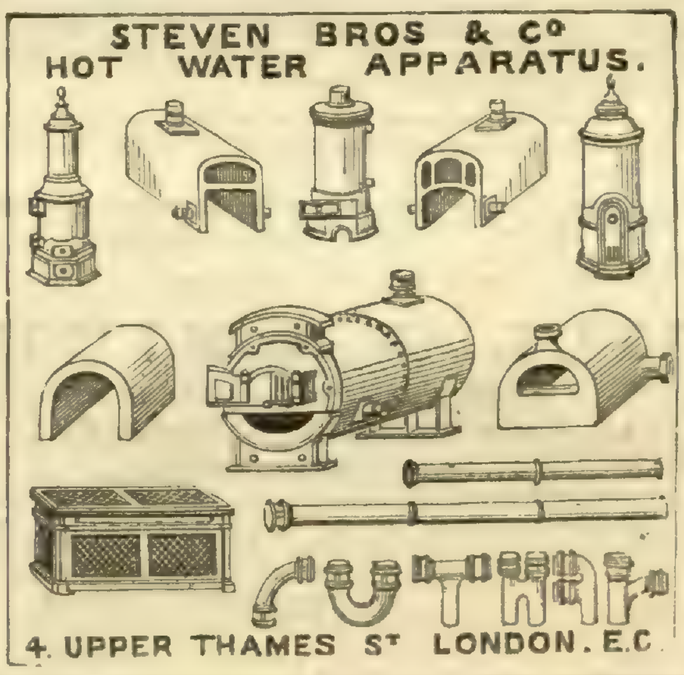

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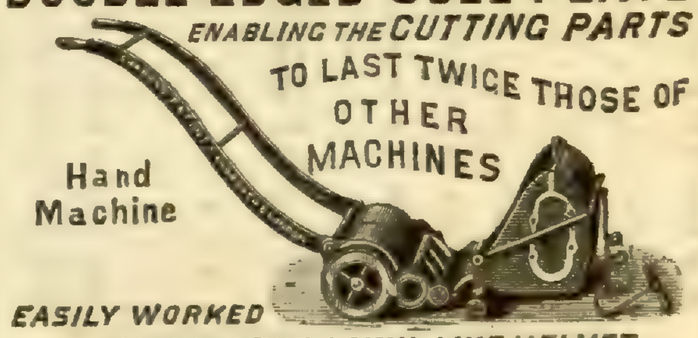

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THIS MACHINE IS EASIER TO WORK THAN ANY OTHER
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GARDEN ROLLERS
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A LARGE STOCK OF MACHINES OF ALL SIZES ALWAYS KEPT AT 27, LEADENHALL STREET
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SMALL LAWN MOWERS
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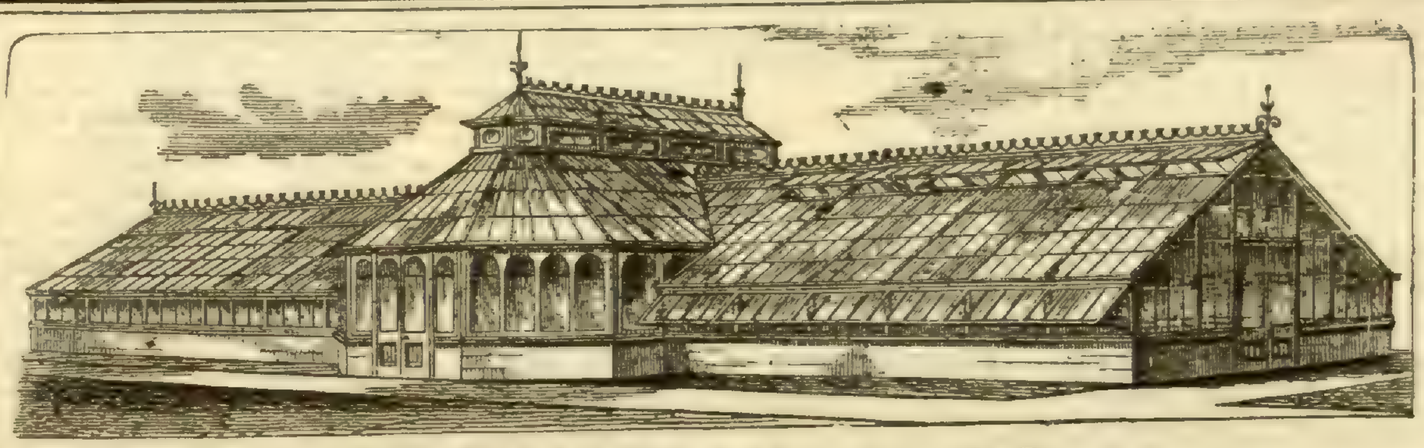

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Vineries, Stoves, Greenhouses, Peach Houses, Forcing Houses, &c., constructed on our improved plan, are the perfection of growing houses, and for practical utility, economy, and durability cannot be equalled. We only do one class of work, and that THE VERY BEST.

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Our Maxim is and always has been—
MODERATE CHARGES. FIRST-CLASS WORK. THE BEST MATERIALS.

HORTICULTURAL STRUCTURES of EVERY DESCRIPTION, in EITHER WOOD or IRON, or BOTH COMBINED.
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Very easy to work, strong—the best Implement of its type. Numerous testimonials.

Very simple, durable, will wear for years. Price, 30*s*.

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In use twenty years, it may last twenty more.

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"Gentlemen,—I have sent per rail an Aquaject I wish thoroughly repaired except the spreader, I do not want that attached. *I have had it in use constantly for just* 20 *years*, with very little repairs, which speaks well for it; and I think by thoroughly repairing now it may last 20 more.—Yours respectfully, (Signed) W. BROOKES."

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11	„ ..	0	6	6	22	„ ..	0	12	0
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IMPORTANT NOTICE.—Advertisers are cautioned against having Letters addressed to Initials at Post-offices, as all Letters so addressed are opened by the authorities and returned to the sender.

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LADIES!!! you will SAVE 25 to 50 per Cent. by purchasing all your

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EVERY LADY is invited to send us her Name and Address, that our PRICE LIST, and FULL RANGE of PATTERNS (which include SEVERAL NOVELTIES) may be sent her, post-free. Address—

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for preserving Ironwork, Wood, or Stone.

(Registered Trade Mark.)

An excellent substitute for oil paint, at one-third the cost. Used in all London Parks, at Windsor, and Kew Gardens, and on every important estate in the Kingdom. Has stood the test of forty years' trial. Requires no mixing; can be applied cold by any ordinary labourer.

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CAUTION.—Every cask bears the above Registered Trade Mark. Beware of cheap imitations.

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Any one desirous of Renting a Farm or Residence, Purchasing an Estate, can have copies of the MIDLAND COUNTIES' HERALD supplied free for six weeks on stating the purpose for which the paper is required, forwarding name and address, and six halfpenny stamps for postage, addressed "*Midland Counties Herald* Office, Birmingham." The *Midland Counties Herald* always contains large numbers of advertisements relating to Farms, Estates, and Residences for Sale and to be Let.

NOTICE.—F. E. F., 16, Rue du Hâvre, Sainte Adresse, près Hâvre, France, desires to inform the applicants for his opening for a Fruit Grower, that he is NOW SUITED; but there is a VACANCY FOR a YOUNG MAN of good experience under Glass, and conversant with Orchid Growing.—Apply as above, stating terms, &c.

PARTNER, with Capital, REQUIRED, to Extend Business by Opening Branch in seaside town; every facility for large and profitable business. Nursery well situated, with good local trade. Established twelve years.—R. J., 42, Albion Place, West End, Sittingbourne, Kent.

WANTED, a HEAD WORKING GARDENER, to take entire Management of a Large Nursery for Growing Forced Fruit, Flowers, and Vegetables. As entire management is left with him he would be required to invest an agreed sum in the same—say £200—and could have option at Michaelmas of renting Nursery himself, or before if wished.—Answer to A. D., 41, Wellington Street, Strand, W.C.

WANTED, a HEAD WORKING GARDENER, Second man kept and further assistance given. Must be a good practical man, willing to work. Must understand Vines, Stove and Greenhouse Plants, and be well up in Kitchen Garden and all Outdoor Work, as the grounds are extensive. Wages, 26*s* to 28*s*. per week and house. Required to commence duties on 25th inst.—J. BOOTHMAN, Hazelhurst, Heywood, near Manchester.

WANTED, an INDOOR FOREMAN and PROPAGATOR, also able to make up Wreaths, &c. Wages 30*s*. per week.—Apply, with references, to G. AND W. YATES, Nurserymen, Manchester.

WANTED, a young MAN, to do Jobbing, Gardening, and to fill up time in Nursery.—Age about 20. Wage 16*s*. per week.—J. BULLARD, 59, Vauxhall Street, Norwich.

WANTED, a steady MAN (age 26), accustomed to Growing for Market Grapes, Cucumbers, Tomatos, Tea Roses, Ferns, and Cut Flowers generally. Wages, 24*s*. weekly.—A. Z., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

WANTED, TWO active young MEN, for Cucumber, Tomato, Grape Growing, &c.—Must be quick at Tying.—JOSEPH ROCHFORD, Turnford Nursery, near Broxbourne, Herts.

WANTED, a young MAN, for small but busy Nursery, to take Charge of the Houses, and Work up good Saleable Soft-wooded Stuff at all seasons of the year. Must produce recommendation to that effect.—State wages required to A. ELLIS, Florist, Cardiff.

Seed Trade.

WANTED, an energetic MAN, to Travel among Market Gardeners in the North of England. One with a connection preferred. Full particulars, stating experience, wages, &c.—SUNRISE, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

WANTED, for a Small Nursery, an energetic LABOURER, who has been used to the work. Constant employment. Wages to commence, 18*s*. per week.—W. DALE, Hickmandias Nursery, Knockholt, Kent.

WANTED, for a Retail Seed Shop, a young Lady of respectable appearance and amiable disposition. One with slight knowledge of Vegetable and Flower Seeds preferred. Unimpeachable character indispensable. Any one desirous of securing a permanent and comfortable home.—Apply, stating full particulars, to SEEDSMAN, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

GARDENING APPOINTMENTS.

Mr. E. Vince, late Head Gardener at Borden Wood, Liphook, has been appointed Head Gardener to T. Firbank, Esq., Coopers, Chislehurst, Kent.

Mr. A. Kett, for the past five years Head Gardener to Sir Robert Affleck, Bart., Dalham Hall, has been appointed Head Gardener to F. Penn, Esq., Ousden Hall, Newmarket, Suffolk.

Mr. J. Jaques, from Mrs. Perrins, Davenham Bank, Great Malvern, has been appointed Gardener to Baron Ferdinand Rothschild, M.P., Waddesdon Manor, Aylesbury, and will start on his duties on July 1.

Mr. J. Laine, late of Rawdon, Leeds, has been appointed to take charge of the estate of Lady Mary Gordon, Northcourt, Newport, Isle of Wight.

WANT PLACES.

POSTAL ORDERS.—To Advertisers, Subscribers, and Others.—It is very important in Remitting by Postal Order that it should be filled in payable at No. 42, DRURY LANE, to W. RICHARDS, as, unless the Number of a Postal Order is known, and it has been made payable at a particular office, and to a particular person, it is impossible to prevent any person into whose hands it may fall from negotiating it.

N.B.—The best and safest means of Remitting is by POST-OFFICE ORDER.

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Advertisers are requested when Remitting to give their Names and Addresses, and also a Reference to the Advertisement which they wish repeated.

Situations Wanted.

JOHN LAING and CO., having filled many important places, can RECOMMEND with every confidence, energetic and practical MEN of tested ability and first-rate character. Ladies and Gentlemen in want of Gardeners and Bailiffs, or Gardeners for first-rate Establishments, or Single-handed situations, can be suited, and have full particulars by applying to us. No fee charged.—JOHN LAING and CO., The Nurseries, Forest Hill, S.E.

RICHARD SMITH and CO. beg to announce that they are constantly receiving applications from Gardeners, seeking situations, and that they will be able to supply any Lady or Gentleman with particulars, &c.—St. John's Nurseries, Worcester.

Gardeners, Under Gardeners, Bailiffs, &c.

WM. CUTBUSH and SON have at the present time on their List MEN whose characters will bear strict investigation, and such as from their personal knowledge can recommend as to abilities, &c.—Ladies and Gentlemen requiring either of the above can be suited with reliable, first-class men by applying to Wm. Cutbush & Son, Highgate Nurseries, N.

To Noblemen and Gentlemen requiring Land Agents, STEWARDS, BAILIFFS, or GARDENERS.

JAMES CARTER and CO. have at all times upon their Register reliable and competent MEN, several of whom are personally well known to Messrs. Carter. Enquiries should be made to 237 and 238, High Holborn, W.C.

THE LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, The Vineyard and Nurseries, Garston, near Liverpool, are at present in a position to recommend a competent man of excellent character as HEAD GARDENER, and also another MAN, who, in addition to being a good General Gardener, has had great experience as an Orchid Grower Both men are capable of Managing Large Establishments

GARDENER (Head).—No family; seventeen years' experience in first-rate Gardens, five as Head. Very highly recommended as efficient, sober, and trustworthy. —J. GORE, Polegate, Sussex.

GARDENER (Head); age 27.—J. Bansor, Gardener to the late E. Armitage, Esq., The Rookery, Pendleton, Manchester, wishes to recommend his Foreman, Joseph Cookson, to any Lady or Gentleman requiring a good practical Gardener. For particulars apply as above.

GARDENER (Head).—G. Beddoes, six years Head Gardener and Orchid Grower to the late R. P. Percival, Esq., of Clevelands, Birkdale, Southport, is open to an engagement with any Lady or Gentleman requiring the services of a thoroughly practical man.—Address as above.

GARDENER (Head); age 30.—J. C. Macpherson, Gardener to the Right Hon. Lord Londesborough, Northerwood, Lyndhurst, Hants, would be pleased to recommend his Foreman (F. Taylor) to any Lady or Gentleman requiring the services of a thorough practical man. Two years' good character, with good testimonials from previous employers.

GARDENER (Head), where two or more are kept.—Age 35; first-class Fruit, Flower, and Vegetable Grower. Good references.—H., 7, Butterfield Street, Bromley Road, Lee.

GARDENER (Head).—F. Ford, fourteen years with H. Norris, Esq., Swatcliffe Park, Banbury, is now at liberty to engage with any Lady or Gentleman requiring the services of a thoroughly efficient man in all branches, including Land and Estate Work. Excellent character.—F. FORD, 5, Queen Street, Banbury.

GARDENER (Head); age 28, single.—H. Downing, Gardener, Norbury Park, will be pleased to recommend to any Lady or Gentleman a thoroughly experienced man in all branches. He is very steady and respectable, and can have most excellent character from here and other places where he has been living as Foreman. Shall be pleased to answer any inquiries.

GARDENER (Head Working).—Mr. A. Jamieson, Gardener to the Earl Crawford, Haigh Hall, Wigan, will be pleased to recommend to any Lady or Gentleman requiring the services of a thoroughly competent man as above.

GARDENER (Head Working).—Mr. Forbes, Gardener to W. Drury Lowe, Esq., Locke Park, near Derby, can highly recommend his Foreman, Frederick Beney, to any Lady or Gentleman requiring a practical Gardener. Fourteen years' experience.—Address as above.

GARDENER (Head Working).—Age 32, married, no family; sixteen years' thorough practical experience in good establishments. Excellent references as to ability and personal character from last and previous employers.—W. WAINWRIGHT, Woodhouse, Sheffield.

GARDENER (Head Working).—Age 42, married, one girl (age 13); twenty-five years' practical experience in all his profession, and in Orchid Growing. Six years' good character from present employer.—H. C., Stoke Hill, Guildford, Surrey.

GARDENER (Head Working), where others are kept; married.—A Gentleman recommends his late Head Working Gardener, thoroughly experienced, energetic, and trustworthy. Good Plant and Fruit Grower. Excellent character and testimonials.—LAND, Capers, Vermont Cottages, St. Paul's, Rusthall, Tunbridge Wells.

GARDENER, where two or three are kept.—Eleven years' experience in three first-class establishments, from which he can be well recommended. Understands Early and Late Forcing.—J. CLARK, 5, Leicester Road, Ashby-de-la-Zouch.

GARDENER (Single-handed, or Under).—Age 23; well experienced in Houses, Flower and Kitchen Garden. Good character. Abstainer.—A. H., 20, Hawthorn Green, Anerley, S.E.

To Head Gardeners.

GARDENER (Second); married, two children. —Wanted by advertiser (who has had a garden on his own hands, and two or three men under him), the experience of a larger establishment, as Second. Would give £3 in consideration for such a place.—L. Z., 3, Earl's Terrace, Park Lane, Tottenham, Middlesex.

GARDENER (Second), or JOURNEYMAN. —Nine years in the Gardens of Miles MacInnes, Esq., M.P., Rickerby, Carlisle.—T. B., 32, Elgin Terrace, Maida Vale, London, W.

GARDENER (Under), or MANAGE Plain Garden. No objection to stable work. Age 25.—J. ANSELL, Red Cross Coffee Tavern, Combe Down, Bath.

GARDENER (Under), in a Gentleman's family.—Age 21; twelve months' good character.—T. WICHAM, 2, Leyton Terrace, Hurstpierpoint, Sussex.

GARDENER (Under), Inside and Out.—Age 25; used to Pleasure Grounds. Four years' good character. —S. T., 55, Upper Park Road, Haverstock Hill, London, N.W.

To Gardeners.

GARDENER (Under).—Age 25; has had good experience in Flower and Kitchen Gardens. Can be well recommended.—J. WRIGHT, Dalham, Newmarket.

ORCHID GROWER, or FOREMAN; age 25. —J. Stewart, The Gardens, Langford Park, Maldon, Essex, can confidently recommend his Foreman, E. Bristow, who has been with him five years, to any one requiring his services in either of the above capacities.—Address as above.

FOREMAN (Inside).—Age 23; nine years' experience in Grapes, Peaches, and Tomatos. Two years' good character.—A., Mr. Sales, Wickham Road, Shirley, Croydon.

FOREMAN and GENERAL PROPAGATOR. —Upwards of twenty years' experience in Stove and Greenhouse Plants, Roses, Clematis, &c.; also Wreaths, Crosses, Bouquets, &c.—A. B., Mr. Hickenbottom, Nurseryman, Buckingham.

FOREMAN, or FIRST JOURNEYMAN, in a good establishment.—Age 24: has a good practical knowledge of Orchids, Plant and Fruit Growing, Forcing, &c. Three years' reference as Foreman.—W. WATSON, The Gardens, Newlands Park, Sydenham, S.E.

PROPAGATOR and GROWER of Soft-wooded Plants.—Age 27; used to Market Nursery. Good reference.—J. HARRISON, 14, Orchard Road, Plumstead, Kent.

To Market Gardeners and Nurserymen.

PROPAGATOR and GROWER for Market. —First-class references.—JUPP, Florist, New Flower Market, Newcastle-on-Tyne.

JOURNEYMAN (First), in a good establishment.—Age 21; can be well recommended. Two years in last situation.—R. WEBB, Post Office, Duxford, Cambs.

JOURNEYMAN (First), in the Houses, in a good Garden establishment.—Age 22; eight years' experience. Two years present place. Highly recommended.—F. PRICE, Ewell Road, Surbiton.

JOURNEYMAN (First), in the Houses; age 26.—J. Page, of Monteviot Gardens, can highly recommend C. Robertson, as above. Bothy preferred.—C. ROBERTSON, Monteviot Gardens, Jedburgh, N.B.

JOURNEYMAN, in a good establishment.—Age 20; good character. Bothy preferred.—W. FOLKES, Pine-apple Nursery, Maida Vale, W.

JOURNEYMAN, under a Foreman; age 23.—J. Street, Gardener, wishes to recommend a young man.—J. CRACKNELL, The Gardens, Fulwell Park, Twickenham, Middlesex.

IMPROVER, or UNDER GARDENER; age 19.—J. E. Smith, Gardener to Col. Coussmaker, wishes to recommend the above.—The Gardens, Westwood, Guildford, Surrey.

IMPROVER, in a Gentleman's Garden or Nursery.—Age 20; three years' experience. Good references.—A. KERR, Nursery Manager, Kelso, N.B.

KNIFEMAN.—Age 24; well experienced in Budding, Grafting, and the routine of Outdoor Fruit Growing. Eleven years' good character.—JOHN PERRIN, London Road, Sawbridgeworth, Herts.

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SALESMAN, Covent Garden.—Wanted an engagement as above. Has been Selling for J. B. Butterfield during the last five years.—Apply, 49, 50, 51, New Flower Market; or THOMAS DOWNES, J. B. Butterfield, The Ferns, Freezywater, Waltham Cross.

SHOPMAN; age 22.—Thos. Butcher can recommend A. Naylor to any firm requiring a reliable hand, having had four years' general Counter-work with him. He has a fair knowledge of Plants and their value. Can Assist at Books.—A. NAYLOR, Thos. Butcher, London Road Nursery, Croydon.

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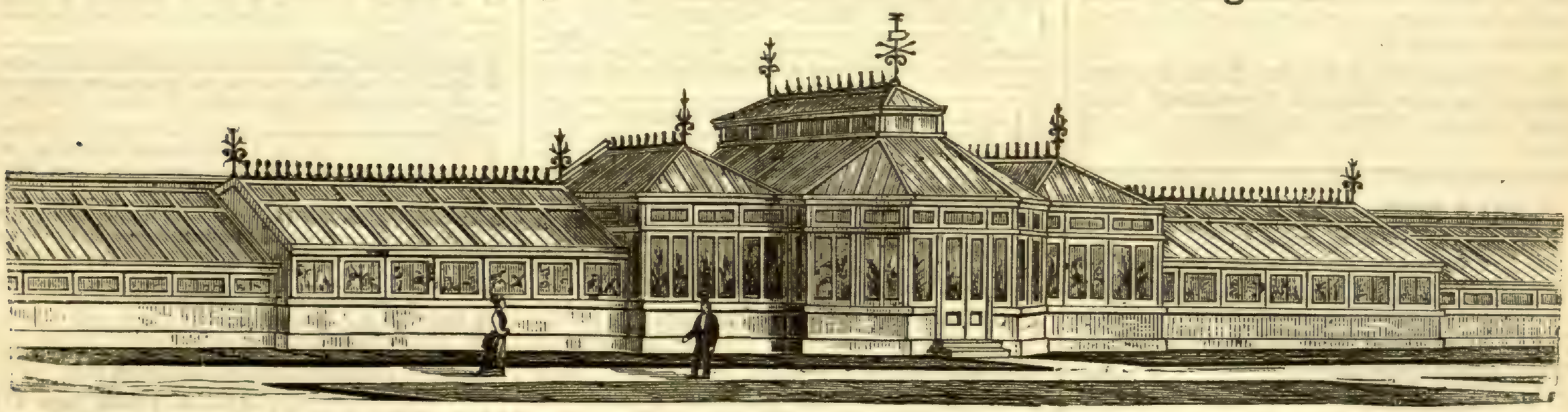

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CONTENTS.

Aërides mitratum ...	834	Narcissus tortuosus tenuifolius Leda	833
Carnation, pink Malmaison	838	Orchid-houses, the ...	840
Chiswick Gardens ...	839	,, notes	834
Cœlogyne Hookeriana brachyglossa	833	Phalænopsis Mariæ ...	834
Crinum longifolium var, Farinianum	833	Phylloxera laws	836
Flower garden, the ...	841	Pinus parviflora	839
Fordell	834	Plants and their culture .	835
Fruits under glass ...	841	Post Office, the	838
Gardeners' Orphan Fund	837	Potato culture	835
,, Royal Benevolent...	838	Rose Earl Dufferin ...	838
Gardening appointments	847	Roses, new	839
Gray, Dr. Asa	836	Scotland	839
Hardy fruit garden, the .	841	Siberian products, exhibition of...	838
Hildenbrantia rivularis...	839	Societies—	
Jubilee bouquet, the ...	836	Royal Horticultural ...	840
Manchester Botanical and Horticultural Society's Gardens...	838	Edinburgh Botanical...	839
Masdevallia muscosa a sensitive plant... ...	836	Superphosphate of lime .	839
National colours in flowers	837	Tulipa chrysantha ...	839
		Watering trees against walls	839
		West Indian forest, a ...	831
		Weather, the	841

ILLUSTRATIONS.

Bulbs, black canker on	840
Fordell Castle	837
,, ,, flower garden	835
Heterosporium ornithogali	840
Narcissus tortuosus tenuifolius Leda	832, 833

ROYAL HORTICULTURAL SOCIETY,
South Kensington, S.W.

A SPECIAL GENERAL MEETING of the Fellows will be held at 3 P.M., on TUESDAY, June 28, in the Conservatory, to consider the results of the negotiations and inquiries which have been made by the Council as to the future maintenance and housing of the Society.

N.B.—Entrances, N.E. Orchard House, Exhibition Road; and east side of Royal Albert Hall.

ROYAL HORTICULTURAL SOCIETY,
South Kensington, S.W.

NOTICE!—COMMITTEE MEETINGS: Scientific, at 1 P.M., in the Lindley Library; Fruit and Floral, at 11 A.M., in the Conservatory, on TUESDAY NEXT, June 28.

SPECIAL PRIZES offered by Messrs. James Carter & Co., Sutton & Sons, and Webb & Sons. (See Schedule.)

Admission free to Fellows at 12 o'Clock; and to the Public at 1 o'Clock, upon payment of 1s.

N.B.—Entrances, N.E. Orchard House, Exhibition Road; and Exhibitors' Entrance, east side of Royal Albert Hall.

CRYSTAL PALACE.
GREAT ROSE SHOW of SEASON.
SATURDAY, July 9. Postponed from July 2.
For Schedules and Entry Forms apply to
Mr. W. G. HEAD, Garden Superintendent, Crystal Palace, S.E.

ALEXANDRA PALACE,
London, N.

GREAT ROSE SHOW, JULY 14, 15, and 16. Entries Close July 7, 1887. For Schedules and full particulars, apply to J. S. COOKE, Secretary of the Show, Alexandra Palace, N.

BRIGHTON and SUSSEX FLORICULTURAL and HORTICULTURAL ASSOCIATION.

GRAND SUMMER EXHIBITION, JULY 6 and 7, at the Royal Pavilion. 1st prize for 10 Stove and Greenhouse Plants, £10. 1st prize for 8 Orchids, £5. 1st prize for 12 Foliaged Plants, £5. 1st prize for 48 Roses, £5. 1st prize for Collection of Fruit, £5. Schedules of prizes ready.

EDWARD CARPENTER, Secretary.

Secretary's Office: 96, St. James' Street,
Brighton, March 28, 1887.

GRAND ROSE SHOW, BATH,
THURSDAY, July 7.

First Prizes, Nurserymen,	72 varieties	...	£8 8 0
,, ,,	36 ,,	...	4 0 0
,, Amateurs	36 ,,	...	5 0 0
,, ,,	24 ,,	...	3 0 0

The 2nd and 3rd Prizes in proportion.

Several other Classes for Roses, Bouquets, Strawberries, and Plants—30 Classes in all. Entries Close July 2. For Prize Schedules apply to

BENJAMIN PEARSON, Secretary, 14, Milsom Street, Bath.

NATIONAL ROSE SOCIETY
OF ENGLAND.
GRAND EXHIBITION
will be held in the
WAVERLEY MARKET, EDINBURGH,
ON
WEDNESDAY, July 13, 1887
In connection with the SUMMER SHOW of the
ROYAL CALEDONIAN HORTICULTURAL SOCIETY.

For Schedules, &c., apply to SECRETARY, Royal Caledonian Horticultural Society, 18, Waverley Market, Edinburgh.

SALTERHEBBLE ROSE SHOW, JULY 21.
INCREASED LIST of PRIZES. For Schedules, &c., apply, ARTHUR M. BEECROFT, Sec., 8, Heath Lane, Halifax.

WELLINGBOROUGH.—A GRAND FLORAL and HORTICULTURAL SHOW will be held at Wellingborough, on THURSDAY and FRIDAY, August 4 and 5, 1887. Open to all England. Schedules of Prizes are now ready, and may be obtained of

CHAS. J. K. WOOLSTON and THOMAS PENDERED, } Hon. Secs.
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T. LAXTON, Seed and Novelty Grower, Bedford.

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Telegraph Address—"COMMISSION, SIDCUP."

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W. ICETON has still some very large SPECIMENS, fit for Exhibition or Immediate Decoration—DRACÆNA LINDENI and LINEATA (true), ARECAS, KENTIAS, SEAFORTHIAS, LATANIAS, from 10 to 15 feet, in fine condition.
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SALES BY AUCTION.

Tuesday Next.

ORCHIDS in FLOWER.—SPECIAL SALE.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY NEXT, June 28, at half-past 12 o'Clock precisely, 300 Lots of ORCHIDS in flower and bud from various collections. Amongst them will be found Cattleya Sanderiana (splendid varieties), Cœlogyne Pandurata, Oncidium macranthum, Dendrobium polyphlebium, Phalænopsis speciosa, Oncidium serratum, Dendrobium nobile nobilius and nobile Cooksonii, numerous fine varieties of Odontoglossum Alexandræ and vexillarium, Cattleyas in variety, &c.

On view morning of Sale, and Catalogues had.

Friday Next.

CATTLEYA SANDERIANA.

A GRAND CONSIGNMENT.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Shuttleworth, Carder & Co., to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, July 1, at half-past 12 o'Clock precisely,

CATTLEYA SANDERIANA, a grand consignment of this beautiful Cattleya, in splendid condition and fine masses, many with good leaves, the whole importation being offered.

CATTLEYA MENDELII, C. MOSSIÆ, ODONTOGLOSSUM ALEXANDRÆ, the best type, in fine condition; O. GRANDE, good masses; LYCASTE SKINNERI, and PILUMNA FRAGRANS NOBILIS.

On view morning of Sale, and Catalogues had.

Brixton.—Clearance Sale.

SALE POSTPONED from WEDNESDAY, JUNE 15 to WEDNESDAY, JULY 6.

IMPORTANT to the TRADE.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, The Nursery, No. 114, Loughborough Road, Brixton, S.W., on WEDNESDAY, July 6, at 12 o'Clock precisely, the whole of the stock of STOVE and GREENHOUSE PLANTS, including 3000 Palms of sorts, 4000 Ferns, HORSE, two VANS, and UTENSILS in Trade.

May now be viewed. Catalogues had on the Premises; of Messrs. PATERSON AND SONS, Solicitors, 26, Bouverie Street, E.C; and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C., and Leytonstone.

Wednesday Next.—(Sale No. 7436.)

CATTLEYA MENDELII.

Grand importation.—Without Reserve.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., by order of Mr. B. R. White, on WEDNESDAY NEXT, June 29, at half-past 12 o'Clock precisely, a grand importation of 1000 pieces of CATTLEYA MENDELII, collected by Mr. Mellican in different districts, and just received in magnificent order. Among the lots will be found many marvellous well leaved masses.

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Wednesday Next.—(Sale No. 7436.)

7 cases of CATTLEYAS, LÆLIAS, ONCIDIUMS, and other ORCHIDS, just received direct from Japan.

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Wednesday Next—(Sale No. 7436.)

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On view morning of Sale, and Catalogues had.

Special Sale of Orchids in Flower.

MR. J. C. STEVENS begs to announce that his next SPECIAL SALE of ORCHIDS in flower and bud will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, July 13, and he will be glad if Gentlemen desirous of entering Plants for this Sale will send particulars as soon as possible.

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Full particulars to A. B., 28, Colenso Road, Clapton Park, E.

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TO BE SOLD, a capital NURSERY, 2½ Acres of Ground, seven Greenhouses and Residence. Rent, £45 Price £400, including Stock.

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Mrs. MELLOR, Ombersley, Droitwich...	2	2	6
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J. MERRITT, Oak Lodge Gardens, Totteridge ...	0	10	0
J. ROBERTS, Gunnersbury Gardens, Acton	1	1	0
J. DERNCUTT, Pye Nest Gardens, Halifax	3	3	0
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HY. MARTIN, Ivy Well Gardens, Bristol	0	10	0
J. H. VALLANCE, The Gardens, Rodland Lodge, Bristol	0	10	0
R. CROSSMAN, Farnham Gardens, Beaminster ...	0	10	0
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D. MORRISON, Lechmelin Gardens, Ross-shire ...	0	17	6
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G. M. BREEZE, Petworth Gardens, Petworth ...	5	0	0
G. W. CUMMINS, Grange Gardens, Hackbridge ...	2	11	6
WM. FINLAY, Lee's Court Gardens, Faversham ...	0	5	0
B. FIELD, 75A, Queen Victoria Street	1	1	0
J. H. FITT, The Frythe Gardens, Welwyn	0	5	0
B. MALLER AND SON, Burnt Ash Nurseries, Lee ...	1	1	0
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F. MILLER, Northdown Gardens, Margate	1	1	0
W. MORTIMORE, Broomford Gardens, Exbourne ...	0	2	6
A. OSBORNE, Huntsland Gardens, Crawley... ...	2	10	0
A. B. WADDS, Osterley Gardens, Southall	0	13	0
WM. TEMPLE, The Gardens, Burley-on-the-Hill, Oakham	1	1	0
CHAS. FOWLER, Barrow Hill Gardens, Henfield ...	0	5	0
WM. WHITTAKER, Manor House Gardens, Stockland, Bridgewater	0	5	0
J. BRYAN, Collingwood Gardens, Farnborough ...	1	1	0
R. PALMER, Hagley Gardens, Stourbridge	0	5	0
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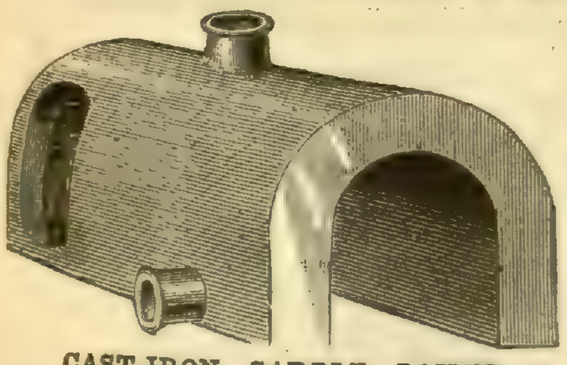

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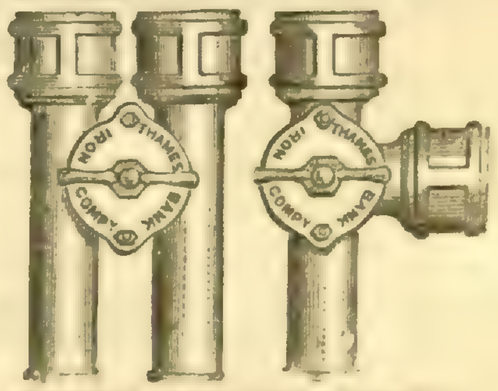

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Baker, G., Gardener, Membland Hall, Plympton, South Devon	1	0	0			
Burnett, J., Gardener, The Deepdene, Dorking	1	1	0	0	5	0
Butcher, E., Gardener to G. Palmer, Esq., The Acacias, Reading	1	0	0	0	10	0
Brewster, A., Gardener, Thame Park, Thame	1	1	0			
Bedford, F., Gardener, Straffan House, Co. Kildare	1	0	0	0	5	0
Bird, W. L., Gardener, Norton Hall, Daventry	1	0	0	0	10	0
Burbridge, H., Grove Nursery, Westgate-on-Sea	1	0	0	0	10	0
Brown, J. G., Gardener, Hatfield Hall, Wakefield	1	0	0	0	5	0

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THE
Gardeners' Chronicle.
SATURDAY, JUNE 25, 1887.

A WEST INDIAN FOREST.

SOON after my arrival in the island of Grenada last July, and when several satisfactory preliminary cruises had been made among the reefs to the south-west of the island in search of the particular marine plants which it was my duty to investigate, I resolved to make a short expedition to the "Grand Etang," a lake in a crater about 2000 feet above sea level, among the peaks of the central mountain mass of the island. Mr. Elliott, the Curator of the Botanic Garden in course of establishment in the island, kindly offered to go with me. He had already visited it, and his offer was most welcome to me, since my experience of land travelling in the tropics was confined to a couple of long rides. Two sturdy negroes (Cox and Cæsar) were selected from among the men at work in the garden, and I may say at once, that their strength, endurance, and cheerful alertness throughout the trip greatly contributed to its success and our comfort. A couple of boxes were packed with collecting equipment, clothes, provisions, bottles, &c., the night before, and placed in readiness for Cox and Cæsar, who started with them at four in the morning, while Mr. Elliott and I followed on horseback two hours later. We did not overtake them until we had nearly completed the ascent to our base of operations. There was no great desire for speed on my part, however, since the way led past magnificent Palms of various kinds, Bread-fruit trees, Mahogany trees, Flamboyants, Nutmeg, Cacao, Mango, and a host of other trees and plants, which make a naturalist fresh from Britain pause. For the first few miles, too, the way led past road-side settlements of negroes, who civilly greeted us from the doors of their cabins. As is well known to everybody, the great emancipation question settled by our fathers has been succeeded by a labour question on which West Indian planters very commonly hold strong opinions, adverse to

the negro. On the voyage out I had been assured by a planter there were two curses of the West Indies—fever swamps and negroes—even mosquitoes making a bad third. The obvious reply, that to set the negroes to drain the swamps would get rid of both, seemed to afford him a subject for reflection on the desirability of bringing fresh minds to the solution of his question. It was in some such way he was convinced the matter would be settled. I do not say he was a typical example, or anything like it, of a kindly and hospitable folk, but I nevertheless failed to see the point of much of the blame cast upon the negro. He finds it possible to maintain himself and his in what is comfort to them by simply squatting judiciously, and therefore he has no desire to labour hard on an estate. Those who grumble at him do not see that, by educating him in the broad sense of the term, his wants will be largely increased; he will be glad to do producive work, and become a better citizen. The administrative authorities in Grenada conspicuously recognise this; education is being vigorously applied, and many excellent members of the community are to be found among the coloured race. Thus only will emancipation be completed. The negro, left to himself, has no arts which have not been taught him by Europeans, except what have been borrowed from the fierce old Caribs, such as the weaving of Carib baskets. The story goes that the last remnant of that warlike race in Grenada leapt from a cliff into the sea at a place called Sauterres, in the north of the island, when beaten by the French in the struggle for freedom. The race still exists in Dominica and the neighbouring island of St. Vincent. In Dominica they roam the forest as of yore, though they no longer eat the casual white man, as their ancestors did. The adjacent island of Tobago justly claims to be the scene of Crusoe's "strange surprising adventures," and Grenada may equally well claim to have furnished his and Friday's savage enemies, the recollection of whom curdles the blood of the boldest.

As we ascend, keeping along a spur from the mountain with a sharp descent to fertile valleys on either hand, a glorious view is obtained of the coast and the vast expanse of the smooth, tideless Caribbean Sea. Tides there are, to be sure, but their rise and fall measure only a few inches. We soon leave habitations behind, and the track mounts upward between the magnificent masses of the pathless tropical forest, wild and untrodden, known only to the monkey, humming-bird, lizard, snake, and armadillo. The temperature is less by 10° Fahr. up here than down at the coast, and though still tropically hot, I feel deliciously cool after days of broiling in boats on a sea ablaze with light, the very bottom gleaming among the coral reefs. The day is yet young when the last ridge is mounted, and a few minutes' ride brings us within sight of the hut beside the lake in the crater. The hut is a half-way house of refreshment for man and beast on this track across the central, uninhabited mountainous region. The host is Mr. Albert Striker, a gentleman of colour, who takes charge of our horses while we take a look round the place, and examine the resources of the hut as a place to sleep in, &c. After a little waiting Cox and Cæsar appear with our baggage, which is duly unpacked and breakfast contemplated. Mr. Striker shows us a card which informs us that besides the provisions we have brought we may procure "beef by the tin, sardines ditto, beer, ginger ale, whiskey, and rum at 6*d.* per shot, or 8*d.* per ungentlemanly shot"—the ungentlemanly shot meaning a too liberal interpretation of the term "shot" by the customer, and the extra 2*d.* representing the expense calculated by Striker of trusting the bottle to ungentlemanly hands! The resources of civilisation have thus followed us into the wilderness—the whiskey said to come from Glasgow, the beer from Burton-on-Trent and Edinburgh. The "internal evidence" caused us to doubt the accuracy of these statements. Aided by a fat negress girl I set about boiling water in a flagon over a wood fire in a smaller shed behind the hut, out of which the smoke drove me every few minutes. The negress calmly fed the fire with small sticks, and grinned at my discomfiture the while. At last she reported it was boiling, and I rushed in, seized the hot flagon with a cloth, and emptied its contents into our teapot. Breakfast over we waited the arrival of Dr. Macleod, who had promised to join us here at midday if the region below, which he was visiting, should prove abnormally healthy. Half-past 12 had gone and he had not come, so we determined to give him till 1 o'clock, and while we waited I noted what is to be seen from Mr. Striker's hut. The track here runs along a ridge, evidently a dyke separating two great extinct craters, one of which has the lake at the bottom. The basins of the craters, the lips and outward slopes of the mountain mass are covered with the densest tropical vegetation, mountain Palms, Tree Ferns, great Silk-cotton trees, &c., bound together by innumerable lianes, and undergrowth in such a tangle that a step off the track is scarcely possible anywhere without cutlass in hand. Along the path in front of us negro women are passing with stones on their heads from the quarry where it is blasted, to be broken at the portion of the road which is here being laid down as an improvement on the track. As they pass in strings of three or four in Indian file they smile and salute us with a "Marnin', sah," and are forthwith admonished by Mr. Striker to move on. Our host's domestic retainers are two in number, Mister William, a negro gentleman, whose European skull and singular facial resemblance to the editor of a well-known literary paper deceived us into an exaggerated

Fig. 158.—Bed of Narcissus Leda: flowers white. (see p. 833.)

respect for him, until sad experience proved his lack of even ordinary negro intelligence. He was working here for his food and shelter, until some one should ascend the mountains, discover his merit, and offer him a better place. Mr. Elliott gave him such a post, but he soon thought the work too hard, and the last I saw of Mister William was on the tramp, three weeks later, in a distant part of the island. The second retainer is Mr. Striker's own brother, who acted as stable-boy to travellers, and body-servant to Mr. Striker. (He rode a donkey behind our host's nag when the excellent Striker went forth in state.) Adventitious aid in cooking is given by any negress who may be about. *G. Murray.*

(To be continued.)

Fig. 159.—Narcissus Leda.

NARCISSUS LEDA.

We have here a reintroduction of much beauty, either when grown as a bed, as seen in fig. 158, or in a pot, fig. 159, for greenhouse decoration. Mr. Hartland, to whom we are indebted for the excellent photographs from which the engravings were taken, says of it in his list of Daffodils, 1886:—"This fine distinct Daffodil has been certified and re-named at South Kensington, spring, 1886. It has been re-introduced from Ireland as a remnant of old gardens, and no doubt was known to Parkinson as one of the true great tortuose white Spanish forms. Perianth pure white, twisted, and shorter than trumpet, which is pale sulphur, changing to snow-white. It has this peculiar feature of recognition, viz., the flowers perfumed oak timber, and the foliage is glaucous and narrow. My son of seven years could select the bulbs when out of flower from mixed cernuus simply by the foliage." It was shown again at the Congress this spring, and elicited much admiration.

Rhododendron Mrs. Isaac Davies.—This is one of the fine hardy varieties raised by Mr. Isaac Davies, Brook Lane Nursery, Ormskirk The flowers are white, or delicate blush; the upper segment has a heavy blotch of maroon with side-spots of claret, and the segments on either side are also much spotted with claret, the lower ones only faintly spotted with pale rose. The variety emits a singularly powerful perfume, and the flowers are produced in bold and striking trusses.

New or Noteworthy Plants.

Cœlogyne hookeriana (*Lindl.*) — brachyglossa, *n. var.*

Sir Joseph D. Hooker has stated, in the *Botanical Magazine* for 1878, that he has seen two varieties of this delicate lovely plant. The representation of it given at t. 6380, from a specimen coming from Mr. Elwes. The one variety has the lip much convolute, and only open at its apicilar part. It is the one illustrated, and grows lower, at 7000—8000 feet. The other one grows at higher elevations, 9000—10,000 feet, has a less convolute, more open lip; "there is no further distinction between the lobes, and there are no spots."

I believe all my herbarium specimens (J. D. Hooker! T. Thompson! T. Anderson! B. Clarke!) belong to the first variety, which ought to be regarded as the type, since it formed the subject of a good description of Dr. Lindley. I have the strong impression that Mr. B. Clarke's 27,843 (May 10, 1876) had white flowers, viz., sepals and petals white, in lieu of fine rose-purple.

Now I have a lovely thing at hand that might perhaps better answer to Sir Joseph D. Hooker's variety from the higher altitudes. It has a far more open lip, not at all abruptly convolute (comparable to a coal-scuttle or scoop, as Sir Joseph said), yet the upright sides of the lip show lobes. It is distinct in its very short anterior lacinia, and in its most pallid rose sepals and petals. The lip is white, with light sulphur on the disc with several reddish-brown spots. I would not regard it a distinct species, as it answers too well to the type, especially in the characteristic rows of filiform processes.

It appears to propagate very easily. There are stolons with bulbs, and on a very small old leafless bulb there are between the remaining shortest part of the fallen leaf two young plants. Notwithstanding this I do not indicate some unpublished localities at my command. How many thousands of this lovely gem may have died in the Red Sea? How very few living individuals are there in Europe?

I have to thank for a liberal supply of this novelty Sir Trevor Lawrence, Bart., M.P., P.R.H.S. Mr. Bickerstaffe would appear to manage the plant with great ability. *H. G. Rchb. f.*

Crinum longifolium var. Farinianum, *Baker.**

When M. Farini, whose name is well know to the public in connection with the Westminster Aquarium, went a few years ago to explore the Kalahari desert, he brought back with him a quantity of bulbs, which he presented to the Botanic Gardens of Kew and Berlin. The most curious of these has now flowered, and proves to be a marked variety of the Cape longifolium, Thunb. (*Bot. Mag.*, t. 661), best known in English gardens under Herbert's name of Crinum capense. The new species is remarkable for its narrow long-necked bulb, very long, tapering, glaucous leaves, and pink (much deeper in one of the two specimens now lying before me than in the other), narrowly funnel-shaped flowers. M. Farini tells us the plant grew in thousands in a stream mixed with Rushes, and that the whole of the long neck was buried.

Bulb ampullæform, 2½—3 inches in diameter, narrowed gradually into a neck ½ foot long; outer tunics brown. Leaves ten to twelve to a bulb, ensiform, the outer 2 inches broad low down, narrowed gradually to the acuminate apex, reaching a length of 3—4 feet, moderately firm in texture, rather glaucous, neither ciliated nor denticulate on the edge. Peduncle lateral as regards the rosette of leaves, stout, stiffly erect, compressed, 2 feet long.

* *Crinum longifolium var. Farinianum*, Baker.—Bulbo ampullæformi callo elongato, foliis ensiformibus 3—4 pedalibus acuminatis glaucescentibus margine integro; scapo valido erecto-compresso bipedali, umbellis 5—6 floris; spathæ valvis lanceolatis acuminatis; pedicellis elongatis; ovario globoso ovulis multis superpositis; perianthio, tubo curvato viridulo 3½—4 pollicari, limbi segmentis oblanceolatis rubellis diu conniventibus; genitalibus limbo brevioribus.

*

Flowers five to six in an umbel; spathe-valves lanceolate acuminate, 3 inches long; pedicels 1—2 inches. Ovary green, globose, ¼—⅓ inch long and broad; ovules several, superposed. Perianth-tube arcuate, cylindrical, green, 3½—4 inches long; segments permanently connivent in a narrow funnel, oblanceolate, 3 inches long, ⅝—¾ inch broad above the middle, pale or decided pink. Stamens contiguous, declinate, a little shorter than the limb. style just overtopping the stamens; stigma capitate. *J. G. Baker.*

Aërides mitratum, *Rchb. f.*

This exceedingly curious and lovely Aërides appeared as long ago as 1864 in the collection of Mr. J. Day. That was a single, not very strong plant. It was described by me in O. Mohl and O. Schlechtendal *Botanische Zeitung*, 1864, p. 415, and was afterwards described and figured in Hooker's *Botanical Magazine*, 5128. It is also well described in B. S. Williams' *Orchid Growers' Manual*, p. 106. That plant, the only one that had ever been seen in Europe, died, and for a long time the single evidence of its existence was in my herbarium.

Last year Mr. Foerstermann made a fine collection of Orchids in the far East, travelling for his patron, Mr. F. Sander. Excellent dried materials enabled me to name this species at once. A short time afterwards I saw a few of those plants at St. Albans, at Sir Trevor Lawrence's, Bart., M.P., P.R.H.S.; and at Mr. W. Lee's.

You might be reminded of Scuticaria Steeli when you see the short-stemmed distichum, with its long, terete, subulate, canaliculate leaves. The stiff, closely racemose peduncle gets the rhachis of the inflorescence swollen after having flowered, when the very small triangular bracts are lost. The numerous dried wild inflorescences at hand show over thirty scars of flowers.

Lately, a fresh peduncle has come to hand, a pleasure I have not experienced for twenty-three years. It is a present from Sir Trevor Lawrence, Bart., M.P., P.R.H.S. The peduncle looks brownish, and is proportionately thick. If you look very closely, it will be seen that you are deceived by a collective colour. It is of olive-green, with numerous dark reddish-brown spots. The stalked ovaries are strong, markedly ribbed, white, with a rosy hue, chiefly at the base. Sepals and petals cuneate-oblong, blunt, with purple edges, Lip nearly square, retuse at the top, generally with three teeth, the central one smaller and more acute. There is an inflexed angular tooth at each side of the base of the lips. The colour of the lip is a fine amethyst-purple of great elegance, with six darker purple stripes, and a white central line. Spur compressed, comparable to a hatchet, or, if you prefer, triangular, blunt-angled, the odd angle running into the blade of the lip. Column recurved, androclinium without any border (!), two lobes nearly covering the fovea. Anther mitrate, covering the top of the column. It is quite a peculiar beauty, most probably a very shy traveller. *H. G. Rchb. f.*

Orchid Notes and Gleanings.

Phalænopsis Mariæ.

A fine plant of this rare and beautiful species is now in flower at Kew. It was discovered by Mr. F. W. Burbidge when collecting for the Messrs. Veitch, in the principal island of the Sulu Archipelago, as may be seen by reference to that gentleman's interesting work, *The Gardens of the Sun*. The Kew plant has six pendulous leaves, measuring about 7 to 9½ inches long, and from 2 to 2½ inches broad at the widest part, very much attenuate at the base. The pendulous raceme is about a foot long, and has two side branches. The flowers are singularly handsome; the sepals and petals white, with several large blotches of warm chestnut-brown, the base of each segment shading into pale violet. The lip is three-lobed; the front lobe violet, with a broad white margin, strongly keeled, and bearing numerous white hairs; the side lobes much like those of P. violacea in shape, the colour violet, with a deep yellow blotch near base. A figure of this handsome plant has been prepared for the *Botanical Magazine*. A figure may be seen at t. 80 of the *Orchid Album*, the plant, however, from which that was prepared not having a branched raceme. *R. A. R.*

Stanhopea platyceras.

A flower of this fine Stanhopea has been received from Messrs. Shuttleworth, Carder & Co., of Clapham. At present it appears to be rare in cultivation, though on account of its large size and beauty it will probably become more common. The sepals measure 3 inches long, and the column is of the same length, which shows it to be amongst the finest of the genus. The sepals and petals are honey-coloured, with numerous blotches, dots, and splashes of purple-brown. The hypochile is very broad, the sides being suffused with purplish, and with numerous very dark blotches, especially towards its apex; the front portion of the lip is honey-coloured, with but few spots. The species is a native of New Grenada, and was originally introduced by Messrs. Hugh Low & Co. A figure of the plant is given in the *Refugium Botanicum*, t. 108. *R. A. R.*

Habenaria militaris.

A terrestrial Orchid, discoved in Cochin China by M. Godefroy, and described in these columns by Professor Reichenbach, vol. xxvi., 1886, p. 518. The most remarkable feature about it is the deeply lobed scarlet lip. The plant flowered at the Paradise Nursery last autumn and is figured in the *Orchid Album*, t. 281.

FORDELL,

The park of the Hon. Mrs. Mercer Henderson, is situated in the county of Fife, about four miles north of Queensferry, on the high road to Perth, is entered from the west by a very handsome iron gate, with a pretty lodge of modern erection. The approach runs on in a straight line for a good distance, and passes across a finely wooded glen with many handsome specimens of Conifers on either side, then, turning gently to the right, the mansion is reached, which is a fine large building most elaborately furnished. A few hundred yards to the west stands the old Castle of Fordell (fig. 161), a picturesque ruin, but in a good state of preservation, and here relics may be seen of the strange doings of the feudal times.

About three miles to the west stands the ancient town of Dunfermline, the environs of which abound in great diversity of surface. In the days long gone by it was a noted place in many ways, and it may not be out of place to mention here a few of the most interesting places in and about the neighbourhood.

On the banks of a small rivulet stands Malcolm Canmore's Tower, believed to have been built about 1070, the ruins of the south walls of the palace remaining to this day, and tradition points out the room where Charles I. was born, while the bed is in the possession of the Earl of Elgin.

A large slab of blue marble marks the spot where Malcolm and his queen are buried, and large flat stones are placed over the graves of Malcolm III., David I., Malcolm IV., and Alexander III. The last sovereign interred here was Robert the Bruce, a king whose name is dear to Scotland.

To the west and south of Dunfermline there are many fine residences, among which is the beautiful seat of Thomas Spowart, Esq., of Broomhead; two miles further west there is Luscar, the residence of Mrs. Hastie, a place long noted for its well kept gardens and beautiful surroundings. Nearly due south is Broomhall, the seat of the Earl of Elgin; and on the opposite side of the Forth is Hopetoun House, the residence of the Earl of Hopetoun, with its grand policies; while about three miles east is Dalmeny Park, the seat of the Earl of Rosebery. Here, also, is Queensferry, where there is in course of erection the Forth Bridge, one of the most stupendous undertakings of modern times; the bridge rises to a height of 150 feet above high-water; one of the spans is 1600, and another 2000 feet long, the entire length of the bridge being two miles. To the north of this is the ancient town of Inverkeithing, and looking south-east from Fordell there are the southern banks and screens of the Forth, beautifully undulated and luxuriantly fertile, the many wooded hills of the Lothians and the heights of Edinburgh, with its Castle and spires, are plainly seen. South-east of Fordell, on the north shore of the Forth, is Donibristle, the seat of the Earl of Moray, with its grand wooded park and extensive drives: and to the east lies the pretty village of Aberdour, one of the most famed watering-places in Scotland; and on again is Burntisland and Kinghorn. With one great historic event the latter place will ever be associated; on March 12, 1286, Alexander III. was riding in the dusk, when his horse stumbled, and he was thrown over a precipice and killed.

Returning to Fordell from the east the policies are entered by a nicely curved broad drive, nearly a mile long, and through a finely wooded park. To the south of the old Castle is a very handsome flower garden, of beautiful design (fig. 160). From the Castle a broad walk runs due east, and passes through a remarkably handsome gateway, and to the north and south of this garden there are a number of fine spiral shrubs, with old trees as a backing, principally of Plane and Beech. I may mention that round the edge of every bed in this garden three rows of Box have been laid, so as it were to form a broad band; these are clipped down to within 3 inches of the ground, and when viewed from the top of the Castle have a very fine effect, as the figure of each bed is distinctly seen. A good walk of grass surrounds each bed, and in the southern division there is a splendid specimen of the Cedar of Lebanon, with numerous large limbs, over 60 feet in height; the spread of branches, 60 feet; girth of trunk, 14 feet. The bedding-out is extensive, and everything does remarkably well, being well sheltered. From the west end of this garden there is a fine winding walk leading down to a lower level; along this is a very steep bank, which is thickly covered with Fern, Heath, and here and there some fine old trees. In this neighbourhood there is what is called the "wishing well."

Returning to the bottom of the road, along the bank, a small river is reached which is crossed by a handsome bridge, and turning to the left there is a broad walk, 12 feet wide, with grass on either hand, which runs in a straight line to the south side of the kitchen garden. About half-way up to this walk to the right are five large specimens of Wellingtonia gigantea, each about 50 feet high, in the best of health, which were grown from cuttings struck on the place; and nearly opposite these trees, on the left of the walk, is a fernery of large extent filled with a grand collection of hardy Ferns, which seem to do remarkably well.

South of the kitchen garden is the pinetum, between 30 and 40 acres in extent, with some very handsome specimens, and in large groups. The following examples are some of the finest:—Abies Douglasii, in large groups, and many single specimens, some attaining the height of 50 feet; Abies Menziesii, single specimens, from 8 to 30 feet; Abies Albertiana, in groups and single specimens, over 50 feet in height—magnificent; Araucaria imbricata, in groups of four to eight, very handsome, many upwards of 30 feet; Cedrus Deodara, some fine specimens, 20 to 30 feet, also in groups; Picea cephalonica, 30 feet; P. grandis, 25 feet; P. nobilis, some very handsome young trees, from 20 to 40 feet; P. Nordmanniana, very handsome specimens, 20 to 35 feet; Pinus muricata, 25 feet; P. Jeffreyi, 35 feet; P. ponderosa, 35 to 40 feet; Sequoia sempervivens, two handsome specimens, about 50 feet high; Thuia gigantea, very fine, about 30 feet; T. Lobbii, very handsome specimens, about 40 feet; Thuiopsis borealis, about 30 feet.

The kitchen garden, 4 acres in extent, is surrounded by substantial walls, which are covered with

well-trained fruit trees. The glass erections are very extensive, and consist of two Peach and Nectarine-houses, four vineries, a span-roofed stove, in which were plants in fine health, the hanging baskets with Pitcher plants being very fine. A span-roofed Orange and Camellia-house, in which the plants, of good size, were in fine condition. There are a Fern-house, Pine stoves, a span-roofed zonal Pelargonium-house, and another house, span-roofed, for rowing soft-wooded plants. Pits for forcing and other

Fig. 160.—Fordell Castle: flower garden. (see p. 834.)

purposes abound. The gardener's house, a good specimen of its kind, stands on an eminence on the north side of the kitchen garden, and the young gardeners are well housed. Mr. Ramsay, the head gardener, keeps everything in high order in this beautiful place. *John Downie.*

"Familiar Wild Flowers," "Familiar Garden Flowers," and "Familiar Trees,"—We learn that the coloured plates issued in these series are about to be deposited at the Museum at Kew Gardens.

POTATO CULTURE.

(*Continued from p. 775.*)

Now while the physicist is able by his specially devised apparatus to trace the molecular* changes, and guess at the atomic changes, which "light" and "heat" bring about in a "substance," he is watching: while the physiologist may be able to follow in an organism the transference of molecules from one part to another; and between them they may be able to state what are the probable conditions that must be secured to obtain a desired result commercially of getting molecules to form or get fixed in one part of the organism or another (a point a cattle fattener has to try to understand): the Potato cultivator is in a very different position. He cannot, by adjusting screws in his electric lamp, regulate the light; he cannot, by shifting his hot-water vessel, regulate his temperature; he cannot turn his leaf about into the position he wants, to determine with accuracy what is taking place, or get what he wants. His Potato field has to receive just that amount of light and heat which the sun sends, which the clouds and mists and moving air regulate. Is he then utterly helpless, utterly dependent on Nature? In one sense he is; but in another, if there be anything in foliage area affecting the amount of starch in tubers, he is not; and for this reason—he may cultivate in relation to foliage. Now, how is scientific theory to be checked by or made available for practice?

The writer has, after extended inquiry, found no specialist chemist, or physicist, or physiologist, who knows much about Potato growing from a practical point of view. It does not follow that they do not exist because he has not been able to hear of them. Nor among Potato growers has he found any who at all know what scientific work recently has led to. How to link "theory" and practice together may take some years. But it would seem that to foliage should a cultivator's attention be directed. How? If only those leaves that first receive the light from above, whether direct on a clear day from the sun, or on another day from diffused light, can form starch, may he not cultivate that form of foliage which gives the best quantity and position of leaf?

But then in which direction should he work? For much foliage, for much total leaf-area, or for that total area above which it can receive light from above? Is light reflected from soil to be left out of the question, and does it make any difference on which side of a leaf, upper or under, the light first impinges? The position of stomata may have something to do with the question, but who has devised experiments to answer it? *W. S. M.*

[We are happy to be able to state, that in consequence of the questions raised in the earlier portions of these articles, experiments have been arranged to watch the development of starch in tubers up to the time of the Conference of the Potato Tercentenary Exhibition at South Kensington. Ed.]

(*To be continued.*)

* As there has been so much, and perhaps still is some, confusion in the use of the terms "molecule" and "atom," it is desirable to explain that here "molecule" is used to express a temporary union of "atoms." For example, a "molecule" of carbonic anhydride (or dioxide or acid or whichever term is preferred) is a combination of an "atom" of carbon with two "atoms" of oxygen, whatever "atom" may mean. The terms suffice in our present state of ignorance.

Plants and Their Culture.

Soft-wooded Plants.—Fuchsias for late use should be shifted on into their flowering pots before they become pot-bound, otherwise a check will be received that will cause their shoots to harden, when they will refuse afterwards to grow freely. The soil used should be turfy loam and sand, enriched with leaf-soil and rotten manure. Syringe the plants thoroughly every evening, stop the growths of those that do not break sufficiently to form well furnished specimens, and feed liberally with liquid manure during the flowering season. Lantanas should likewise be shifted as soon as they require increased root-space; the compost advised for Fuchsias less the manure will suit these also. They are fast growers, and their shoots should be frequently stopped and staked out if the plants are needed for late summer and autumn use. These free blossoming plants need slight shade and an abundant supply of water at their roots with the assistance of liquid manure to carry them in perfection through their period of flowering. Salvias form another useful class of easily grown decorative plants, but which quickly suffer if potting be neglected; when once established in their flowering pots they may be plunged to half the depth of the pots in beds of coal ashes. Marguerites likewise, which afford a show of blossom in a greenhouse temperature in winter, need a similar situation and corresponding treatment. They do well if planted out during the summer months, and lifted early in the autumn with good balls of soil, and potted, but are not, when thus treated, so free in flowering as when kept in pots. Plants of Impatiens Sultani may be finally potted, using 7 or 8 inch pots. The grow best in an intermediate temperature, where they can be sufficiently ventilated and be kept near the glass in order to keep them sturdy, for if they become drawn and weak they are practically useless. If not already done, Solanums may now be planted out in prepared borders; they do equally well, however, when kept in pots in cool frames, where they should be lightly shaded from scorching sunshine, and freely ventilated; and under either mode of treatment they should be well syringed every evening in fine weather to keep them free from red-spider. *Thomas Coomber, Hendre Gardens.*

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APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

TUESDAY,	June 28	Royal Horticultural Society: Council, Scicentific, and Fruit and Floral Committees meet; also Special General Meeting of Fellows. Nursery and Seed Trade Association: Public Meeting to Consider the Rating of Nurseries, at the Horticultural Club, Henrietta Street, Covent Garden, W.C., at 6 P.M.
WEDNESDAY,	June 29	Gardeners' Royal Benevolent Institution; Anniversary Dinner at the "Albion," Aldersgate Street, City, E.C.

SHOWS.

TUESDAY,	June 28	Bagshot Horticultural Society.
WEDNESDAY,	June 29	Richmond (Surrey), Croydon and Boston Horticultural Societies' Shows.
THURSDAY,	June 30	Norwich, Canterbury, and Shepperton and Thames Valley Horticultural Shows. East Gloucestershire Rose Show.
FRIDAY,	July 1	Reigate Rose Show announced for this date is postponed to July 7.
SATURDAY,	July 2	Crystal Palace Rose Show announced for this date is postponed to July 9.

SALES.

TUESDAY,	June 28	Sale of Orchids in Flower and Bud, at Protheroe & Morris' Rooms.
WEDNESDAY,	June 29	Sale of Established Orchids, and Importations of Cattleya Mendelii, at Stevens' Rooms.
THURSDAY,	June 30	Sale of Importations of Orchids, from Mr. Sander, at Stevens' Rooms.
FRIDAY,	July 1	Sale of Imported Orchids, at Protheroe & Morris' Rooms.

A Sensitive Masdevallia.

The genus Masdevallia is exceptionally well represented among cultivated Orchids, the size and beautiful colours in the flowers of some, the odd shapes of others, and the microscopic beauty of a third group, no doubt accounting for the popularity of these plants. To these attractions we have now to add that of sensitiveness of a most remarkable kind. Darwin, in his *Fertilisation of Orchids*, refers to the irritability of the labellum in several species, which is described as moving quickly when touched. He never saw this himself, for he says, "I could not detect any irritability in the species I examined, nor have I, much to my regret, seen any Orchid with an irritable labellum." He also mentions an Australian Orchid, Calæna, as affording a remarkable instance of this sensitiveness. In this flower, according to Sir Joseph Hooker, "when an insect alights on the labellum it suddenly shuts up against the column, and encloses its prey, as it were, in a box." This is precisely what happens in Masdevallia muscosa, of which a plant is now flowering at Kew, probably for the first time in cultivation.

It was described in the *Gardeners' Chronicle*, 1875, vol. iii., p. 460, by Professor Reichenbach, from dried flowers sent home from New Grenada by Shuttleworth when collecting for Mr. Bull. The Kew specimen was presented by Messrs. Hugh Low & Co. early last year. M. muscosa has leaves 2 inches long, the blade being over an inch, ovate, very thick and stiff, bright green above, tinged with purple beneath. The Kew plant has a good tuft of these leaves. Apart from their sensitiveness the flowers of M. muscosa are not very attractive, though they at least equal such kinds as M. xanthina, M. porciliceps, and M. Wagneriana. The hairiness of the scapes, too, is exceptional among cultivated Masdevallias. The flowers in question are borne singly on erect scapes, 6 inches long, and densely clothed with soft pale green hairs, $\frac{1}{8}$ inch long. To understand the irritability of the labellum and its movements a description of the flower is necessary. The perianth is about the same size as that of M. xanthina; the ovary, which also is clothed with hairs, springs at right angles from the scape, and is $\frac{1}{4}$ inch long; sepals triangular, with tails an inch or more in length, the tails thickening slightly towards the apex; the bases of the sepals unite to form a shallow cup, and then turn right back; they are pale yellow inside, the outside also being yellow, the nerves tinged with red on the lower portion; petals narrow, $\frac{1}{4}$ inch long, projecting forward over the column, where their curiously thickened apices meet, forming an arch in a line with the column; lip in two parts, the basal narrow, and curving forwards; the blade, which hangs loosely, is triangular, $\frac{1}{4}$ inch long, slightly concave, with a raised yellow ridge or crest running halfway down, the lower edges turned up, slightly fringed and coloured maroon.

When a flower first opens the tails of the sepals curve back, and the labellum is seen with its bearded tip folded just beneath the arch of the petals, as if held there. Presently, however, the triangular blade falls down and hangs like the lip of an Oncidium. Mr. Bean, the foreman in the Orchid department at Kew, was the first to notice something remarkable in the flowers, and suggested that the lip was sensitive, as he found it up sometimes and down at others. On testing it this surmise was found to be correct. The seat of irritability is only in the yellow ridge on the lip, and on touching this gently with a hair the lip is at once raised, at first slowly, and then closed suddenly as it were with a click. In about twenty minutes it descends again, and on being again touched it closes just as quickly as before. A winged aphis placed on the labellum was carried up and held firmly, and the same happened when a house-fly was tried. Attempts to force the lip down again after it closed showed that the sensitiveness was of precisely the same nature as that in Dionæa Muscipula, and it could not be made to remain down unless held. An insect alighting on the labellum would certainly touch the ridge and would probably be lifted up and enclosed in the "box" formed when the lip is closed. The excessive hairiness of the scapes and ovaries is no doubt intended to prevent crawling insects from gaining access to the flowers. One may easily imagine how delighted Darwin would have been had he seen this plant, and we may expect that physiologists will be specially interested in it. For our own parts we are under great obligations to Mr. Watson for calling our attention to the matter, and supplying us with information here recorded. A figure of the plant has been made for publication in the *Botanical Magazine*.

The Jubilee Bouquet.—We are in duty bound to render all honour and credit to Mr. Sanderr, Mr. Godseff, Mr. Buck, and their zealous assistants, professional and lay, for the accumulation and arrangement of specimens for the monster bouquet commanded expressly by the Queen, and forwarded to Buckingham Palace on Tuesday last. As the occasion was exceptional, so was the bouquet. The flowers employed were entirely those of Orchids, The core or cushion of wire, moss, and dwarf hardy Ferns, was about 5 feet in height, and between 6 or 7 in width; into this the flowers, attached by the stem to slender sticks, were inserted in circles and groups, the dark forms of Cattleya Mossiæ and C. Mendelii composing the lower or supporting tiers, the colours ascending the gamut in increasing lightness to the apex. The finest varieties of Odontoglossum crispum, O. Ruckerianum, O. Pescatorei, Cœlogyne pandurata, Brassavola Digbyana, Vandas, Miltonia vexillaria, Oncidiums, Aërides odoratum, A. Ballantineanum, Epidendrum arachnoglossum, and other Orchids procurable, were used in its construction. The crown, which surmounted the whole, and which was composed mainly of Oncidium Marshallianum and Dendrobium suavissimum, stood on a cushion of flowers of Cattleya Warneri and C. gigas. On one side of the bouquet the letters "V. R. I." were displayed in flowers of the orange-scarlet Epidendrum vitellinum majus, and a cross of the same brilliant species surmounted the crown. We learn that the bouquet was placed near the entrance to the Queen's boudoir, where it was seen by all Her Majesty's guests; and we further hear that Mr. Sander has received an expression of Her Majetsy's thanks and congratulations on the success of his efforts. And now, having given our readers some idea of this extraordinary feat, we are inclined to think we shall neither misinterpret their feelings, nor detract from the praise justly due to the zeal and energy of Mr. Sander, when we say we hope we may never look on the like again. Unfortunately, however, an affair of this kind is likely to set a precedent, and we may expect to see in the future a succession of mounds of flowers, composed, it may be, of the choicest, richest, and most interesting material, but having as little beauty as the nugget trophies at some of our recent exhibitions. We had hoped that we had outgrown the age of such monstrosities, but we have seen several of late in Paris, and the American journals teem with descriptions of similar devices, alike for festive and mournful occasions, so that there is only too much reason to fear that the fashion will spread. The Royal bouquet above mentioned was similar to that made by Mr. Sander, exhibited at Dresden, and presented to the Queen of Saxony. The vase offered by the Empress of Germany and awarded to Mr. Sander, at the Dresden Exhibition, for the finest exhibit, was employed on this occasion to support the Jubilee bouquet. The vase is very elegant, and we hope shortly to give an illustration of both, as the Queen's bouquet was photographed by the peculiarly skilful hand of Mr. H. Stevens.

The Phylloxera Laws in Germany.—Some of our German and Dutch correspondents have written to us to point out an error of translation in the official document forwarded to us for publication (see p. 774). Instead of "bulbous plants," as printed, the expression should have been "rooted plants." Bulbs and plants without roots were allowed to pass before. As the law stands now rooted plants, provided they do not belong to the Vine, may be admitted without hindrance.

Dr. Asa Gray.—*Floræ sacerdos venerabilis.* Such was the epithet bestowed by the Public Orator at Cambridge on the occasion of the honorary degree of Doctor of Science being conferred upon one as deeply venerated here as at that other Cambridge of which he has been for so many years a chief ornament. Among English speaking scientists none is more venerated among those who know than he who is familiarly known as Asa Gray. Professor Gray said Dr. Sandys, has devoted more than fifty years of literary labour to elucidating one of the fairest of sciences in a series of works which, we learn, are at once learned in substance and luminous in style. He has repeatedly crossed the Atlantic to examine the herbaria of Europe and to deepen his intimacy with her foremost botanists. For the last half-century his reviews of the labours of his fellow-workers in the field of botany have been models of acute and candid criticism, combined with perfect courtesy. When the *Origin of Species* appeared in 1859 he was the first among the leading men of science in America to recognise its importance, and in good part at least, though with serious reservation, to accept its teaching. The orator concluded

by expressing a hope that Professor Gray might be permitted to see the completion of that great work on the flora of North America on which he had been so long engaged. Meanwhile the University was glad to crown with its garland of honour one who by his scientific labours had for half a century been adorning the fair science of flowers, the *floræ sacerdos venerabilis* who had reached the seventy-sixth year of his age—

"Through all this tract of years
Wearing the white flower of a blameless life."

At Oxford the venerable Professor was constituted a D.C.L., and his personal characteristics were thus summed up:—"Moribus suavissimis veritatisque semper quam famæ propriæ studiosior."

The National Colours in Flowers.—The Jubilee celebrations have naturally given rise to an immense demand for flowers representing the national colours—red, white, and blue. When patriotism or loyalty rages rampant, colours have much to do with the enthusiasm evoked, and as poets have verses on the red, white, and blue, whilst "the flag which has braved a thousand years the battle and the breeze" is of those colours, either separate or in combination, no wonder that flowers of those hues should be in exceeding demand. Illimitable, however, as our resources seem to be in house-raised flowers there is a limit when the demand is a universal one, and only garden flowers can satisfy the public requirements. Now the Jubilee fell at a moment when white Pinks were plentiful. Probably of all garden flowers none are more easily produced in greater abundance than are white Pinks, and in spite of the fact that the large double flowered Mrs. Sinkins is now cheap and common, yet preference seems still to be shown for the old double white, not only because it is so sweet and so wondrously free, but also because the flowers are of a more highly appreciated size, than are those of Mrs. Sinkins. Without doubt millions certainly of flowers, and almost of bunches, are cut annually within twenty miles of Covent Garden Market; but when we turn to blue or red hues we find the supply is not so readily furnished as is the case with white flowers. Certainly as a companion flower to that of the white Pink we cannot hope in blue to excel the blue Centaurea Cyanus, or Cornbottle. It is true that this hardy flower is ordinarily but an annual, but treated as a biennial by sowing seed in August, strong plants are obtained which stand through hard winters well, and flower profusely during the months of May and June. If we could obtain a blue Pink so much the better, but that is wildly improbable; therefore we must, for the present at least, depend for the white Pink's blue companion on the hardy Cornbottle. But red hues present even more difficulty than the blues do, for whilst there may be red flowers in abundance in their seasons, and of certain kinds, we cannot find just the fit companion flower so readily as we could wish, and in due abundance at this season. It is true we have a pink or flesh-hued form of Dianthus plumarius, though not quite so early as is its white compeer, but the hue is too pale Better in colour is the rosy-hued mule Pink which is very hardy, and blooms most profusely when well grown. If some of our Pink raisers could engraft the colour of Lord Lyon or Derby Day upon a form so hardy and so free as the old double white, they would render cut-flower growers great service.

Fig. 161.—Fordell Castle. (see p. 834.)

The Gardeners' Orphan Fund.—We understand that Sir Julian Goldsmid, Bart., M.P., has accepted the office of President to this Fund.

Royal Horticultural Society's Gardens, Chiswick.—A Strawberry Fête, with band and promenade, will be held early in July, the date of which will be duly announced. Admission will be as on ordinary days to Fellows and their orders, season ticket holders, and subscribers to the Chiswick Horticultural Society, or bearers of their tickets.

Royal Oxfordshire Horticultural Society.—The show of the above Society, which always forms part of the programme of the Commemoration week, was held on June 21, in the grounds of St. John's College, Oxford. It was of fairly large dimensions, filling three large tents.

Masdevallias at Kew.—The Kew collection of these curious plants numbers now a large proportion of the cultivated species, of which about twenty-five are in flower at the present time.

Tring Park.—We hear that the Cattleyas and Odontoglossums here are in splendid flower at the present time.

Royal Horticultural Society.—A special general meeting of the Fellows of the Royal Horticultural Society will be held at 3 p.m. on Tuesday,

June 28, in the Conservatory, to consider the results of the negotiations and inquiries which have been made by the Council as to the future maintenance and housing of the Society.

Gardeners' Royal Benevolent Institution.—The Secretary of the above institution informs us that the committee of the Institution, at their meeting last Thursday, although they have not yet received the amount they consider necessary, have resolved to carry out the Jubilee scheme in its entirety, and that on July 2 a cheque for £5 will be sent to each of the pensioners, and to each of the unsuccessful candidates at the last election, and they trust to the good feeling of the gardening fraternity, and to the *esprit de corps* generally of the horticultural profession for the balance, so that the reserve fund may not be trenched upon. The following letter will be read with special interest as the annual festival of the Society is to take place on Wednesday next:—

"E. R. Cutler, Esq., Secretary of Gardeners' Royal Benevolent Society, London, May 12, 1887.

"Dear Sir,—We have the pleasure to enclose you sight draft for the sum of seventeen guineas, being a small donation from some of the seed and nursery trade here to the Society of which you are Secretary. The subscriptions making the amount were received in response to a circular sent out by us at the request of our Mr. Anderson, who had the pleasure of being present at your last annual dinner, and who noted the good work being done by your Society. If we are anything in Australia we are attached to the 'Old Country.' We are so as a people, and we are so in trade connections and individually. We as seedsmen, therefore, are glad to note the prosperity of the trade at home with which we are connected, and are naturally much interested in same, and in all its institutions and charities. Your committee will not judge of the extent of our sincerity in this by the amount of the donation sent, but it will in some degree, at least, be the practical expression of the sense of sympathy we feel with your Society in the endeavour to help those who, by sickness and other causes, have been prevented from making provision for themselves, and who in their active life were so closely connected (as gardeners are) with the seed and nursery trade.—With every good wish for your Society, we are, faithfully yours,

"Pitt Street, Sydney." "Anderson & Co."

Rose Earl Dufferin.—We have received further communications relating to this Rose, impugning the competence of the judges, on a particular occasion, and asserting the identity of the Rose in question with Prosper Langier. It is much too late, even if desirable, to raise a question as to the competence of the judges; but as to the question of identity, or too close similarity, the forthcoming season will probably afford opportunity for further comparison. It is suggested by one correspondent that Messrs. Dickson should send over some specimens in pots, if they are able to do so, in order that the plants may be the better inspected. Glasgow correspondents are warm in their praise of Messrs. Dickson for the admirable show they make year after year in the City Hall.

Orchids at Freeland, Perth.—The fine collection of Orchids at this, the property of C. L. Wood, Esq., contains a number of beautiful species now in flower. It is one that is famous in the county of Perthshire, and about which we shall have more to say on a future occasion.

Iris barbata.—At the Horticultural Society's Gardens, Chiswick, there is at the present time in flower an interesting collection of this Iris, of which we shall have more to tell in our next issue.

Exhibition of Siberian Products.—An exhibition is to be opened at Ekatherinburg (Oural) on June 26. It is to be devoted expressly to the productions, natural and manufactured, of Siberia and the Oural. Section VII. is to be devoted to Agriculture, Forestry, Horticulture, Hunting, and Fishing. The exhibition comprises eleven sections, and there are more than 3000 exhibitors. Railway and steamboat facilities will be given. The best time to visit the exhibition will be the months of July and August, and, judging from the programme, the display will be of an extremely varied and interesting character. The strolling naturalist, horticulturist, or botanist will find numerous objects of special interest. Extended travel will in great measure be rendered unnecessary for them, because the plants and other objects will be well represented at Ekatherinburg. Special gardens are organised for the display of Siberian plants only. Should some wandering correspondent of this journal find himself on the Siberian frontier, he would be doing a service by contributing a note on this unique exhibition. Communications should be addressed to M. G. O. Clerc, the Secretary of the "Société Ouralienne d'Amateurs des Sciences Naturelles," at Ekatherinburg, Russia.

Troyes Show.—We are informed by M. C. Baltet, Président de la Société Horticole, Vigneronne et Forestière de l'Aube, that an exhibition of Roses, Carnations, Pinks, &c., will be held at Troyes, on July 2 and 3, at which the horticulturists of England are invited to compete.

Hoya imperialis.—The curious Bornean Hoya imperialis is now in flower at Gunnersbury House, Acton, in one of the stoves. Mr. Hudson states he has not seen it in bloom for twenty-eight years past. The plant has borne two large clusters of its curious blossoms. The plant is growing in a pot, and trained up the roof. Mr. Hudson, who must be complimented on his success, states that it is a plant requiring skilful management, and it must not be overwatered.

Ghent "Chambre Syndicale."—At a meeting held on the 15th inst. the following awards were made:—

First-class Certificates.—To Mr. James Bray, for Cypripedium Schroderæ; to Messrs. Fr. Desbois & Co., for Begonia Mr. Hardy; to Mr. Jules Hye, for Cypripedium Sedeni candidulum and C. Schroderæ; to Messrs. F. Desbois & Co., for Coleus Monsieur Lemoinier and Spiræa astilboides; to Mr. L. De Smet-Duvivier, for Odontoglossum vexillarium album; to Messrs. Vervaet & Co., for Odontoglossum (Miltonia) vexillarium var. extra; to Messrs. Vervaet & Co., for Odontoglossum crispum (var. tâchetée), Cypripedium selligerum majus, and Oncidium macranthum hastiferum.

Cultural Commendations.—To Mr. Aug. Van Geert, for Adiantum dolabriforme. Several "honourable mentions" were also awarded.

Exhibition of Roses at Manchester.—Mr. B. Findlay has just issued a very comprehensive and attractive schedule of prizes for the great Rose show in the Royal Jubilee Exhibition buildings, Old Trafford, on July 22. There are classes for Roses grown within 20 miles of the Town Hall, Manchester, and there is also a class for the best collection of other than the usual exhibition Roses, such as the Mosses, Provence, &c., as well as one for bouquets of Roses.

Matlock Bath Horticultural Society.—The annual exhibition of this Society is announced for August 13, and will take place as usual in the Pavilion, Matlock Bath.

The Post Office.—The *Times* of June 18, reports the evidence of Mr. Martin J. Sutton, one of the partners of the firm of Sutton & Sons, Reading, before the select committee of the House of Commons on Sunday postal labour. He stated that for four months of the year they received from 1200 to 1500, and despatched about 2000 letters a day, and during the rest of the year from 500 to 800 a day. They sent out 150,000 catalogues every year, and often as many as 200,000 circulars besides, and their arrangements were made for the despatch of a ton weight of parcels by parcel-post every day. Their expenditure during the last six months in stamps was £3411, and during the same time they had used and posted in letters as remittances £1948 worth of small postal orders and £520 worth of stamps, without a single order or stamp having been lost in the post. They had never received or despatched letters on Sundays, and they considered that to this entire restriction of the work to six days of the week was largely due the success of their business, although the delay thus caused had occasionally lost them a customer. His firm had posted as little as possible on Saturdays, with the object of avoiding labour in the Post Office on Sundays. That was a serious inconvenience to them in this respect—that it restricted them to about four days a week for posting their catalogues, because the Post Office required notice, for as they were posted in batches of 20 to 30 tons at a time they could not be accepted by the Post Office without previous arrangement. If there were no Sunday delivery they could post on Friday and Saturday, as on other days without fear of throwing additional Sunday work on country postmen. But the varying value of seed often made this premature posting of catalogues a great inconvenience, and sometimes a serious loss. Notwithstanding such disadvantages, however, he was glad to have the opportunity of giving evidence to prove that the Sunday delivery of letters was quite unnecessary for the management of a large business.

CARNATION PINK MALMAISON.

In the gardens of the Right Hon. Lord Rothschild, at Tring Park, a large span-roofed house full of a very beautiful Carnation, differing only from the original C. Souvenir de la Malmaison in having flowers of a clear soft pink instead of cream colour, now presents a fine sight. The plants are all stout and bushy, their extraordinarily large flowers being borne on stout stalks well above them, literally filling the house with their grand blooms, which are all the more serviceable for cutting that with each a foot or so of stem may be cut. Mr. Hill, who carries the culture of Carnations to the highest point of excellence, has tried several forms of rose-coloured Malmaison, but never before found one worthy to associate with the old cream-coloured kind; but in this case there is no objection as it is simply the old Malmaison in every other respect excepting the colour, which is pink. Adjoining the house of "Pink Malmaisons" is another filled with the old kind equally well bloomed; and beyond that are still other divisions full of perpetual blooming Carnations (winter flowering), which, when well done, as here, are invaluable at all seasons. The relays outdoors are in beds, ready against the time when the pot plants are finished.

HOME CORRESPONDENCE.

The Manchester Botanical and Horticultural Society's Gardens.—The transformation noticed in these gardens since they were appropriated for the purpose of the Manchester Exhibition is somewhat astonishing, and any one who has been accustomed to visit the Whitsun exhibition might well wonder what enchanter's wand had done all this, and in a comparatively short space changed the quiet and repose of the gardens into bustle and excitement, and peopled it with thousands who look on with wondering eyes. On the Trafford Road side, where the exhibits of garden appliances have hitherto been held, stands Old Salford and Manchester, with many associations of great historical interest. The large exhibition house is now a luxurious dining saloon. The annexe, which at the Whitsun show contained the Rhododendrons and other features, is now covered with a spacious glass roof: it extends back to the entrance gates for plants, &c., this being now one of the main entrances to the Exhibition building, and it is carried through right to the central hall of the building. The grass plot has in many cases given place to broad terrace walks, and a splendid fountain is enclosed within a huge basin between the band stand and the exhibition house. If the glass-covered annexe can be retained

permanently, and the fountain also, together with Old Manchester, they will be valuable and attractive permanent features, and give an additional zest to the *éclat* which characterises the Whitsun show. A finer exhibition house than the glass-covered annexe can scarcely be imagined, and if permanently retained it will make the addition of a supplementary tent at the Whitsun show altogether unnecessary. Raised walks have been made here and there, the slopes of the sides planted with Rhododendrons and other shrubs. Broad gravelled promenades have been cut across the broad stretch of turf, and a second band-stand erected. At the end of the gardens near to the Trafford Road a most commodious refreshment room has been erected, but could be transformed into a valuable winter garden if allowed to remain. Mr. Findlay's excellent judgment is seen in many details, and if some of the structures can be permanently retained the utility of the gardens will be greatly enhanced, and their attractiveness increased. *R. D.*

CHISWICK GARDENS.—In the *résumé* of the admirable and varied work done at Chiswick by the Royal Horticultural Society (see p. 108), mention is made of the fact that much of the work there done is left publicly unrecorded. That seems to be the great cause of the comparative indifference in which Chiswick is now held in the horticultural world. Your report of the present year's work, though somewhat prospective, yet shows of what interest and value it is, and how thoroughly practical also. What other garden in the kingdom can show such a record, and how thankful horticulturists should be that Chiswick is not only available for such work, but in relation to it is open not merely to Great Britain but also to the whole world. If the Council of the Royal Horticultural Society wishes to evoke general horticultural interest just now in its depressed fortunes, it certainly cannot do better than place Chiswick and its uses in the foreground. To that end I venture to suggest that Mr. Barron should be empowered to furnish weekly or monthly, as may be thought best, to the gardening Press reports of the proceedings of interest in the gardens, whether of trials or of committee meetings and awards, of subjects of interest in maturity, or in fruit, or in flower. With a little literary skill added I think these reports might be made very interesting and instructive, and would specially serve to show to the world at large how valuable an institution horticulturally is Chiswick Garden. *Middlesex.*

PINUS PARVIFLORA.—I fully endorse all your correspondent, A. D. Webster, says respecting the beauty of Pinus parviflora, but my experience is at variance with his as to its hardiness. In the spring of 1885 we procured from Messrs. Veitch & Sons, Combe Wood nursery, a nicely furnished plant of P. parviflora, which was duly planted in a sheltered situation, where it grew, and did well, making a nice little specimen of about 6 feet in height, and till April of this year formed one of the subjects of a very pretty group, the others being Abies Hookeriana, A. Webbiana, A. polita, and other choice Coniferæ. To my great regret it succumbed to the frost and searching winds just as it was showing signs of activity. *Jas. Hopkins.* [There are several plants at Kew which must have been out several years, but which are hardy and produce cones annually. Ed.]

SUPERPHOSPHATE OF LIME.—Mr. Samuel Barlow, Stakehill House, Castleton, Manchester, has contributed an interesting article to the *Agricultural Gazette.* He states that, having a field of Turnips badly infested with fly, he tried the experiment of dusting a few of the plants with superphosphate of lime, and found that it destroyed the fly entirely. He then had the whole field done with the superphosphate, and the result was the entire annihilation of the fly. He also had some large plants of Pansies that were badly infested with slugs—hundreds sheltered themselves under the tufts of foliage, and had to be picked off. A dressing of superphosphate was placed on the soil below the tufts, with the result that the slugs were quite destroyed; it also kills wood-lice. Mr. Barlow recommends a dressing of superphosphate of lime on all garden crops, and plants attacked by slugs, snails, &c. "This application is sure to be much more effective than dusting with powdered quicklime, which changes to carbonate of lime on exposure to the atmosphere for a few minutes, and is then harmless to slugs. I found by experiments that after superphosphate of lime had been rained upon for ten hours, it was still powerful to destroy slugs. The superphosphate employed is the ordinary 25 to 28 soluble." *R. D.*

HILDENBRANTIA RIVULARIS: A NEW BRITISH ALGA.—At one of the meetings of the Scientific Committee of the Royal Horticultural Society, held some two or three months ago, I gave Mr. George Murray, for the British Museum collection, a quartz pebble encrusted with blood-red stains caused by the growth of a fresh-water Alga. Ere this Mr. Murray has, no doubt, determined the plant to be Hildenbrantia rivularis, regarding which Alga there is an interesting note in the new number of *Grevillea*, No. 76, p. 121. The plant is not figured in Cooke's new *Fresh Water Algæ.* As it is a remarkable Alga, and hitherto unrecorded as British, the following note of my knowledge of it may be of interest. It was first pointed out to me by my father, more than thirty years ago, growing in great luxuriance in brooks, streams, and clear drains in the neighbourhood of Ollerton, in Nottinghamshire. It not only grew on the quartz pebbles in the water, but sometimes abundantly on the pebbly banks: the colour of the plant is dark red, like clotted blood. My father also pointed out to me that some cottagers preserved the red-stained quartz pebbles on their window-sills as ornamental stones, or "variegated quartz." The example I gave to Mr. Murray came from Nottinghamshire, and had been on a mantelpiece as an "ornament" for over thirty years, and still preserved its characters. *W. G. S.*

TULIPA CHRYSANTHA.—This dwarf bulb, which was named T, chrysantha by Boissier, and which is included only as a mere form of T. montana, by Mr. Baker in his monograph, is one of the most interesting little bulbs we have seen for a long time past. It seems to vary in height, in a wild state, from less than an inch to half a foot and over. It varies also in the size of the flowers, and the depth of tint on the three outer segments. The form referred to, and which is in flower at the present time at Kew, is the very dwarf one collected, and sent home by the explorers in the Gilzih expedition, and very similar to that collected, by Dr. Aitchison in Afghanistan. The apex of the flower is barely an inch above the surface of the soil, appearing almost or quite sessile on the dense brown pubesence that characterises the bulb covering of this group, the unopened flowers, are handsomely red tinted, and when full open display a soft yellow, rarely seen even in a Tulip. The leaves, of which there are two to a bulb, are prettily curved, the margins undulated and tinged purple, on a glaucous green ground, giving the whole plant an interesting and peculiar appearance. The commonest forms appear to be found at low elevations, and certainly run T. montana very close, the higher you ascend the hills the dwarfer the plant becomes until 9000 feet is reached, which we believe is the limit at present. Beloochistan to Bokhara, &c. (T. Lehmanniana, Mercklin, is a syn.) *D.*

NEW ROSES.—In your issue of the 4th June, at p. 475, there appears a communication from one who shelters himself under the *nom de plume* "Tame Rose." His statements, which are rather extreme, will no doubt be accepted by most of your readers *cum grano:* but having for six years acted as Secretary of the Glasgow Pansy and Rose Show, to which he refers, I would like to say a few words in reply. "Tame Rose," assuming the dignity of "the authority on Roses," virtually asserts that all the judges engaged at our local shows are incompetent; and the only proof he adduces for this sweeping charge is "I do not know one"—a proof the weight of which I will leave with your readers. For the information of "Tame Rose," let me say that the judges, at least so far as the Glasgow show is concerned, are nominated by a large committee, and are chosen from among those who, for many years, have been the most successful competitors; and I think it must be conceded that, to be a successful competitor, one must be at least fairly competent as a judge. Further, let me say that during the seven years the Glasgow show has been in existence no complaint has hitherto been made on the score of incompetence on the part of the judges. "Tame Rose" must be unaware of the existence of the Helensburgh Rose Show, otherwise I do not think he would write about incompetent judges. Why, some of the best-known authorities on the Rose have acted as judges there. Again, "Tame Rose" says, "I had the pleasure of seeing Messrs. Dickson's new Rose, Earl of Dufferin, at the Glasgow Show last July." He then proceeds to blame the judges for granting that Rose a certificate on the plea of violating the rules of the Society—(*a*), because of its seeming likeness to Prosper Langier; (*b*), because of only one bloom being shown. As regards his first objection let me inform "Tame Rose" that the six judges on Roses unanimously considered Earl of Dufferin not only the best Rose bloom in the hall, but a decided acquisition to the H.P. class; and further, that it differed from Prosper Langier in density of colour, in substance, and in perfume. If the judges at Glasgow erred so did the judges at Helensburgh, Dublin, Ramsay, and Bray. The fact, however, that at each of these places the Messrs. Dickson received a certificate for Earl Dufferin supplies a weight of evidence which must tell heavily against the opinion of an anonymous correspondent. As to the second objection I most emphatically state that "Tame Rose" is quite wrong, as instead of one bloom thirteen blooms of Earl of Dufferin were exhibited—one bloom in the Messrs. Dickson's 1st prize stand, and twelve blooms in a separate, staged for a certificate. *T. McCrorie, Kilbarchan, June* 17.

WATERING TREES AGAINST WALLS.—After the cold and dry spring came to an end, and in spite of the heavy snowfalls, which should have moistened the soil but did not, the latter was very dry about the roots of wall trees on south and east aspects at Longford. The borders therefore were thoroughly watered then, most of the trees being soon afterwards in flower. Since the formation of the fruits the borders have received several waterings, to preserve the borders in health and to prevent fruit dropping. There is at all times more absorption of moisture at the roots of wall trees than is the case with trees growing in the open, by reason of the closeness of both soil and roots to bricks and mortar, and the warmth imparted thereto by the sun, as well as the extra drainage afforded to the soil in which the trees are growing by the foundation of the wall. *H. W. Ward.*

SCOTLAND.

EDINBURGH BOTANICAL SOCIETY.

June 9.—The Society met on the evening of June 9, in the class-room, Royal Botanic Garden; Professor Dickson, President, in the chair

The evening was equally divided between the reading of papers and an inspection of the floral treasures of the garden and stove-houses.

Mr. Allan gave in the report of the Botanical Camp Committee of Applecross, Ross-shire, and Dr. T. G. A. Balfour communicated a paper "On the Cultivation and Manufacture of Tea at Darjeeling," by a grandson of the late Lord Provost Lawson, now residing there. Mr. Rathay, of the *Challenger* office, exhibited and described some microscopical preparations of rare and new Algæ, amongst other localities from Lord Howe's Island. Mr. Taylor read a note from Mr. John Buchanan, Shire Highlands, who is zealously planting Coffee in that district. The Stropanthus hispidus planted in the first of these localities, which is over 2000 feet from the habitat of this now important plant, discovered by Sir John Kirk on the banks of the Shire, is not flourishing; but this is of the less importance, as the markets of the world are now supplied for some years to come.

Mr. Lindsay, Curator of the Royal Botanic Garden, submitted his report for May:—

"During the month of May vegetation generally made good progress, although there was a considerable amount of frost during the first week, and cold east winds during the last week of the month. From the 7th till the 24th a spell of fine bright weather took place, during which time vegetation made rapid strides. Ordinary deciduous trees and shrubs developed fine luxuriant foliage, and by the end of the month many of them were in blossom. Amongst those which flowered best were the various species of Pyrus and Prunus, Horse Chestnut, Lilac, Hawthorn, Laburnum, and Magnolia purpurea. The quantity and condition of the flowers produced were rather above the average. Late flowering Rhododendrons and Azalea pontica are very well covered with flowers, while Ghent Azaleas are very sparse. Bushes

of Erica australis and Olearia Gunniana were unusually fine; both are handsome May-flowering hardy plants, not too well known throughout the country.

"The thermometer was at or below the freezing point on four nights, the total amount of frost being 12°, while for last May 4° only were recorded. The lowest readings were—on the 1st, 30°; 2nd, 25°; 4th, 32°; 5th, 29°; 21st, 33°. The highest morning readings were—on the 8th, 57°; 9th, 57°; 16th, 60°; 17th, 60°; 24th, 59°. The lowest day temperature was 52°, which occurred on the 20th; and the highest, 74°, on the 24th of the month.

"On the rock garden a large number of alpine and herbaceous plants were in flower, no less than 326 species and varieties came into flower during May, being seventy-three in excess of last May. Amongst the most interesting were:—

Andromeda fastigiata	Genista pilosa
Anemone alpina sulphurea	Gaultheria trichophylla
,, narcissiflora	Haberlea rhodopensis robusta
Anthyllis erinacea	Helicophyllum Albertii
Alyssum alpestre	Lamium Orvala
Androsace lanuginosa Leichtlinii	Linaria alpina
,, sarmentosa	Oxytropis uralensis
,, chamæjasme	Phlox nivalis
Aquilegia Stuartii	Primula pedamontana
Cytisus Ardoinii	,, geraniifolia
Cerinthe alpina	Pentstemon Menziesii
Chrysogonum virginianum	Polemonium humile
Cheiranthus Marshalli	Potentilla purpurea
Clintonia Andrewsii	Rhodora canadensis
Dianthus gelidus	Saponaria ocymoides splendens
Daphne collina	Silene acaulis
Enkianthus himalaicus	,, pusilla, &c."
Erica australis rosea	

The following is Mr. Bullen's record of temperature, vegetation, &c., in the Botanic Garden, Glasgow, May, 1887:—

"During the month, the thermometer has been at the freezing point once, and several times only a degree or two above it. With the exception of May, 1885, when 23° of frost was registered for the month, this is about the average minimum temperature recorded for several years. The day temperature has frequently been high in the sun, and occasionally the shaded thermometer has registered from 60° to 67°. Rainfall unusually light. The dry weather and cold east winds which have prevailed have continued to retard an otherwise backward season. All sorts of hardy trees and shrubs are blooming freely, and being somewhat late the prospects of an abundant fruit season are good. The foliage of early leafing deciduous trees of all kinds is very fine this season. Also all the very hardy kinds of herbaceous plants are both earlier in bloom and better developed than usual."

The following were the exhibits:—

W. Sanderson, Esq., Talbot House, Ferry Road, showed several rare cut Orchid blooms.

Mr. Lindsay exhibited several plants in flower, from cold frames in the garden, amongst which were Nardostachys Jatamansi (Spikeweed), Primula geraniifolia, Heuchera sanguinea, Polygonum sphærostachyum, Myosotis alpestris, Exharbena Lyalli, Fritillaria cerissa, Silene pusilla, Saxifraga seedlings, from S. McNabiana and others; Potentilla eriocarpa, &c.

Mr. Mackenzie, Warriston Nursery, sent a plant in flower of Pancratium zeylanicum.

SOCIETIES.

Scientific Committee.

June 14.—R. McLachlan, Esq., F.R.S., in the chair. Present: Messrs. J. O'Brien, W. G. Smith, A. H. Smee, A. N. Ridley, G. S. Boulger, Drs. Lowe and Masters.

Dendrobium polyphlebium.—To this plant, supposed to be a hybrid between D. Pierardi and D. Parishii, a Botanical Certificate was awarded on the proposal of Messrs. O'Brien and Smee. The plant was shown by Mr. R. B. White, of Arddaroch, and was described by Professor Reichenbach in the *Gardeners' Chronicle* for May 28 this year.

Diseased Narcissus Bulbs.—Mr. W. G. Smith showed bulbs from the Pyrenees thinly covered just beneath the outer skin with small hard black bodies like Lentil seeds, and which constitute the "sclerotia" or resting stage of some fungus, probably a Peziza. When first imported the bulbs appeared healthy. On the Continent this fungus is known as the Black Rot (see fig. 162).

Heterosporium ornithogali.—Mr. W. G. Smith exhibited foliage of a species of Ornithogalum mutans blackened and destroyed by this fungus, which spreads very rapidly (see fig. 163).

Outgrowths on Roots of Peas.—Mr. W. G. Smith brought before the committee specimens of the outgrowths so common on the roots of leguminous plants, and which he attributed in this instance to Nematoid worms. Dr. Masters alluded to other explanations that have been offered for these outgrowths,

FIG. 162.—BLACK CANKER OF BULBS.

FIG. 163.—LEAVES OF ORNITHOGALUM DESTROYED BY HETEROSPORIUM ORNITHOGALI.

such as the presence of Myxomycetous fungus, Bacteria, &c. Whatever be the cause, the plant does not seem in general to be much affected, as leguminous plants almost invariably have these swellings. In the instance in question the Peas were stated to be half destroyed.

Plants Exhibited.—Dr. Lowe exhibited on behalf of Mr. Loder a magnificent spike of a white flowered Eremurus, supposed to be a form of E. robustus. It is quite hardy, and when known will "make a sensation" in gardens. A Primrose was also shown under the name of P. verticillata, but it was destitute of meal. Dr. Lowe also drew attention to a Cattleya in which the sepals and petals were mottled, as in the variety known as Massangeana. A discussion took place on the subject, the general result being that the committee considered the appearances to be due to debility. Dr. Lowe also showed succulent roots on Scilla campanulata, similar to those now called "ephemeral" roots in Crocuses. The general impression is, that these roots are intended as reservoirs for storing up water.

Vines with Barren Flowers.—Mr. Barron forwarded examples of flowers, some having the stamens spreading, which set fruit, others with the stamens reflexed, and which were always barren. Mr. Henslow reported upon a microscopical examination of the two kinds, and found that the pollen was shrivelled and useless in the recurved stamens. Like those which remained erect after the corolla had fallen, they burst their anthers while in bud, but as soon as the flower has lost the corolla the filaments become reflexed. On examination of the stigmas, ovaries, and ovules, nothing abnormal was revealed, so that if these flowers be dusted with the pollen from a normal kind, a spray being gathered just as the corolla is falling, and shaken over the others, the probability is that they would set fruit. Such an experiment would soon show if the pistils were unaffected or not. It appears that these barren flowers occur on rods growing side by side with fertile ones, and may occur on any variety, so what is the inherent constitutional cause of the "contabescence" of the stamens would seem to be obscure. It is discussed by Darwin (*Animals and Plants under Domestication*, ii., p. 165), but he could not suggest a cause, though some plants (Dianthus and Verbascum) thus affected grew on a dry and sterile bank. Dr. Masters called attention to the researches of Engelmann and Planchon on this subject, as well as to his own observations on the setting of Grapes at Chiswick several years since. A tendency to assume a diœcious condition seems to be general in all Vines, and is completely attained in the American species. Allusion was also made by members of the committee to corresponding phenomena in Strawberries.

Calceolaria (Double).—Mr. Henslow reported upon the plant forwarded by Mr. Veitch to the last meeting. It proved to have "double flowers." The sepals varied from four to six, the ordinary corolla was present in the usual form, but within it, or protruding from it, was a mass of calceolate petals, sometimes about twelve in number, and of different sizes. There was no trace whatever of any stamens or of a pistil.

Photographs of Eucalypts, &c.—Dr. Masters showed, on behalf of M. Joly, of Paris, a series of photographs representing various species of Eucalyptus, Casuarina, &c., which were valuable as affording illustrations of the mode of growth of these trees.

Psilotum triquetrum, &c.—Dr. Masters showed, on behalf of Mr. Tokutoaro Ito, a series of Japanese representations of this curious Lycopod, revealing an amount of variation quite unknown to the botanists present. From the same source also came a sheet of coloured illustrations of varieties of Kaki or Persimmon (Diospyros) cultivated in Japan.

Osmanthus ilicifolius.—Dr. Masters called attention to a peculiarity in the mode of growth of this shrub, consisting principally in the uplifting of the innermost bud-scales, which in place of falling off at once, or remaining at the base of the shoot remain attached for a considerable period to the growing shoot, and contrast remarkably with the ordinary leaves. The superficial resemblance of this plant to a Holly was commented on, and attention called to its excellence as an evergreen for town gardens.

Dr. Masters also showed from Mr. A. Waterer's nurseries specimens of Acer Wallii (yellow), A. Weirii, a large leaved form of A. dasycarpum; Tilia euchlora, a very dark leaved Lime; Fagus antarctica, the evergreen Beech of Patagonia; and other plants.

THE ORCHID HOUSES.

SEASONABLE DIRECTIONS.—If the wants of Orchids are neglected for a few hours at this season of the year, more harm accrues than would be the case if neglected for a day or two in winter, providing the temperature is then kept up. The watering, shading, and damping of the floor and stages should be well attended to where any of the soft-foliage species are grown; otherwise, if the plants become dry at the roots, thrips and spider may increase rapidly. Plants that are not quite dry,

which in winter would be passed over, should in summer-time be watered. All small Orchids making growth ought to be placed in as good a position as the larger plants, although this will often interfere with the arrangement in the houses. The early potted deciduous Calanthes are now filling their pots with roots, and a little manure, in a liquid state, given once a week will help them. The plants do well suspended or raised on pots near the roof glass, and will bear the sun to shine on them for a considerable time in the morning, and in the afternoon the shading should be raised as soon as the plants can bear the sun, the atmosphere in the house being kept moist. Thunias that are growing in strong sunlight may be placed in a more shady part of the house just before the flowers open, and after these have faded the plants may be brought into the light again, to mature their growths; if the root-action is good they will take plenty of water, with sometimes a little manure added. Promenæas now flowering are very pretty; we find them grow best in a moist corner of the Cattleya-house, with extra shading. Vanda Batemanii has been much despised by some persons, but I think it a grand old Orchid, far superior to many forms of V. tricolor; the back of the flower is pretty and the labellum is narrow; but the same might be said of some Orchids that are rare; one thing in its favour is that it is not particular as to treatment. It has flowered in the Cattleya-house here, and plants of it are now flowering in the East Indian and Phalænopsis houses. I like to see Phalænopsis in active growth before disturbing those that require new baskets or cylinders; they start to grow more freely, and lose fewer leaves than is the case when this work is done too early in the spring. They are now growing fast, and any that require attention should be seen to. Keep the hygrometer as near saturation point as possible. See that this instrument acts properly, and should the moisture cease to ascend renew the material which should absorb it. Never give much ventilation, but always have a little on when the wind is not blowing strongly. The ventilators of cool-houses may be left open during the night. If the houses are much exposed to the sun, and the surroundings are very hot and dry, close the bottom ventilators in the morning before the sun-heat becomes powerful, and put on extra shading material. Unless the weather be damp and cool, very little fire-heat will be necessary to keep the East Indian-houses over 70° at night, and the Cattleya-house at about 65° with a little ventilation. *C. Woolford, Downside, Leatherhead.*

THE FLOWER GARDEN.

Pinks and Carnations.—Towards the end of the month these should be propagated, as it is of importance that strong plants be secured. Two methods are at the option of the cultivator. They may either be put in as cuttings, or they may be layered. The latter system secures the strongest plants, and the operation is very simple. Cuttings are best struck on a slight hotbed, having about 4 inches of sandy compost, the same as for layering on the top, after a frame has been placed on it. Take off the cuttings with only two joints, and prick them in about 2½ inches apart. Keep them neither wet nor dry, shade from the sun for a time until they begin to grow, when they may be inured to stand sun and air. When they are growing freely they may have the sash removed altogether: properly treated, 99 per cent. will strike. Where fine blooms are wanted, the buds should be reduced to two or three on each flower-stem; but where a floral display is the object sought, all the buds may be left on.

Pick off the seed-vessels from Rhododendrons, Azaleas, Kalmias, Lilacs, &c., as nothing exhausts plants so much as excessive seed-bearing, and, moreover, the brown seed-pods do not add to the appearance of the shrubs. All peat-loving plants are surface-rooters, and suffer greatly if the season be a dry one. They should receive due attention with water, and, if possible, a slight mulch with leaf-mould, which is generally plentiful where there are many deciduous trees.

In most cases bedding out will be completed; carpet-beds will require weekly attention to pinching and regulating to keep the lines well defined, and unless this is regularly attended to the effect will be marred. Sow seeds of perennials, and if not already done, no time should be lost in sowing biennials for flowering next spring. Alpine plants will derive great benefit from a slight dewing with the syringe every evening, when the day has been bright and warm. The surroundings of such should be kept moist as most of those subjects are natives of high latitudes. See that such of these which occupy shelves on rockwork do not have the soil washed from their roots, by heavy rains, and timely attention with water should be given them. Close attention must be given to the destruction of the Rose maggot. These are exceedingly numerous this season, and unless kept down they will destroy a great number of the buds, as well as weaken the plants by the destruction of the foliage. *W. M. Baillie, Luton Hoo Gardens.*

THE HARDY FRUIT GARDEN.

General Directions.—With the warm weather watering of all kinds of fruit trees will become a necessity, especially in the case of gravelly soils. Apples, pyramid Pears, and Plums that are showing heavy crops of fruit will need frequent attention in this direction. Apricots, Peaches, and Nectarines will also need frequent root-waterings, and the daily use of the garden-engine, to keep aphides and red-spider in check: also all newly-planted subjects will need attention in watering. Strawberries that are swelling heavy crops of fruit, and others that are carrying ripening crops will be greatly benefited by copious supplies of water, followed by an occasional dose of liquid manure. All work connected with watering &c., should be performed as late in the evening as possible, giving as much attention to these matters as time and labour permit. Autumn fruiting Raspberries that have had their growth thinned out as previously advised, will now be grown of sufficient length to be tied to the trellis or stakes. I find a permanent trellis of galvanised wire, and a few posts of hard durable wood through which to pass the wires, the most satisfactory way of securing the canes. Remove all suckers springing from the wilding stocks of fruit trees. Keep weeds cut off whilst in a small state by the constant use of the Dutch hoe, an operation which will also prevent the ground from cracking during hot, dry weather. Mulching of all kinds of fruit trees will be of the utmost importance should the present dry weather continue for any length of time. *E. Ward, Hewell, Bromsgrove.*

FRUITS UNDER GLASS.

Pines.—Strong healthy fruiting plants should be given liberal supplies of tepid weak manure and soot-water at the roots when necessary, which, during bright sunny weather will be about three times in the fortnight. Admit fresh air to the houses as soon as the thermometer indicates 80° in the morning, afterwards regulating the ventilators according to circumstances, giving abundance of air after the thermometer registers a temperature of 85° by sun-heat until closing time in the afternoon—about 4 o'clock—when it may be run up to 95°, with plenty of atmospheric moisture in the house or pit at the same time. But in damping the pathways, walls, plunging material, and the plants (slightly) overhead, morning and afternoon, care should be taken not to let the water get into the crowns, as that would cause them to make an unduly large growth—a circumstance which would consequently detract from the size and appearance of the fruit. In order to secure handsome as well as large fruits, two clean stout sticks should be put to each plant—one on either side the fruit—and the latter be secured thereto by means of four ties, two being fastened round the stem of the fruit and two round the base of the crown, and the latter ties slipped into a downward notch made in the off-side of the sticks—say on a level with the top of the crowns. These ties will maintain the fruits in an upright position.

Successional Plants may have air admitted a little earlier than the fruiting plants, and left on a little longer in the afternoon. When the fruits are in flower it will be necessary to maintain a drier and airier atmosphere in the house, so that every "pip" may set and swell, otherwise the fruits will be wanting in finish; but after the fruit is set, the treatment should be the same as that indicated above. Young plants should be subjected to a lower temperature than that recommended above, but in every other respect the treatment should be the same. In the presence of bright and powerful sunshine a light shading should be placed over plants in every stage of growth from half-past 10 in the morning till 3 o'clock in the afternoon during the next few months. *H. W. Ward, Longford Castle Gardens.*

THE WEATHER.

[Accumulated temperature indicates the combined amount and duration of the excess or defect of temperature above or below 32° F. for the period named, and is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature.				
		Accumulated.			
	Above or below the Mean for the week ending June 20.	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 4, 1887.	Below 42° difference from Mean since Jan. 4, 1887.
Principal Wheat-producing Districts.		Day-deg.	Day-deg.	Day-deg.	Day-deg.
0. Scotland, N. ...	2 above	97	0	+ 133	+ 37
1. Scotland, E. ...	4 above	120	0	+ 141	+ 41
2. England, N.E. ...	4 above	126	0	+ 26	+ 82
3. England, E. ...	2 above	131	0	— 67	+ 168
4. Midland Cos. ...	5 above	154	0	— 140	+ 166
5. England, S. ...	4 above	150	0	— 70	+ 151
Principal Grazing, &c., Districts.					
6. Scotland, W. ...	4 above	121	0	+ 58	+ 47
7. England, N.W. ...	7 above	141	0	— 18	+ 118
8. England, S.W. ...	6 above	160	0	— 19	+ 172
9. Ireland, N. ...	4 above	131	0	+ 113	+ 23
10. Ireland, S. ...	5 above	147	0	+ 78	+ 97
— Channel Islands	6 above	158	0	— 90	+ 77

Districts.	Rainfall.			Bright Sunshine.	
	More or less than the Mean for the Week.	No. of Rainy Days since Jan. 4, 1887.	Total Fall since Jan. 4, 1887.	Percentage of possible duration for the Week.	Percentage of possible Duration since Jan. 4, 1887.
Principal Wheat-producing Districts.	Tenths of Inch.		Ins.		
0. Scotland, N. ...	4 less	100	18.0	48	23
1. Scotland, E. ...	4 less	74	8.9	40	32
2. England, N.E. ...	5 less	70	6.5	50	31
3. England, E. ...	5 less	67	7.3	77	38
4. Midland Cos. ...	6 less	65	8.0	73	33
5. England, S. ...	5 less	64	8.1	81	37
Principal Grazing, &c., Districts.					
6. Scotland, W. ...	6 less	79	15.7	51	34
7. England, N.W. ...	6 less	64	9.9	60	35
8. England, S.W. ...	6 less	67	9.0	87	43
9. Ireland, N. ...	6 less	74	11.4	?	?
10. Ireland, S. ...	6 less	65	10.9	73	42
— Channel Islands	4 less	76	8.3	88	43

THE PAST WEEK.

The following summary record of the weather for the week ending June 20, is furnished from the Meteorological Office:—

"The *weather* has been very dry, fine, and bright, in nearly all parts of the kingdom. Rather more cloud has prevailed in Scotland than elsewhere, and on the 18th some slight rain, accompanied by thunder and lightning, was experienced at many of the Scotch stations. Thunder was also heard at some of the northern English stations.

"The *temperature* has again been above the mean, the excess ranging from 2° in 'England, E.,' and 'Scotland, N.,' to as much as 6° in 'England, S.W.,' and the 'Channel Islands,' and 7° in 'England, N.W.' The highest of the maxima, which were registered on rather irregular dates, varied from 80° in 'Scotland, W.,' and the 'Channel Islands,' to 86° in the 'Midland Counties,' and to 88° in 'Scotland, E.' The lowest of the minima, whice were generally recorded towards the end of the period, ranged from 38° in 'Scotland, N.,' and 39° in 'Scotland, E.,' and the 'Midland Counties,' to 52° in the 'Channel Islands.

"The *rainfall* has been entirely absent from England and Ireland, and very slight in Scotland.

"*Bright sunshine* shows a very general and decided increase, the percentage of the possible amount of duration ranging from 40 in 'Scotland, E.,' and 50 in 'England, N.E.,' to 81 in 'England, S.,' 87 in 'England, S.W.,' and 88 in the 'Channel Islands.' The percentage of the possible amount of duration recorded this week has been higher over the country generally than any recorded since the week ending May 22, 1882."

MEAN TEMPERATURE OBSERVED AT CHISWICK DURING THE WEEK ENDING JULY 2. (AVERAGE OF FORTY-THREE YEARS.)

June 26	62°.2	June 30	62°.6
„ 27	62°.3	July 1	62°.7
„ 28	62°.4	„ 2	62°.8
„ 29	62°.5	Mean for the week ...	62°.5

ENQUIRIES.

"He that questioneth much shall learn much."—Bacon.

Aralia Sieboldi variegata.—Will any of your correspondents describe the propagation and culture of the above, and whether the plants should be exposed to the sun or not when the wood is matured? I got a plant from a nursery a short time since, and immediately it began to shed its lower leaves; then all the branches commenced to bend over about an inch above the soil, forming a crease on the underside, as if forcibly bent at right angles. If any one could suggest the probable cause I would be much obliged. *Beta.* [See our columns for Sept. 27, 1884, p. 398. Ed.]

NOTICES TO CORRESPONDENTS.

*** Correspondents will greatly oblige by sending early intelligence of local events likely to be of interest to our readers, or which it is desirable to bring under the notice of horticulturists.

Intelligent Readers, do please Note *that letters relating to* Advertisements, *or to the supply of the Paper, should be addressed to the* Publisher, and that all communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor. Such communications should be *written on one side only of the paper*, and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Correction.—In our report of the Royal Botanic Society's show, p. 814, col. *b*, lines 10 and 11, it is stated that Messrs. Paul & Son were 1st, and Mr. T. S. Ware 2nd, for hardy herbaceous flowers. Mr. Ware points out to us that he received the premier award.

Dendrobium Freemanni: *E. S. B.* This has no botanical difference from the typical D. lituiflorum, neither has the variety you sent. Both are local forms of D. lituiflorum, and in the case of your plant, probably, as in the case of Freeman's variety, the slight difference in the growth is not constant enough to form a distinguishing feature. The variety Freemanni originally named was erect in growth, and the flowers were tinged with violet, the labellum having an orange blotch in the centre. These features, however, were not constant in the bulk of the plants. If the difference of the growth of yours is so great as to lead you to suppose it is not D. lituiflorum, please send an old and a leafy stem.

Mildew on Vines: *H. W.* Caused by insufficient ventilation, a damp, stagnant atmosphere, and unhealthy root-action, probably. Mix sulphur with a little milk, and further dilute with water. With this mixture thoroughly syringe the Vines and bunches two or three times. All affected berries must be cut off, as they are useless.

Names of Plants: *W. B. H.* Helichrysum rosmarinifolium, syn. Ozothamnus rosmarinifolius. — *C. M. O.* Salix pentandra.—*C. E. F.* Orchis mascula. — *W. Gilbert.* Cattleya lobata.—*F. B. S.* Syringa Josikea.—*J. W.* 1, Fabiana imbricata; 2, Aphodelus fistulosus; 3, Hyacinthus comosus; 4, Scilla peruviana.—*H. W.* 1, Juniperus virginiana; 2, Herniaria glabra; 3, Santolina chamæcyparissus; 4, Antennaria tomentosa; 5, Veronica incana.—*B. L.* 1, Pentstemon (flowers withered); 2, Campanula glomerata; 3, Lamium purpureum; 4, Scilla peruviana.—*Placidus.* 1, Double Banksian Rose; 2, Cotoneaster frigida; 3 and 4, varieties of Platanus orientalis. — *S. B.* 1, 2, 4, Orchis maculata; 3, Habenaria bifolia.—*F. B.* 1, Alopecurus pratensis; 2, Ranunculus acris; 3, Stachys vulgaris; 4, Æthusa Cynapium; 5, Ægopodium podagraria; 6, Sanicula europæa; 7, Chenopodium denudatum; 8, Heracleum sphondylium; 9, Leontodon autumnale; 10, Crepis biennis; 11, Orchis pyramidalis.—*J. G.* 1, Chenopodium maritimum; 2, Glaux maritima; 3, Salicornia herbacea. — *C. B. M.* Lælia purpurata alba.

Scolopendriums: *A. G.* Nothing new or distinct.

Seeds for Queensland: *J. Ross, Seedsman.* You do not specify what you want, so that you would do well to write to some export seed house for its list of seeds for tropical climates.

Sieve Measure: *H. Clacs.* A sieve contains 7 imperial gallons = 28 quarts. A sieve of Peas is equal to 1 bushel or 32 quarts: a sieve of Currants 20 quarts.

Tulips: *T. H.* We cannot undertake to name florists' varieties. An extensive grower of Tulips might afford you help.

Communications Received.—E. H.—C. W. D.—R. D.—J. B.—J. L.—C. T. D.—J. R. J.—J. D.—J. J. W.—W. B. H.—R. A. R.—W. L.—A. G.—J. Jones (next week).

MARKETS.

COVENT GARDEN, June 23.

[We cannot accept any editorial responsibility for the subjoined reports, which, however, are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations represent averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and they fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the particular prices at any particular date, and still less can they be taken as guides to the prices in the coming week. Ed.]

Outdoor Strawberries now to hand from the Southern Counties, and in a day or two they will be in full supply. A lively trade doing, with prices firm all round. Second-rate samples of Grapes lower. *James Webber, Wholesale Apple Market.*

Fruit.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
— Nova Scotia, brl.	8 0–12 0	Peaches, dozen ...	4 0–12 0
Grapes, per lb. ...	2 6– 5 0	Pine-apples, Eng., lb.	1 0– 1 6
— Channel Isl., lb.	1 6– 2 6	— St. Michael. each	3 0– 8 0
Lemons, per case ...	12 0–21 0	Strawberries, per lb.	1 6– 4 0
Melons, each ...	1 6– 3 0		

Vegetables—Average Retail Prices.

	s. d. s. d.		s. d. s. d.
Artichokes, per doz...	4 0– ...	Lettuce, Cos., each...	0 2– ...
Asparagus, English, per 100	5 0– ...	Mushrooms, punnet	1 6– 2 0
Beans, Kidney, lb. ...	1 6– ...	Mustard and Cress, punnet	0 4– ...
Beet, red, per dozen	1 0– 2 0	Onions, per bushel ...	4 0– ...
Carrots, per bunch...	1 0– ...	Parsley, per bunch...	0 6– ...
Cauliflowers, spring, each	0 9– ...	Peas, per quart ...	1 6– ...
Celery, per bundle ...	1 6– 2 0	Potatos, per cwt. ...	4 0– 5 0
Cucumbers, each ...	0 6– 1 0	„ kidney, per cwt.	4 0– 5 0
Endive, per dozen ...	3 0– ...	Rhubarb, per bundle	0 6– ...
Green Mint, bunch...	0 4– ...	Shallots, per lb. ...	0 3– ...
Herbs, per bunch ...	0 4– ...	Spinach, per bushel...	2 0– ...
Leeks, per bunch ...	0 3– ...	Sprue, bundle ...	1 0– ...
Lettuce, per dozen ...	1 6– 2 0	Tomatos, per lb. ...	1 6– ...
		Turnips, new, bunch	0 4– ...

Potatos.—Old samples much lower; new very plentiful from Jersey and Cherbourg, prices ranging from 8s. to 12s. per cwt.

Plants in Pots.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz.	6 0–18 0	Heliotrope, dozen ...	4 0– 0 8
Calceolaria, dozen ...	4 0– 9 0	Hydrangeas, doz. ...	9 0–12 0
Cinerarias, per doz...	6 0– 9 0	Lilium longiflorum, per dozen	24 0–36 0
Cyperus, per dozen .	4 0–12 0	Lobelias, dozen ...	4 0– 6 0
Dracæna terminalis, per dozen	30 0–60 0	Marguerite Daisy, per dozen	6 0–12 0
— viridis, per doz.	9 0–24 0	Mignonette, doz. ...	6 0– 9 0
Erica, various, per dozen	18 0–30 0	Musk, per dozen ...	3 0– 6 0
Euonymus, in var., per dozen	6 0–18 0	Myrtles, per dozen...	6 0–12 0
Evergreens, in var., per dozen	6 0–24 0	Palms, in var., each	2 6–21 0
Ferns, in variety, per dozen	4 0–18 0	Pelargoniums, dozen	6 0–15 0
Ficus elastica, each .	1 6– 7 0	— scarlet, per doz.	3 0– 6 0
Foliage plants, various, each	2 0–10 0	— Ivy-leaved, doz.	4 0– 6 0
Fuchsias, doz. ...	4 0–12 0	Rhodanthe, dozen ...	6 0– 9 0
		Roses, various, per dozen	18 0–30 0
		Scented Verbena, doz.	4 0– 6 0
		Spiræa, per dozen ...	9 0–12 0

Cut Flowers.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Abutilons, 12 bun ...	2 0– 4 0	Mignonette, 12 bun.	3 0– 6 0
Anemone, 12 bun. ...	2 0– 4 0	Myosotis, 12 bun. ...	2 0– 4 0
Arum Lilies, 12 blms.	3 0– 5 0	Pansies, 12 bunches	2 0– 3 0
Bouvardias, per bun.	0 6– 1 0	Pelargoniums, 12 spr.	0 6– 1 0
Carnations, 12 blms.	0 9– 2 0	Pinks, coloured and white, 12 bun. ...	2 0– 4 0
Cornflower, 12 bun.	2 0– 3 0	Primulas, double, 12 sprays	0 9– 1 0
Day Lily, 12 bun. ...	4 0– 6 0	Pyrethrum, 12 bun...	2 0– 6 0
Eucharis, per dozen	4 0– 6 0	Roses, Tea, per doz.	0 6– 1 6
Gardenias. 12 blooms	1 0– 3 0	— coloured, dozen.	2 0– 4 0
Heliotropes, 12 spr.	0 6– 1 0	— red, per dozen ...	0 6– 1 0
Iris, various, 12 bun,	6 0–12 0	— Saffrano, dozen...	1 0– 1 6
Jasmine, white, bun.	0 6– 0 9	Spiræa, 12 bunches..	6 0– 9 0
Lilac, 12 bunches ...	4 0– 8 0	Stephanotis, 12 spr.	2 0– 4 0
Lilium longiflorum, 12 blooms	3 0– 6 0	Tropæolums, 12 bun.	1 0– 2 0
Marguerites, per 12 bunches	3 0– 6 0	Tuberoses, 12 blms....	1 0– ...

SEEDS.

London: *June* 22.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., write that the seed market to-day was poorly attended, with scarcely any business doing. Just now the sowing requirements are almost *nil*, and no speculative inquiry has sprung up. A few transactions have taken place in new French Trifolium for future delivery. There is no change in bird seeds. Feeding Linseed remains steady. Blue Peas sell slowly on former terms. Other articles offer no subject for remark.

CORN.

Averages.—Official statement showing the average prices of British corn, imperial measure, in the week ended June 18:—Wheat, 35*s.* 1*d.*; Barley, 21*s.* 10*d.*; Oats, 17*s.* 4*d.* For the corresponding week in 1886:—Wheat, 31*s.* 4*d.*; Barley, 24*s.* 1*d.*; Oats, 21*s.* 2*d.*

FRUIT AND VEGETABLES.

Stratford: *June* 22.—There was a fair supply, and a fair trade at under-noted prices:—Greens, 1*s.* to 1*s.* 6*d.* per dozen bunches; Carrots, household, 45*s.* to 55*s.* per ton; Mangels, 11*s.* to 18*s.* do.; Watercress, 6*d.* per dozen; Radishes, 9*d.* do.; Lettuce, 1*s.* to 1*s.* 2*d.* per score; Berries, 3*s.* to 3*s.* 6*d.* per half-sieve; Cherries, 5*s.* 6*d.* per bushel; Onions, spring, 2*s.* 6*d.* to 3*s.* per dozen bundles.

POTATOS.

Stratford: *June* 22.—Kidneys, 11*s.* to 12*s.*; do. Lisbon, 8*s.* to 9*s.*; do. St. Malo, 8*s.* to 8*s.* 6*d.* Old: Scotch Magnums, 85*s.* to 100*s.*; English, 75*s.* to 85*s.* per ton.

Imports.—The imports into London last week consisted of 1541 bags from Hamburg, 1238 Ghent, 214 casks 53 bags 213 cases Malta, 80 half-boxes Lisbon.

HAY.

Averages.—The following are the averages of the prices obtained in London during the past week:—hay, 70*s.* to 95*s.*; Clover, 75*s.* to 95*s.*; and straw, 34*s.* to 42*s.* per load.

Syringa Josikea.—One of the handsomest trees now in bloom is Syringa Josikea, of which a correspondent sends us specimens. The bold habit, purple shoots, handsome foliage, covered with white down on the under surface, and massive panicles of white flowers, like those of a Privet enlarged, renders this one of the most striking of flowering shrubs. One drawback it has. Some folk say they consider the odour of the flowers atrocious; and we must own that a little goes a long way.

GARDEN REQUISITES.

TWO PRIZE MEDALS.

Quality, THE BEST in the Market. (All sacks included.)

PEAT, best brown fibrous ... 5s. per sack; 5 sacks for 22s. 6d.
PEAT, best black fibrous ... 4s. 6d. ,, 5 sacks for 20s.
PEAT, extra selected Orchid 5s. 6d. ,, 5 sacks for 25s.
LOAM, best yellow fibrous ... } 1s. per bush., 3s. per sack. (sacks included).
PREPARED COMPOST, best
LEAF MOULD, best only
PEAT MOULD, ,,
SILVER SAND, coarse, 1s. 6d. per bush., 14s. half ton, 24s. ton.
RAFFIA FIBRE, best only ... . 1s. per lb.
TOBACCO CLOTH, finest imported ... 8d. lb., 28 lb. 18s.
TOBACCO PAPER ,, (Spécialité) 8d. lb., 28 lb. 18s.
MUSHROOM SPAWN, finest Milltrack ... 5s. per bushel.

CHUBB'S "PERFECT" FERTILISER, the Best Food for all kinds of Plants, Flowers, Fruits, Vegetables, &c. ...	Tins.	7lb.	14lb.	28lb.	56lb.	1 cwt.
	1/6	3/-	5/-	8/-	14/-	22/-
CRUSHED BONES, best quality		1/2	2/-	3/6	6/-	12/-
VIRGIN CORK, best quality only		—	3/-	5/6	10/6	17/-

In bags.

HORTICULTURAL CHARCOAL, ditto, 2s. 6d. per bushel.

COCOA-NUT FIBRE REFUSE (by Chubb's special process), sacks, 1s. each; 10 sacks, 9s.; 15 sacks, 13s.; 20 sacks, 17s.; 30 sacks, 25s.; 40 sacks, 30s. Truck-load, loose, free on rail, 25s. Limited quantities of G., special quality, granulated, in sacks only, 2s. each. Terms, strictly Cash with order.

CHUBB, ROUND & CO.,
WEST FERRY ROAD, MILWALL, LONDON, E.

HORTICULTURAL SOILS, MANURES, SUNDRIES, and BERKSHIRE POTTERY. Catalogue free per post, of every Horticultural Requisite.

BENJAMIN FIELD, F.R.B.S. (Son-in-law and Successor to J. Kennard), Central Office and Sales Room, 75A, Queen Victoria Street, E.C., near Mansion House Station. Depôt: Swan Place, Old Kent Road, London, S.E.

TELEGRAMS—"FLORICULTURE, LONDON." Established 1854.

To Gardeners.

PROCTOR AND RYLAND'S
well-known
Special Garden Manures.
Pure Ground Bone for Vines, Potting, &c.
10s. per bag of 1 cwt. on receipt of Postal Order.
Birmingham and Chester.

GARDEN REQUISITES.

COCOA-NUT FIBRE REFUSE.

4d. per bushel; 100 for 25s.; truck (loose, about 2 tons), 40s.; 4-bushel bags, 4d. each.

LIGHT BROWN FIBROUS PEAT, 5s. 6d. per sack; 5 sacks, 25s.; sacks, 4d. each

BLACK FIBROUS PEAT, 5s. per sack, 5 sacks, 22s.; sacks, 4d. each.

COARSE SILVER SAND, 1s. 9d. per bushel; 15s. per half ton; 26s. per ton, in 2-bushel bags, 4d. each.

YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1s. per bushel

SPHAGNUM MOSS, 8s. 6d. per sack.

MANURES, GARDEN STICKS, VIRGIN CORK, TOBACCO CLOTH, RUSSIA MATS, &c. Write for Price LIST.—**H. G. SMYTH**, F.R.H.S., 21, Goldsmith's Street, Drury Lane (lately called 17A, Coal Yard), W.C.

THE ACME

Safe and Sure.

WEED-KILLER, for destroying Weeds on Carriage Drives, Garden Walks, Stable Yards, &c. Prices: Per gallon, 2s., tins included; 5 gallons, 1s. 6d. per gallon; 10 gallons, 1s 4d. per gallon. Special quotations for larger quantities. One gallon makes 26 gallons.

WORM-KILLER, for eradicating worms from Tennis Courts, Lawns, and Plants in Pots. Prices: In bottles, 1s. 3d. and 2s. 6d; per gallon, 6s.

KENTISH GARDEN MANURE.

FOR VINES, PLANTS IN POTS, VEGETABLES, &c.

Guaranteed to Analysis by Mr. Bernard Dyer, B.Sc., F.C.S., F.I.C. London, Official Analyst to the Essex, Devon, Notts, and other Agricultural Societies. Highly recommended. The best Horticultural Manure in the market.

Prices: In tins, 3d., 1s., and 2s. 6d.; in bags, containing 28 lb., 7s. 6d.; ditto, 1 cwt., 25s. Sample tin, 6d., post-free.

THE KENTISH SOLUBLE MANURE.

For use in Conservatories and on Plants in rooms. No disagreeable smell. A perfect plant food. In tins, 3d., 9d., and 2s.; in bags, containing 28 lb., 7s. Sample tin, post-free, 6d.

KENTISH LAWN FERTILISER.

Imparts permanent improvement to LAWNS, CRICKET GROUNDS, &c. 28 lb., 5s.; 56 lb., 8s. 6d.; 1 cwt,, 15s.

THE "INVICTA" INSECTICIDE.

For destroying insects and parasites on Plants and Trees, such as mealy-bug, scale, thrips, red spider, American blight, &c. In tins, 1s. 3d. and 2s. 6d; per gallon, 9s. Small tins make upwards of 14 gallons of wash.

THE "INVICTA" MILDEW DESTROYER.

An unfailing remedy for mould and mildew on Roses, Vines, &c. In tins, 1s. and 2s.

Particulars free from the Manufacturers,
THE AGRI-HORTICULTURAL CHEMICAL COMPANY,
TONBRIDGE, KENT.
Sold by Seedsmen and Florists.
Address, H. A. GRINDROD, Tonbridge.

PEAT, LOAM, SAND, &c.—Splendid Brown Fibrous PEAT (full of fibre), 9s. per yard; Yellow Fibrous LOAM (best in England), 10s. per ton; SILVER SAND (coarse and fine), 10s. per ton. Each in truckloads. COCOA-NUT FIBRE REFUSE, 20s. per large truckload. Send for List.
BRINKWORTH AND SONS, Reading.

CERTAIN SUDDEN DEATH

To all Grubs, Aphis, Lice, Red Spider, Thrip, Mealy Bug, Caterpillars, &c., &c.

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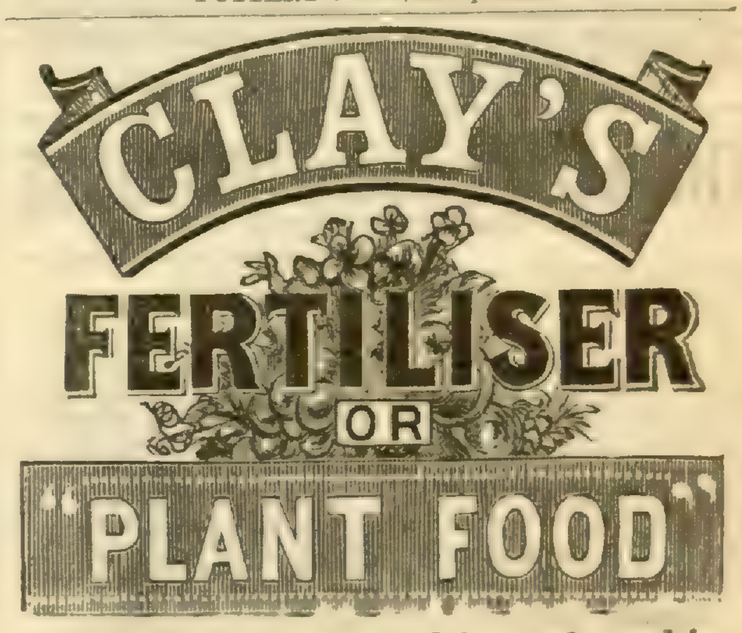

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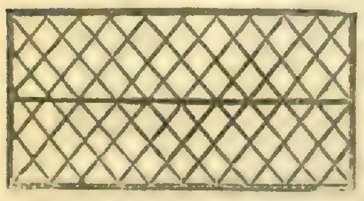

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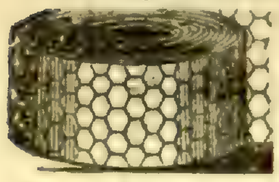

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3-in.	3	4	5	0	6	8	10	0
2-in.	4	6	6	9	9	0	13	6
1½-in.	6	6	9	9	13	0	19	6
1-in.	8	0	12	0	16	0	24	0

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100 yard Reels	... ...	6	0
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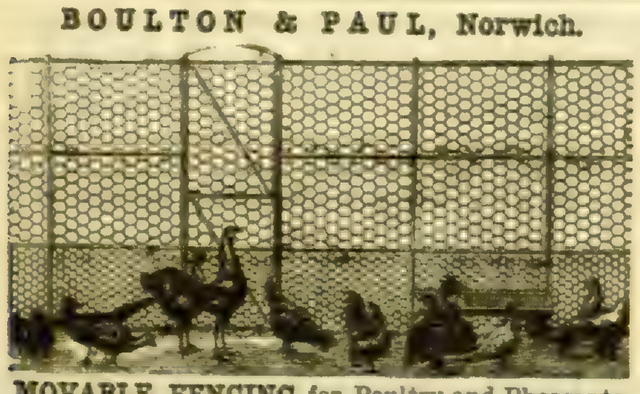

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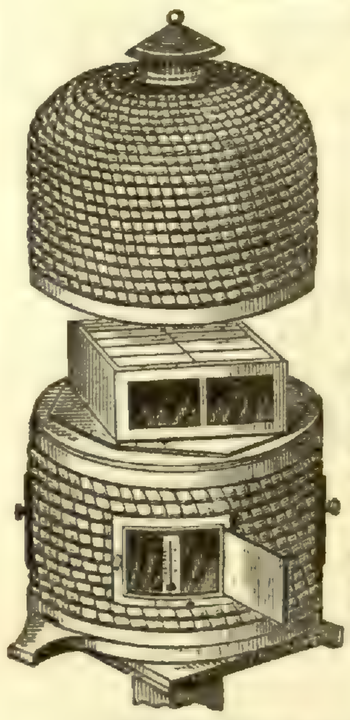

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COTTAGE BEEHIVE,

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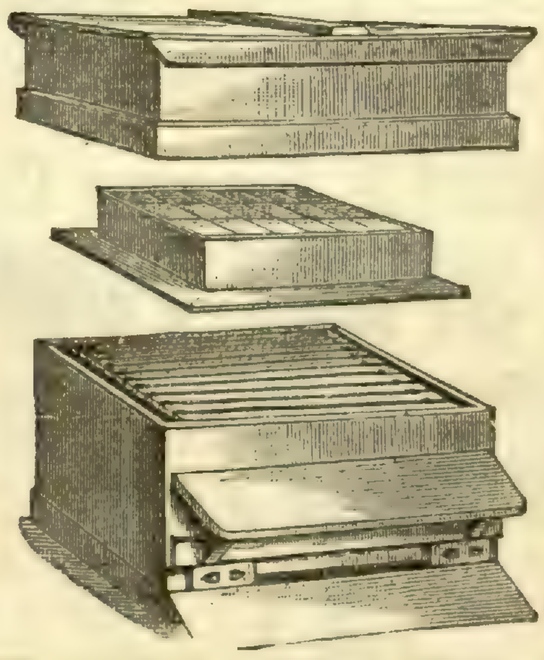
Stand for ditto 0 10 6



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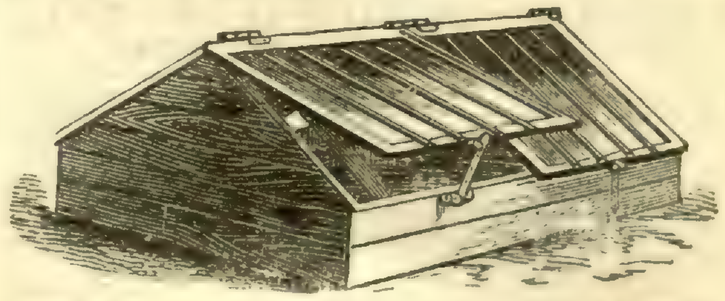

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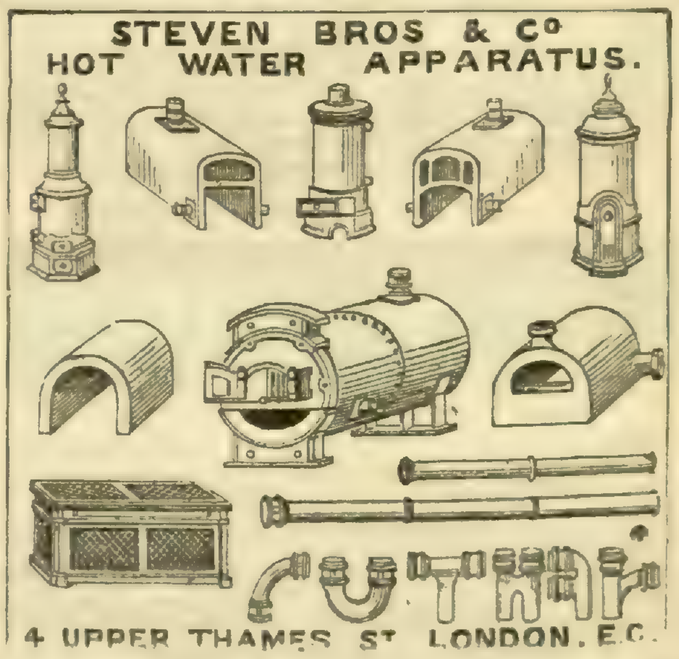

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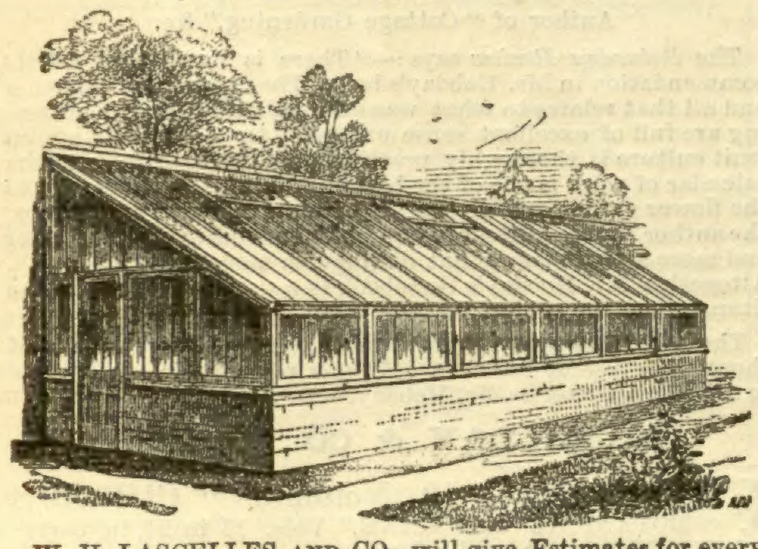

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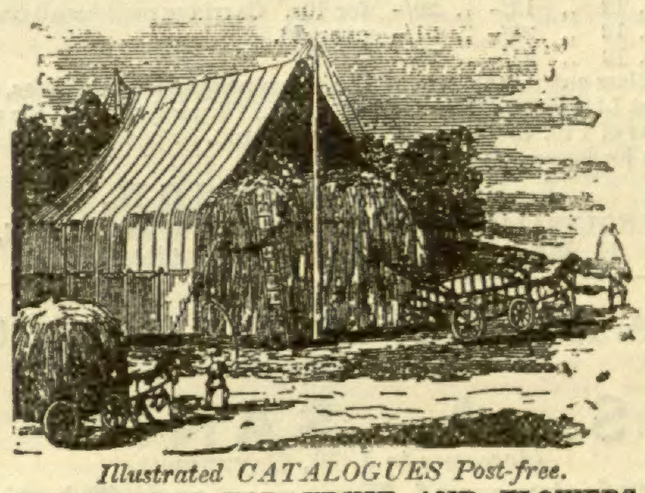

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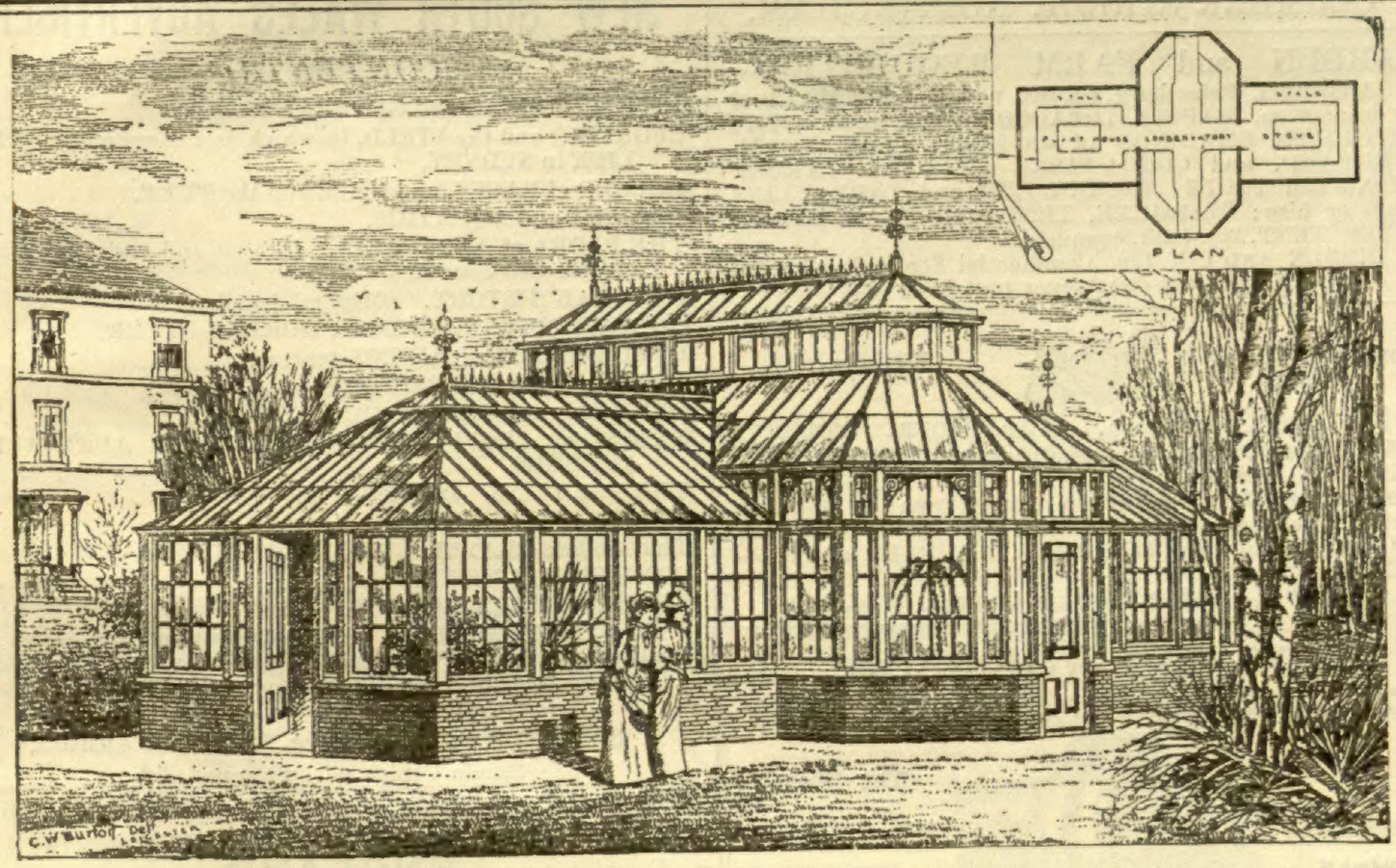

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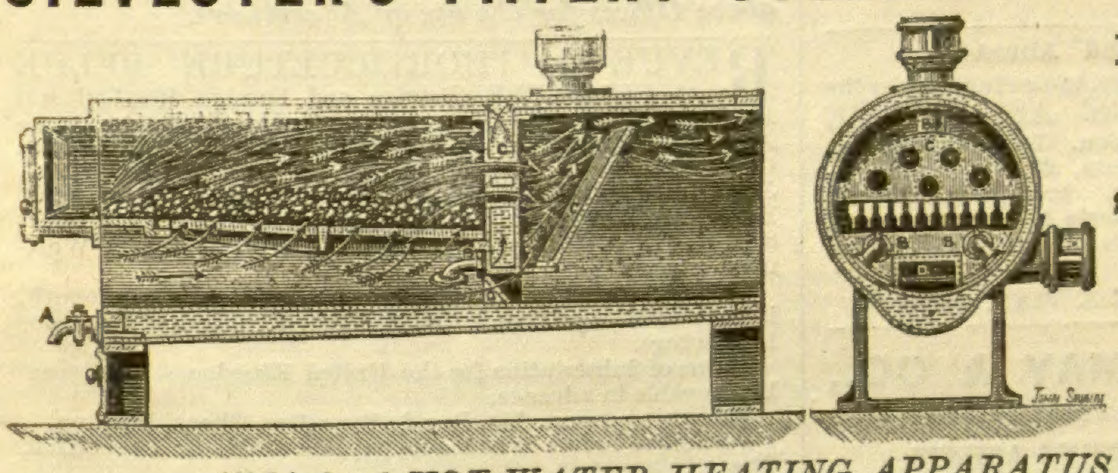

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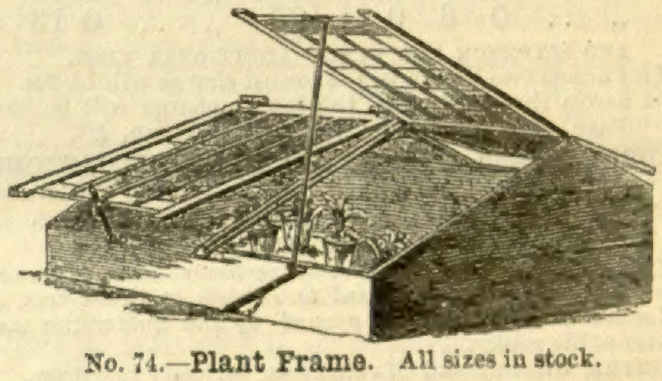

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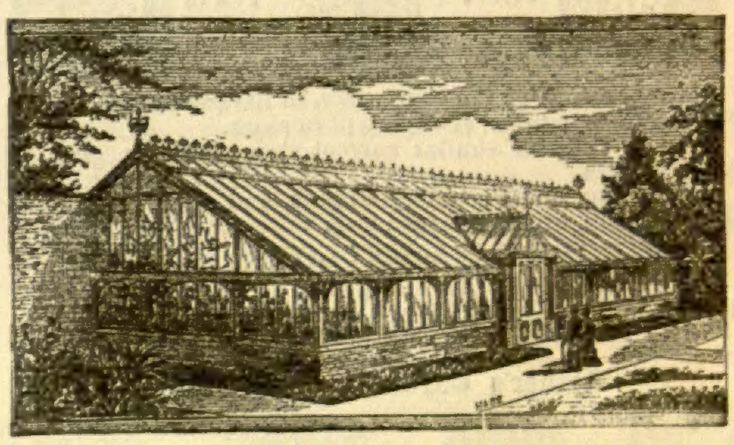

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9 „ ..	0	5	6	20 „ ..	0	11	0
10 „ ..	0	6	0	21 „ ..	0	11	6
11 „ ..	0	6	6	22 „ ..	0	12	0
12 „ ..	0	7	0	23 „ ..	0	12	6
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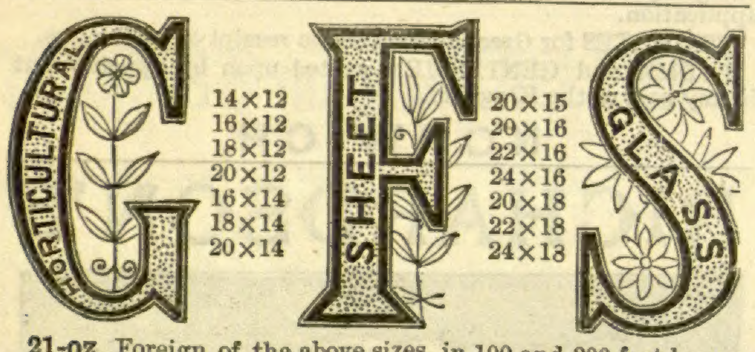

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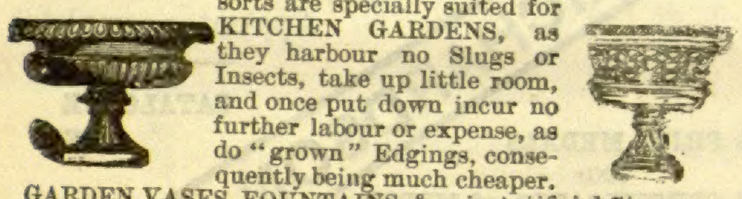

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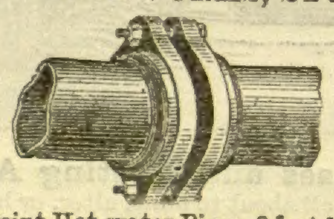

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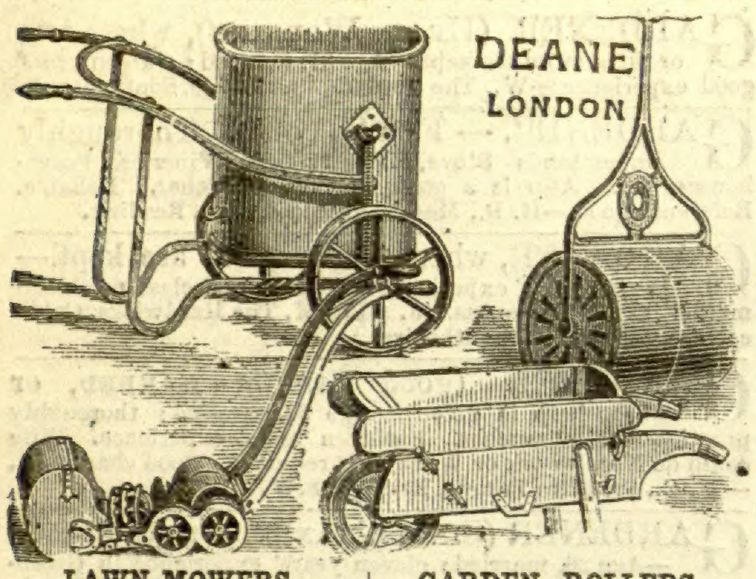

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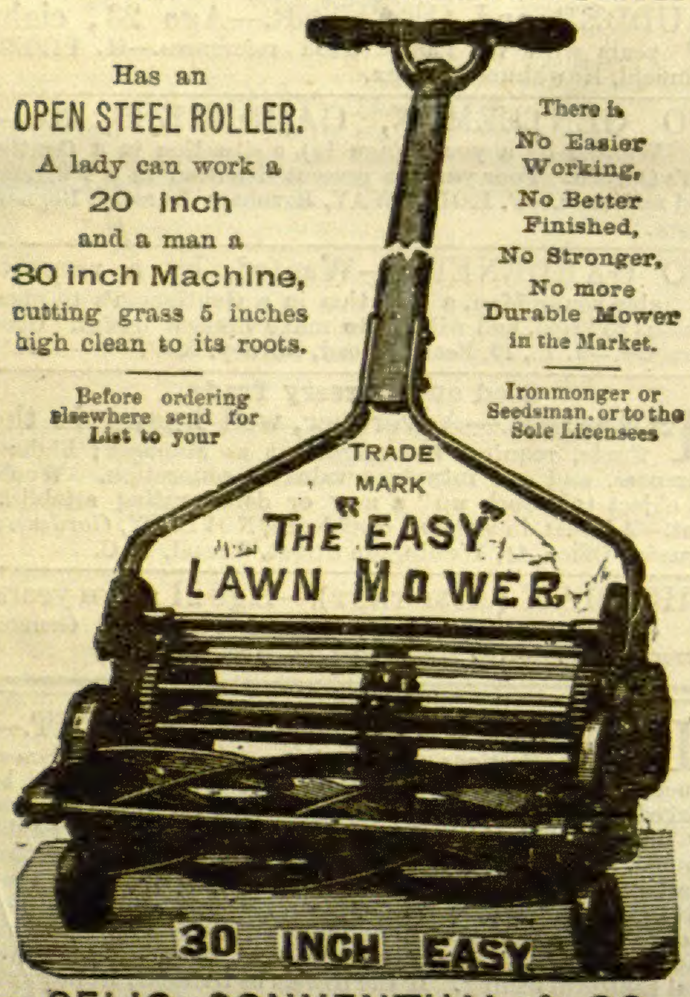

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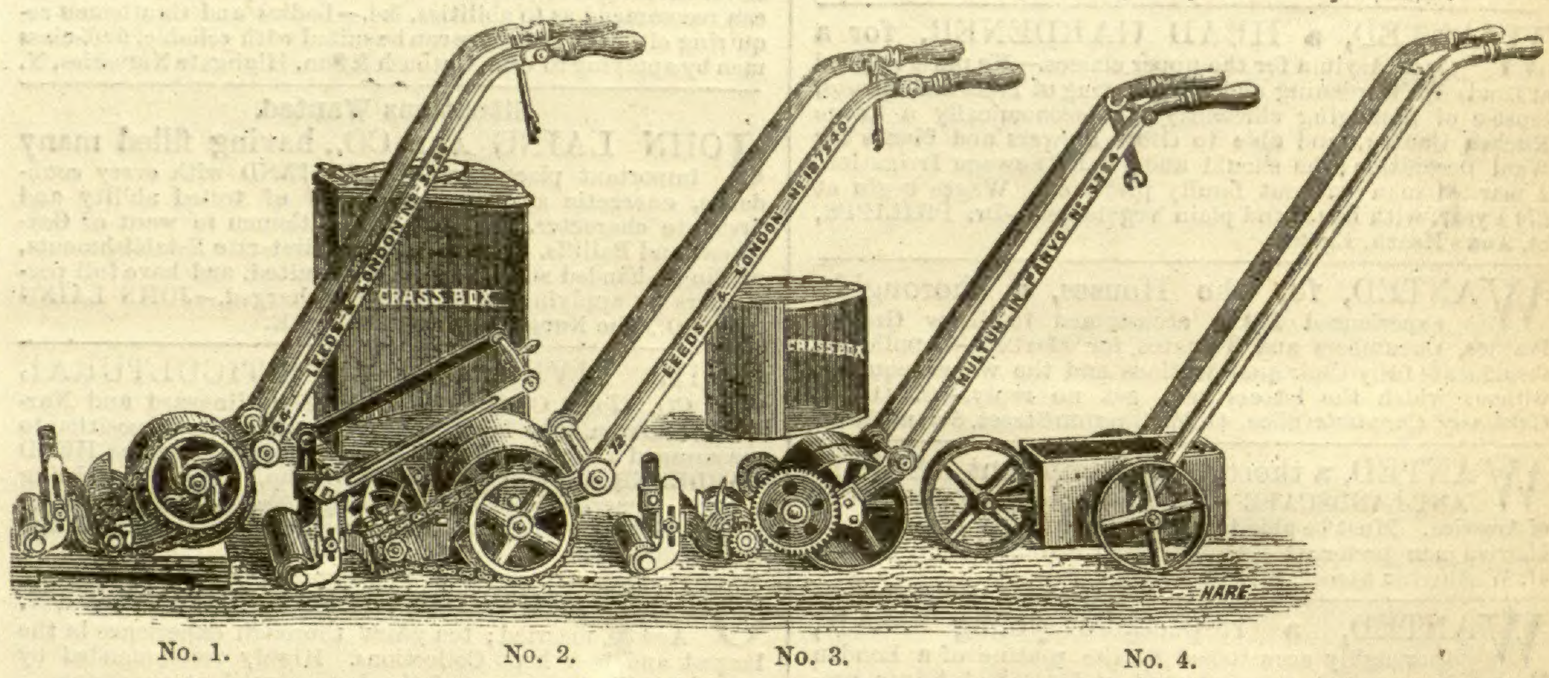

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